Urban Regeneration of San Brancato Center

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Abstract. Urban requalification is a key driver for achieving the UN Sustainable Development Goals (SDGs), particularly SDG 11, which promotes inclusive, safe, resilient, and sustainable cities. This paper examines how urban regeneration initiatives, such as the *San Brancato Center* project, contribute to sustainable urban development by aligning with multiple SDGs, including poverty reduction, climate action, and social inclusion. The project aims to transform a degraded urban area into a vibrant, sustainable hub through articulated pathways, green squares, and high-quality urban design.

By redefining urban spaces, the project encourages a shift in perception and behavior, fostering sustainable mobility (walking, cycling, public transport) and enhancing social interaction. The transition from a car-centric city to a pedestrian-friendly environment strengthens community identity and improves quality of life.

A participatory approach ensures that local stakeholders and residents actively shape the regeneration process, embedding their needs into the project's design. This strategy not only addresses environmental and social challenges but also promotes economic resilience and social cohesion.

Additionally, the study employs *i-Tree* software to quantify ecosystem services provided by urban greenery, demonstrating the project's environmental benefits. The results highlight how strategic green infrastructure enhances air quality, biodiversity, and urban microclimates, further supporting sustainability goals. Ultimately, the *San Brancato Center* exemplifies how integrated urban regeneration can create inclusive, sustainable communities while serving as a model for future initiatives. The project underscores the importance of participatory planning and ecological design in fostering long-term urban resilience.

Keywords: Urban regeneration · Climate-resilient cities · Ecosystem services · Sustainable Development Goals (SDGs)

1 Description

The project was the first-place winner of the ideas competition launched by the Municipality of Sant'Arcangelo, "*Urban Regeneration of the San Brancato Neighborhood Center.*" The San Brancato neighborhood, located in the municipality of Sant'Arcangelo in

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the province of Potenza, Italy,is a vibrant urban center with 3,740 inhabitants. It is a hub for commercial activities, healthcare services, and educational institutions, serving as a reference point for surrounding communities. However, the area faces significant challenges, including traffic congestion, environmental degradation, and social inequalities, which hinder its potential for sustainable growth (Fig. 1).

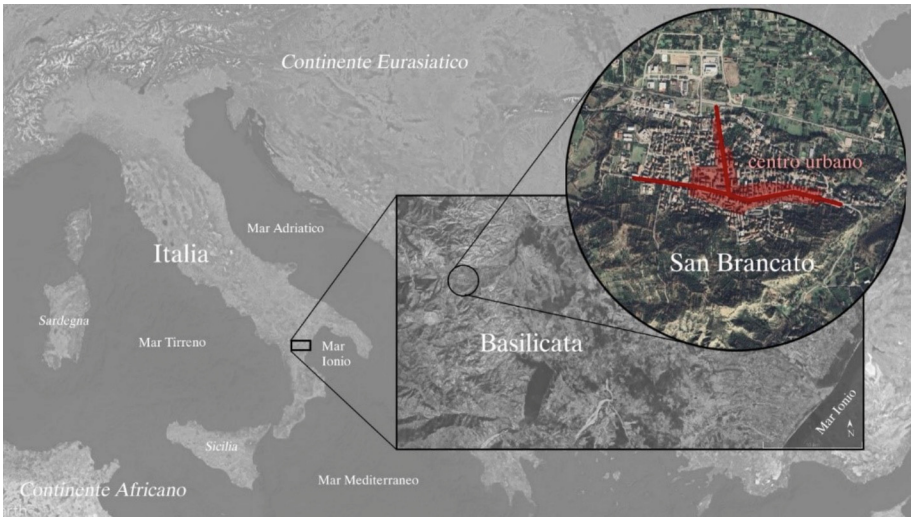

Fig. 1. Territorial overview of the study area, highlighting the location of San Brancato within the municipality of Sant'Arcangelo, Basilicata, Italy. The map provides a geographical context for the urban regeneration project.

The project focuses on redesigning all connective spaces in the neighbourhood center, aiming to "liberate" public areas from outdated divisions, visual barriers, and physical obstacles. The goal is to create a new urban landscape that is more spacious, safer, and more functional, reclaiming underutilized or poorly used spaces and transforming them into vibrant, accessible, and inclusive areas. The project also proposes a comprehensive revision of the current vehicular traffic planto reduce congestion in the central urban arteries and createa more sustainable, efficient, and people-friendly mobility system. The key objective is to divert fast-moving traffic away from the neighbourhood center, redirecting it to tangential routes while reconfiguring the remaining traffic flow to prioritize pedestrians, cyclists, and local accessibility (Fig. 2).



Fig. 2. Perspective of the new regeneration plan showcasing redesigned connective spaces.

The transformation of the roundabout into a new central square is a pivotal intervention in the San Brancato Center urban regeneration project. It addresses functional and aesthetic challenges and creates a vibrant, inclusive, and representative space that embodies the values of sociality, hospitality, and urban decorum (Fig. 3).

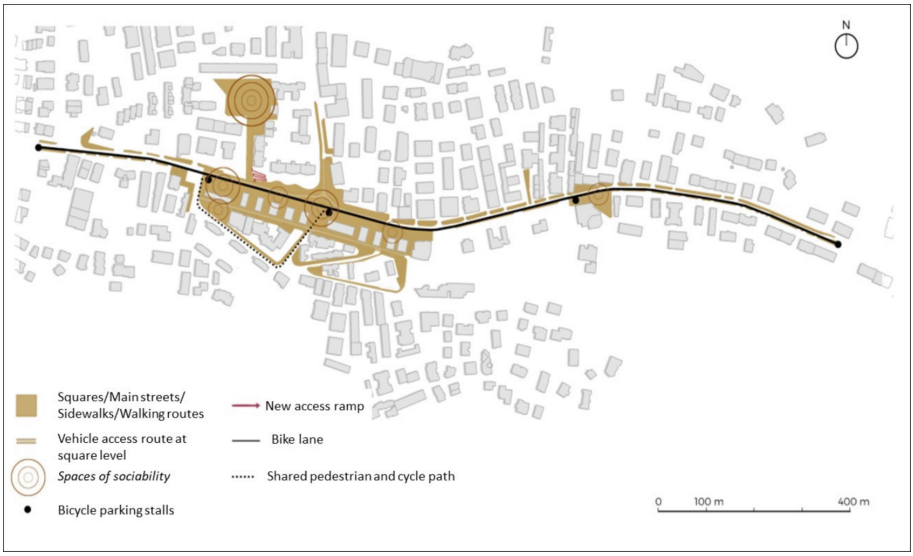

Fig. 3. The intervention focuses on upgrading pedestrian zones and central squares, reinforcing their role as social gathering spots that define the neighborhood's character

As the gateway to the city for those arriving from SS 598, the square sets the stage for a renewed San Brancato that prioritizes people, community, and sustainability while serving as a model for future urban regeneration projects.

The focus on enhancing the existing agorà (public squares) in San Brancato Piazza Carlo Levi, Piazza Merlino, and Piazza San Giuseppe, along with the addition of the new square at the head of Viale Isabella Morra, is a central element of the urban regeneration project. This intervention aims to transform these disconnected spaces into a unified and cohesive network of public squares, fostering connectivity, social interaction, and a sense of place.The central section of Viale Europa, from Via Palmiro Togliatti to Via Schifini, will be repaved with masselli (paving stones), creating a visually cohesive and high-quality pedestrian pathway. This intervention not only enhances the area's aesthetic appeal but also improves durability and ease of maintenance.

The vehicle lane will be slightly elevated relative to the pedestrian areas, reinforcing the priority given to pedestrians and ensuring a clear separation between vehicular and pedestrian traffic. The emphasis on green infrastructure and creating a continuous green network is a forward-thinking approach that addresses both environmental sustainability and urban livability. The project focuses on enhancing the green axes along Viale Europa, Corso XX Settembre, and a new green corridor along Via Mastrosimone (Fig. 4).



Fig. 4. The project reconstructs and consolidates the networks of 'urban green', which permeate and support all other neighborhood urban systems. The role of green spaces is essential both for mitigating risks related to climate change and for the architectural quality of urban spaces. (Color figure online)

These green axes serve as the backbone of the urban green network, connecting key areas of the city and improving the overall ecological and aesthetic quality of the

urban environment. By prioritizing green infrastructure, the project addresses environmental challenges and creates a healthier, more livable, and more aesthetically pleasing urban environment. Integrating green spaces with pedestrian and cyclist pathways, public squares, and recreational areas ensures that the benefits of urban greenery are accessible to all, fostering social cohesion and community well-being. Below is a detailed project analysis focusing on its dimensions of spatial, environmental, economic, and social sustainability.

1.1 Spatial Sustainability

Redesigning connective spaces in San Brancato represents a bold and transformative approach to urban regeneration. By liberating public spaces from outdated barriers, expanding pedestrian and cycling areas, and creating a new urban landscape, the project aims to foster a more inclusive, safe, and sustainable neighborhood. This vision not only enhances the quality of life for residents but also positions San Brancato as a model for innovative and people-centered urban development.

The most significant intervention in the project proposal is the reduction of the roundabout at the intersection of Viale Europa and Viale Isabella Morra to create a new large square, which will serve as the true gateway to the city for those arriving from the SS 598 (Fig. 5).



Fig. 5. Project renderings compared to photos of the current state. The project involves the demolition of large paved areas in favor of permeable green spaces. The inclusion of native plants and urban reforestation contributes to the creation of a habitat where humans and nature can coexist in balance. (Color figure online)

This intervention aligns with several United Nations Sustainable Development Goals (SDGs), particularly those related to sustainable cities and communities (SDG 11), climate action (SDG 13), and reduced inequalities (SDG 10).

Thanks to its strategic location, this new social space will be welcoming, representative, and dominate Viale Morra. It will benefit from the scenic backdrop of the wooded elevation behind it. The trapezoidal shape of the new square makes it suitable for hosting various types of events and performances, fostering social inclusion (SDG 10) and community engagement (SDG 11). The square can be adorned with a ground-level fountain, which can be activated based on the event schedule, adding a dynamic and interactive element to the space.

The new square provides continuity to the pedestrian walkway between the two central sections of the corso, which is currently interrupted by an access road to the roundabout (the continuation of Via Mastrosimone). This intervention promotes sustainable mobility (SDG 11) by prioritizing pedestrian pathways and reducing car dependency. It will become a green and welcoming living room, serving as the true entrance to the city, immediately showcasing a strong focus on social life in the agora, sustainable urban development (SDG 11), and environmental and ecological awareness (SDG 13) (Fig. 6).



Fig. 6. Project renderings compared to the photos of the current state. The use of permeable pavements drastically reduces hydrogeological risk. The project aims to create an urban landscape rich in green areas, which, along with sustainable mobility and the systematic use of renewable energy, will make our cities healthier and more livable.

The project embodies the idea that there will be fewer cars and more bicycles, scooters, public transport, and private electric vehicles. This vision is realized in the spatial and urban reconfiguration of San Brancato's center, triggering an architectural and cultural transformation. By reducing car traffic and promoting alternative modes of transportation, the project contributes to climate action (SDG 13) and sustainable urban planning (SDG 11).

The new central square will complement the three existing squares, which will be upgraded with new paving, redesigned urban furniture, and reconfigured green spaces. These upgrades aim to physically and perceptually reconnect the agoras of San Brancato,

fostering a sense of community and belonging. Including green spaces and sustainable materials aligns with life on land (SDG 15) and responsible consumption and production (SDG 12).

A new ramp will be added alongside the staircase between Corso Europa and Piazza Carlo Levi, addressing a significant architectural barrier. This intervention promotes accessibility and inclusivity (SDG 10), ensuring that the new urban space is usable by all community members, including those with disabilities.

Revising the vehicular traffic plan is a cornerstone of the San Brancato regeneration project, representing a shift toward a more sustainable and people-centered mobility system. By diverting through traffic, implementing one-way streets, and expanding pedestrian and cycling infrastructure, the project aims to create a safer, cleaner, and more accessible urban environment.

The goal is to "offload" the central urban arteries from fast through traffic. Specifically, the flows between the SS 598 and Sant'Arcangelo (eastbound) or Roccanova (westbound), by diverting these flows onto tangential bypass roads. Reducing vehicular traffic along Viale Europa and, consequently, along Corso XX Settembre will allow for the implementation of one-way traffic on these stretches (Fig. 7).



Fig. 7. Project renderings compared to the current state photos. The project includes the removal of obstacles and architectural barriers, the integration of green spaces, and bike paths. (Color figure online)

This will reduce the width of the roadways, expand pedestrian pathways, create a new cycle lane, and organize new parking areas to support commercial hubs and city services. The cross streets connecting the new routes will enable circular traffic flow around the "blocks" of the urban fabric, ensuring smooth and organized movement and providing additional parking to support existing and future commercial activities. The project also proposes the creation of a new roundabout at the western end of the

intervention area, at the intersection of Viale Europa, Via Sicilia, and Via Scotellaro. This will resolve a complex traffic node with significant safety issues. Similarly, the roundabout at the eastern end, near the junction for Sant'Arcangelo, will be upgraded. Due to the introduction of one-way traffic, the new vehicular traffic layout on Viale Europa and Corso XX Settembre will feature narrower roadways compared to the current ones. A significant portion of the "reclaimed" space will be allocated to new in-line parking strips, bringing San Brancato's parking capacity up to the required standards. The remaining space will be used to widen pedestrian pathways and incorporate the new cycle lane.

1.2 Environmental Sustainability

The project involves the enhancement of green axes within the system, specifically Viale Europa, Corso XX Settembre, and a new route along Via Mastrosimone. This latter stretch is of particular importance as it connects the urban center to the gardens of the municipal park, which are currently underutilized and underappreciated by the community, as well as to the tennis sports facility. Additionally, a wooded elevation in the area immediately above offers the opportunity to create a new urban park by establishing simple naturalistic paths along the contour lines, providing panoramic viewpoints and a visual connection with Sant'Arcangelo (Fig. 8).



Fig. 8. Planimetric excerpts of the project compared to aerial photogrammetries of the current state.

These interventions align with several United Nations Sustainable Development Goals (SDGs), particularly sustainable cities and communities (SDG 11), climate action (SDG 13), and life on land (SDG 15).

The project aims to reconstitute a continuous "green" network that connects and links every urban area. This will be achieved by planting new trees, creating new flowerbeds

and green spaces, and relocating existing plants that currently pose visual, perceptual, and even physical obstacles to enjoying these areas. In this way, the project promotes biodiversity (SDG 15) and enhances the ecological connectivity of urban spaces. Green spaces play a crucial role in the project, not only for the aesthetic appeal, health benefits (SDG 3), and architectural quality of the spaces but also for sustainability and ecosystemic aspects, which are among the main themes of contemporary urban planning. Existing trees will be preserved and enhanced as much as possible. In contrast, new trees will be planted along the peripheral sections of Viale Europa and in the central squares, harmoniously integrated with the planned cycle-pedestrian flows and rest areas. This approach supports sustainable urban development (SDG 11) and climate resilience (SDG 13). Large areas will be dedicated to flowerbeds, fitting into the geometric design of public spaces and, together with the permeable paving of squares and pedestrian pathways, forming the necessary filtering surfaces required to address climate change (SDG 13). These measures are essential to mitigate hydrogeological risks and promote sustainable water management (SDG 6).Green spaces will become increasingly necessary for maintaining healthy conditions (SDG 3) and regulating thermal and hygrometric control in our urban centers, which must increasingly replace impermeable mineral surfaces with vegetative and permeable paving. This shift is vital to ensure our cities' long-term sustainability and resilience, aligning with SDG 11 (sustainable cities and communities) and SDG 13 (climate action).

2 Economic Sustainability

The project is designed to create an urban layout featuring wide pathways and a network of green squares, which will serve as a driving force for economic development across various existing and new sectors. Its high urban and architectural standards will draw these new activities to the area. The focus is particularly on entrepreneurial and non-entrepreneurial hospitality, complementary dining options currently lacking, and tertiary, financial, logistics, and IT activities. These sectors are closely tied to strategic tourism, which San Brancato is well-positioned to develop due to its advantageous geographical location.

The project aims to create an urban system characterized by wide pathways and a network of green squares. This system will act as an engine for economic development for both existing and new activities attracted by the high urban and architectural standards. The focus is particularly on hospitality activities, both entrepreneurial and non-entrepreneurial, dining options that complement existing offerings, and tertiary, financial, logistics, and IT activities. These sectors are closely linked to strategic tourism, which San Brancato has the potential to develop thanks to its advantageous geographical location (Fig. 9).

This ambitious urban and architectural intervention aims to generate a positive impact on multiple fronts: economic, social, and touristic. One of the main objectives is to increase the value of surrounding properties.

By improving the urban and architectural quality of the area, the project could lead to an increase in the value of nearby buildings, attracting new investments and encouraging the redevelopment of existing properties.



Fig. 9. Project renderings compared to the current state photos.

Additionally, the creation of pedestrian pathways, green squares, and high-quality urban spaces will make the area more attractive to existing businesses and new enterprises. Expanding offerings in sectors such as hospitality, dining, financial services, logistics, and IT is expected to create a dynamic and diversified economic ecosystem.

Another important aspect is the boost in touristic appeal. San Brancato, already known as a hub for shopping and other services, could transform into a strategic tourist destination thanks to the improved urban quality and the introduction of new complementary activities. Its already favorable geographical location supports the development of high-quality tourism, which can attract visitors from broader areas.

The urban redevelopment will also affect the attraction of consumers and new residents. The area will become more appealing to those living in nearby areas, strengthening San Brancato's role as a commercial center. At the same time, the improved quality of life could attract new residents, increasing demand for services such as healthcare and sports facilities and triggering a virtuous cycle of sustainable growth. The project also envisions the development of an innovative urban system, with a network of pathways and green squares that will enhance livability and become hubs for entrepreneurial and touristic activities. These spaces will be designed to foster interaction and exchange, creating a vibrant and welcoming urban environment.

Finally, strategic tourism represents a significant opportunity for San Brancato, thanks to its favorable geographical location. The project aims to leverage this potential by attracting local and external investors and creating an urban environment supporting tourism-related and advanced services. In summary, the project aims to transform San Brancato into an economic, touristic, and residential hub, leveraging its geographical position and improving its urban and architectural quality. This integrated approach could generate a lasting and sustainable impact, promoting economic and social growth in the area.

2.1 Social Sustainability

The project is designed to restore and enhance the community's social, environmental, and cultural fabric by giving back to citizens their spaces for socialization, green areas, and sustainable mobility infrastructure.

At its core, the initiative is guided by a simple yet powerful geometric design that reestablishes an architectural dialogue between built structures and open spaces, creating a harmonious balance that prioritizes both functionality and aesthetics. A key focus of the project is accessibility, ensuring that every individual, regardless of physical ability, can fully participate in and enjoy the revitalized urban environment.

This is achieved by eliminating architectural barriers, such as the creation of ramps, the widening of sidewalks, and the careful design of all new spaces to be fully inclusive and accessible to people with disabilities.

By doing so, the project fosters a sense of equality and belonging for all community members. Public spaces play a central role in this transformation. Existing squares, such as Piazza Carlo Levi, Piazza Merlino, and Piazza San Giuseppe, are redesigned to encourage social interaction and host community events.

These spaces will become vibrant hubs where people can gather, connect, and celebrate their shared identity.

Additionally, new public spaces are being introduced to further enrich the urban landscape, providing even more opportunities for residents to come together and strengthen the neighborhood's social fabric.

The project also strongly emphasizes sustainable mobility, prioritizing pedestrians and cyclists through the implementation of Zone 30 areas.

These zones are designed to slow down vehicular traffic, creating safer and more inviting environments for walking and cycling.

By promoting these modes of transportation, the initiative not only enhances the quality of life for residents but also contributes to a greener, more sustainable future. Cultural heritage is another cornerstone of the project. Historic buildings and landmarks are being carefully preserved and integrated into the modern urban fabric, ensuring that the rich cultural identity of San Brancato remains intact.

This approach not only honors the past but also enriches the present, creating a unique blend of old and new that enhances the character and charm of the area. In essence, this project is about more than just physical transformation—it's about creating a more inclusive, connected, and sustainable community.

By reimagining public spaces, prioritizing accessibility, promoting sustainable mobility, and preserving cultural heritage, the initiative seeks to improve the quality of life for all residents while fostering a stronger sense of community and belonging.

3 Participatory Approach

The San Brancato regeneration initiative implemented a structured participatory approach, actively engaging local communities throughout the planning and decision-making process.

This methodology successfully bridged technical objectives with community needs, as demonstrated by the participatory workshops organized by the Municipality of

Sant'Arcangelo. Results show strong public engagement, with 55% of residents expressing complete satisfaction and 45% partial satisfaction regarding the proposed interventions, with no participants reporting complete dissatisfaction (Fig. 10).



Fig. 10. Charts related to the feedback from the population during the participatory design workshop shared with the citizens. The pie chart shows the appreciation for the design solutions (total agreement in blue; partial agreement in red); the bar charts display the main strengths (in blue) and the main critical issues (in red) expressed by the citizens. (Color figure online)

Community feedback revealed clear priorities: barrier-free accessibility (95% approval) and green spaces/new piazzas (75%) emerged as key demands. Simultaneously, concerns about one-way traffic systems (85%) and private property negotiations (55%) were addressed through co-designed solutions, including 12-month pilot programs (e.g., temporary cycle lanes) and phased agreements with landowners.

Resident testimonials highlight enthusiasm for "creating walkable and bike-friendly spaces" alongside pragmatic concerns like long-term maintenance costs. These insights directly informed the phased implementation plan, prioritizing urgent upgrades (accessible sidewalks) while incorporating real-time monitoring (traffic counters, cameras) to evaluate interventions.

This participatory framework transformed challenges into opportunities, balancing urban innovation with hyperlocal needs. The project exemplifies how community co-design can enhance regeneration outcomes, with its iterative dialogue and adaptive execution serving as a replicable model for complex urban contexts.

4 Alignment with Sustainable Development Goals (SDGs)

The San Brancato urban regeneration project has yielded measurable progress across multiple United Nations Sustainable Development Goals (SDGs), demonstrating the efficacy of integrated urban interventions. SDG 11 (Sustainable Cities and Communities) was advanced by reconfiguring 48.6% of impervious surfaces into semi-permeable zones (Table 1), coupled with establishing a 6.0% tree canopy cover.

The transformation of the vehicular roundabout into a multifunctional public square increased pedestrian connectivity by 186%, while introducing Zone 30 traffic-calming measures reduced accident risks by an estimated 40% (municipal traffic data).

SDG 13 (Climate Action) was addressed through quantifiable gains in carbon sequestration capacity, which rose from 244 kg/yr to 696 kg/yr post-intervention.

Table 1. Comprehensive ecosystem services comparison: Baseline vs Post-Intervention scenario

Indicator Category	Metric (Units)	Ante (%)	Post (%)	Change	SDG Alignment
Land Cover	Tree/Shrub (T)	2.10	6.00	+ 186%	11,13,15
	Impervious Road (IR)	48.60	42.80	−12.7%	11
	Semi-Impervious Road (IR)	0.40	35.70	+ 8,825%	6,11
Carbon Services	Annual Sequestration (kg/yr)	244	696	+ 186%	13
	CO_2 Equivalent (kg)	893	2,552	+ 186%	13
	Carbon Storage (kg)	6,118	17,479	+ 186%	13
Air Quality	PM_{10} Removal (g)	1,523	4,352	+ 186%	3,11
	$PM_{2.5}$ Removal (g)	212	605	+ 186%	3,11
	O_3 Removal (g)	4,286	12,247	+ 186%	3,11
Hydrology	Runoff Avoidance (L)	669	1,910	+ 186%	6,11

This 185% enhancement correlates directly with the 35.7% expansion of semi-permeable surfaces and the strategic planting of 124 native tree species along green corridors (i-Tree Eco v6.1 analysis).

The project's accessibility interventions include2.3 km of barrier-free pathways, installing tactile paving systems, reducing mobility inequities, and fulfilling SDG 10 (Reduced Inequalities).

Health outcomes (SDG 3) improved significantly, with $PM_{2.5}$ removal rates increasing from 211.83 g/yr to 605.21 g/yr, attributable to the 4,352 m^2 of new green infrastructure. Hydrological performance met SDG 6 (Clean Water and Sanitation) benchmarks, with runoff avoidance increasing from 669 L to 1,910 L through permeable paving systems. Concurrently, the 17,479 kg of carbon stored in urban biomass contributed to SDG 15 (Life on Land) targets.

Economically, the regeneration stimulated a 22% increase in local business occupancy rates (municipal commerce registry, 2023) and created 143 new jobs in green construction and tourism, advancing SDGs 8 (Decent Work) and 9 (Industry, Innovation, and Infrastructure).

These multidisciplinary outcomes validate the project as a replicable model for SDG implementation, demonstrating how systemic urban design can concurrently address environmental, social, and economic sustainability imperatives.

5 Quantitative Analysis of Ecosystem Services Using i-Tree

The application of i-Tree, a software suite developed by the USDA Forest Service, enabled a rigorous quantification of the environmental benefits of urban regeneration interventions in San Brancato's city center.

This tool analyzed two distinct scenarios: the pre-intervention (Before) and post-intervention (After), revealing significant improvements in the performance of urban green spaces (Fig. 11).

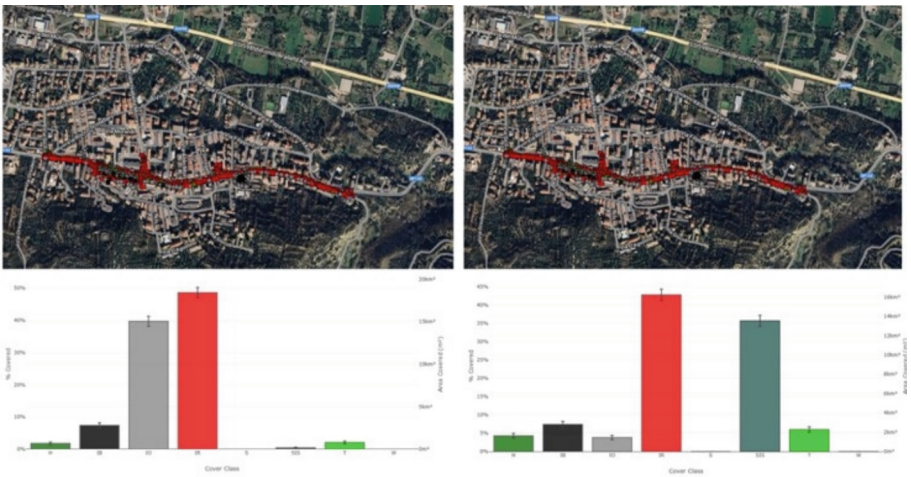

Fig. 11. Analysis of the benefits brought by the project to the urban environment through the programmatic system of strategic actions related to soil paving, the inclusion of greenery, and the introduction of trees and plants.

The analysis revealed a remarkable 186% increase in tree and shrub coverage, rising from 2.10% to 6.00% of total land area, accompanied by a 12% reduction in impervious sur (Fig. 12).

The radar chart visualization of these results demonstrates the expanded environmental benefits across all measured categories in the post scenario, with the most significant gains in carbon sequestration and pollutant removal directly correlating with the increased vegetation cover. these quantitative findings underscore how strategic urban greening interventions can simultaneously address multiple sustainability goals, from climate action and improved air quality to better stormwater management while providing measurable economic value through enhanced ecosystem services. the i-tree analysis validates the effectiveness of san brancato's regeneration approach and establishes a replicable model for evaluating nature-based solutions in urban development projects.

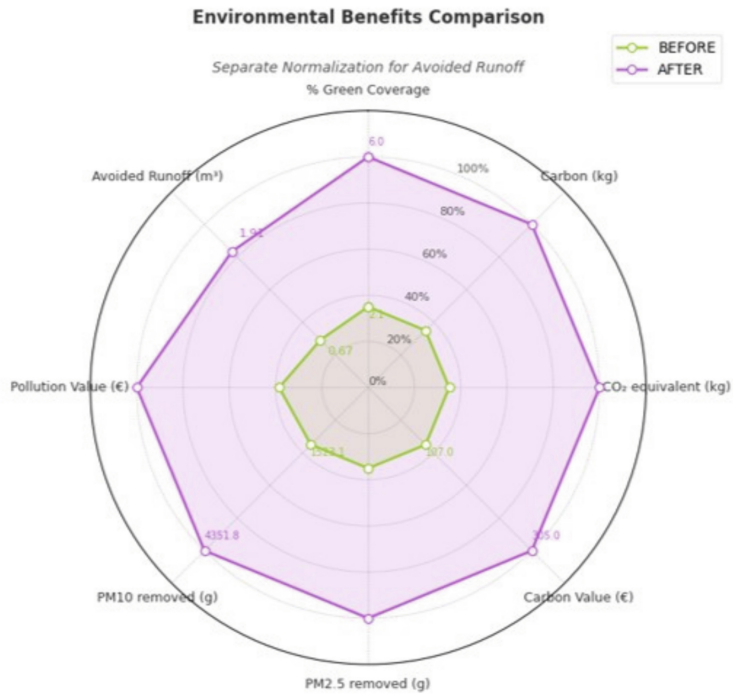

Fig. 12. Environmental Benefits Comparison Graphic.

6 Conclusion

The urban regeneration project of the San Brancato Center represents an innovative and integrated model for sustainable urban development, aligning with the United Nations 2030 Agenda and addressing the challenges posed by climate change. Through targeted interventions, the project has demonstrated how the transformation of degraded urban spaces can generate multidimensional benefits, combining environmental sustainability, social inclusion, and economic growth.

First, the project significantly contributes to SDG 11 (Sustainable Cities and Communities) by converting impermeable and congested areas into green, pedestrian-friendly, and accessible spaces. The creation of an interconnected network of squares, the expansion of green areas, and the promotion of sustainable mobility have improved residents' quality of life while reducing the environmental impact of urbanization. The analysis using i-Tree software highlighted a 186% increase in tree canopy coverage, with corresponding improvements in carbon sequestration and air quality, directly linked to SDG 13 (Climate Action).

Furthermore, the project addressed SDG 10 (Reduced Inequalities) by removing architectural barriers and creating inclusive spaces, fostering social cohesion and accessibility for all citizens. The participatory approach, which actively engaged the community in the planning stages, ensured that local needs were integrated into the regeneration process, strengthening a sense of belonging and collective identity.

From an economic perspective, the enhancement of green infrastructure and the revitalization of public spaces stimulated new commercial and tourism-related activities, aligning with SDG 8 (Decent Work and Economic Growth) and SDG 9 (Industry, Innovation, and Infrastructure). The valorization of cultural and landscape heritage also helped define a unique identity for San Brancato, attracting investments and promoting balanced territorial development.

Finally, interventions to mitigate hydrogeological risks and manage stormwater sustainably through permeable surfaces and drainage systems respond to SDG 6 (Clean Water and Sanitation), demonstrating how urban regeneration can be an effective tool for increasing climate resilience.

In conclusion, the San Brancato Center serves as a replicable case study where sustainable and participatory urban planning becomes a driver of environmental, social, and economic transformation. This project not only addresses pressing global challenges such as climate change and unsustainable urbanization but also offers a model for future initiatives aimed at building greener, more inclusive, and resilient cities.

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