

Sustainable Policies and Participation for Integrated Mobility Prospects in Cities. Case Studies in the Ligurian Region



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Abstract The paper reports a research on participatory sustainable mobility and its application in idea competitions promoted by municipal governments and associations. The objective of the experiences reported is to promote regeneration processes through policies and strategies related to sustainable mobility. Rethinking sustainable mobility means also to guide society toward sustainable development by placing people at the center of urban mobility, according to the principles of Agenda 2030. Actions taken for more sustainable mobility lead to a path that increases the demand for integrated services for moving people and goods. In this context, the involvement of various local actors (people, association, university,...), starting with public administrations, is indispensable.

The methodological approach used goes through several participatory phases. The main result achieved was to start concrete collaborations, putting the various players involved around a table with the common aim of improving the viability of our cities. In fact, the regeneration of cities and the improvement of their accessibility and mobility services lead to important repercussions on their attractiveness from an environmental and social, tourist, and economic point of view.

The presented projects were carried out within university courses in collaboration with different public administrations in the Ligurian region.

Keywords Sustainable mobility · Participation · Regeneration

1 Introduction

Rethinking sustainable mobility also means promoting urban regeneration actions according to the principles of Agenda 2030. Sustainable mobility is the ideal model of a transport that minimizes environmental impact while maximizing efficiency,

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intelligence, and speed of travel. Goal 11 of Agenda 2030, Sustainable Cities and Communities, aims to make cities and human settlements inclusive, safe, durable, and sustainable. Therefore if we talk about sustainable cities, it is important to emphasize the role of sustainable mobility at the urban level.

Specifically, Goal 11 of the 2030 Agenda aims by 2030 to: “provide access to safe, affordable, accessible and sustainable transport systems for all; improve road safety, particularly by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons (11.2) and reduce the negative per capita environmental impact of cities, particularly with regard to air quality” (11.6) [1].

Urban mobility infrastructure must contribute to the attractiveness and environmental performance of urban areas. Such mobility must be sustainable according to three aspects: environmental, social, and economic. With regard to the first aspect, it is important to reduce harmful emissions into the atmosphere; about the second, it is essential that mobility is inclusive and accessible (for different types of users, means of transport, times of the day,...) and finally in coherence with the third aspect, it must promote the creation of new jobs. Indeed, thanks to sustainable mobility, benefits in terms of territorial, social, environmental, and economic development are possible to have. Interventions for sustainable mobility increase the demand for integrated services for the movement of people and goods, consequently reducing air pollution, noise, congestion and accidents and recovering degraded public places.

When talking about sustainability, another concept is also crucial to introduce: the participation of different territorial actors. Citizen involvement aims to improve decision-making by producing better policies, building trust, gaining acceptance of policies, and sharing responsibility for policymaking [2]. Goal 11 of Agenda 2030 itself aims to “increase the capacity for participatory and integrated planning and management of human settlement in all countries” (11.3) [1]. The term participation refers to social processes in which citizens, or representative groups of citizens and associations and administrations (responsible for the object discussed) are involved. These processes are based on dialogue and have as their goal the resolution of a collective situation perceived as problematic or the choice of a decision in the public interest.

Individuals, groups and organizations are given the opportunity to participate in decision-making that affects them or in which they have a relevant interest [3].

All actors are called to contribute actively; the role of public administration is important in this context. Local authorities—given their proximity to the territory—are called to the forefront to take a central role in implementing, planning, and financing evaluation measures [4].

A good participatory path requires a careful cognitive and organizational phase to clarify the different participatory methods available, the assumptions—objectives and context conditions—and the strengths and weaknesses of the chosen participatory method. The techniques of participatory processes can be quantitative, qualitative, and participatory; different are the corresponding methods. Participation today responds to the demands dictated by the European Union to implement projects and

planning tools at the urban and/or territorial level attentive to sustainability declined in environmental, economic, and social.

The paper reports the results of some experiences aimed at initiating regeneration processes from participatory policies and strategies aimed at sustainable mobility planning.

2 Methodological Proposal Toward Sustainable Participatory Mobility

The paper introduces some research carried out on the topic of participatory sustainable mobility developed as a result of projects promoted by municipal governments and associations. These experiences have led to the drafting of specific urban planning projects.

In recent years, the Urban planning technique course at the University of Genoa (where the authors teach) participated in urban regeneration competitions. Such competitions, promoted by public entities, have been carried out to stimulate active participation. All stakeholders have benefited from this opportunity: students have been able to work on current issues by continuously confronting to the territory and public administrations; the municipality has been able to develop innovative and sustainable project ideas, which sometimes, have been partly implemented. The Course laboratory thus became operationally the territory under study, to be analyzed and redesigned where necessary.

Sustainable mobility was one of the pivotal issues considered in urban planning projects aimed at regeneration. Specifically, key aspects considered were: intermodality and thus the possibility of using different means (particularly sustainable: train, bus,...), inclusion of new infrastructure (sharing), soft mobility: pedestrian and bicycle, accessibility. Another fundamental theme considered in the design drawings was that of participation, thus going to develop projects focused on integrated and participatory sustainable mobility (Fig. 1).

The methodological approach stems from previous research [5] and involves several phases that were developed taking into account the participation aspect as well (Fig. 2). The phases and the results obtained are then merged with the technical aspects and knowledge of those who live, work, and know an area.

The first step is the cognitive phase, which was based on the retrieval of initial documents and information, such as statistical yearbooks, from the study of current urban planning instruments and the collection of information reported by the actors involved in the participatory process. This phase included questionnaires, interviews, and in-person or online meetings.

The second step was the analytical phase. This phase included different types of partial analyses aimed at providing a fundamental overview for the third phase (planning). Analyses typical of the business world, but now well established in urban planning, such as SWOT and PEST, were used. These methods allow the

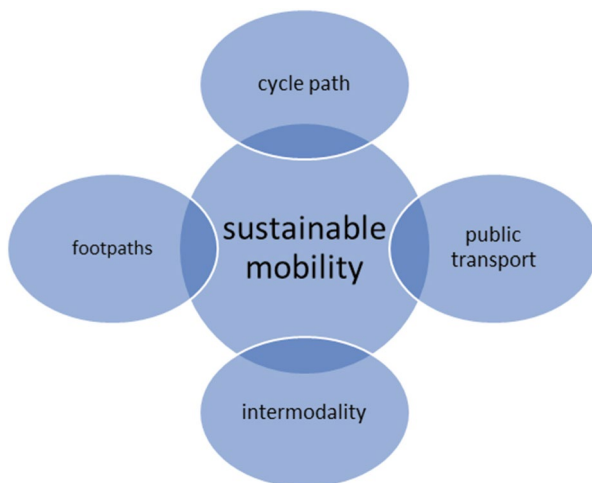


Fig. 1 Sustainable mobility: main features

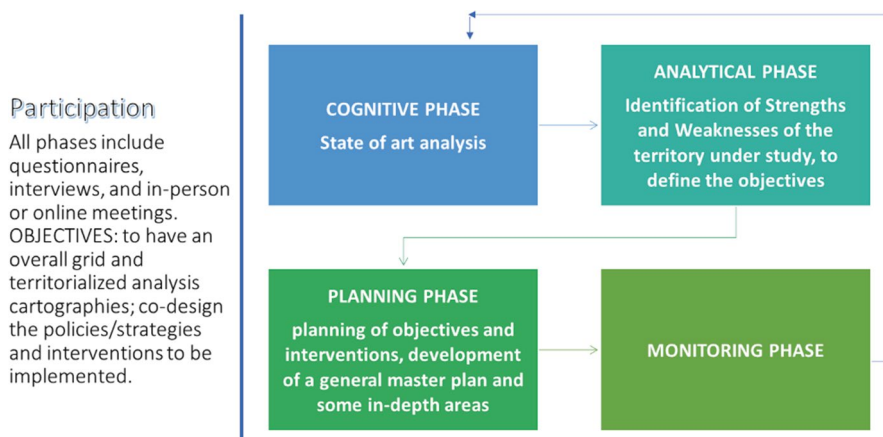


Fig. 2 Methodological approach

identification of strengths, weaknesses, critical issues, opportunities, and to take into account political, economic, social, and technological aspects. Another type of analysis took into account the views of the different actors involved in the activated process. This phase included surveys, interviews, and in-person or online meetings. Thanks to the integration of different tools, it was possible to have an overall grid and territorialized analysis cartographies.

The third and final phase was the planning of objectives and interventions, which involved the development of a general master plan and some in-depth aspects in detail.

Several guiding parameters were also considered for each intervention. For example, for cycling, these include safety, integration, functionality, intermodality, use of new technologies, and design. The planning phase systematized what emerged from the previous phases and, also thanks to the participation of the actors involved, arrived at the definition of policies/strategies to promote, as far as the mobility theme is concerned, intermodality, car-bike sharing, ICT incentives, and tools,... up to the co-design of the interventions to be implemented (routes-bicycle lanes, pedestrian walkways,...).

In this phase, the concept of experiential participation, based on the experience of the actors involved, was applied. In the definition of a new bike route, for example, experiential participation is important because it allows to support the design by following the indications of those who use the bike today without a real infrastructure present in the area (highlighting why they ride precisely that route, for slope, rather than for safety,...). All phases are therefore participatory because within each one the different stakeholders were involved to identify projects that would lead to an improvement in the quality of life for the population (both residents and tourists). In fact, the idea of participation developed is intended to accompany the entire cycle of public policy formulation and implementation (including the moment of management and implementation). In this way, everyone, and in particular the population, becomes an active participant in the definition and subsequent implementation of projects and in taking care of the commons.

The results of these experiences have been the implementation of participatory urban planning projects aimed at improving realities considered significant such as sustainable mobility.

3 Urban Planning Projects and Participatory Sustainable Mobility

From 2020 to the present, the Urban planning course of the University of Genoa has participated in 3 calls for projects promoted by public administrations in the Ligurian region. The competitions have been in the municipalities of Genoa, Busalla, and Albisola Superiore.

Although the competitions were promoted by public administrations with different characteristics, in terms of size, geographic context (on the sea or in inland area), and vocation (residential, tourist, industrial,...), in all of them the theme of participatory sustainable mobility was central.

In 2020, students of the Urban planning course were invited to participate in the competition: “Let’s give the sea back to Pra’ – Palmaro”, promoted by FondAzione PRIMA’vera and Comunità Praese, under the coordination of Municipio VII Ponente and the Municipality of Genoa. This initiative aimed to contribute to the regeneration of the Praese waterfront in order to improve the livability of the neighborhood. Following the relocation to the sea of the Genoa-Ventimiglia section of the railway

with rail and public transport from all over the valley through an interchange parking lot. The interventions were aimed at improving air quality for better livability. The launch event was conducted telematically (given the protracted health emergency) in February 2021 and the urban planning projects were finalized in May 2021, with the subsequent public event held in July 2021 during which the project was displayed by the five participating student groups. Also in this context, through a questionnaire circulated on social media, it was possible to get input from the resident population in order to develop participatory projects.

The projects implemented focused on a new cycle path and the creation of green, safe, and equipped routes for cyclists. These routes were identified within the study area and planned to ensure their continuity in the surrounding area to allow connections to various strategic points for the municipality. The design of the route, i.e., the materials and colors of the planned furnishings and services, gives the project a sense of unity. With regard to the furnishings, bike-sharing shelters and sustainable bike racks have been planned, integrated with solar panels to produce energy for recharging the bikes themselves, but also with moss-covered panels to improve air quality. In addition, temporal urban planning was used to plan the opening and closing times of certain streets/roads to leave more space for the creation of 30 zones and the free mobility of pedestrians and cyclists. Figure 4 shows some excerpts from the planning documents for the Busalla case study.

In 2022, students from the University of Genoa's Urban planning course were invited to participate in the "Arbisöa Regeneration" competition, promoted by the City of Albisola Superiore. The competition was launched on 21 February through a mixed-mode event (online and in-person) and ended in June.

This initiative aims to realize urban regeneration interventions in the area of Albisola Superiore, in particular by providing for the realization of soft mobility routes capable of connecting the various areas of the municipality. These



Fig. 4 Case study Busalla (Ge): extracts of project drawings

interventions will benefit both inhabitants and tourists by improving the quality of life, reducing pollution, and increasing sustainability. Albisola Superiore, in the province of Savona, is a municipality on the Ligurian coast characterized by the presence of both the sea and mountains at a short distance from each other. Albisola Superiore is internationally famous for its ceramic work. The competition, as in previous cases, was launched in February and ended in June 2022, with the presentation of three projects to the citizens. Participation is useful to identify where to route cycle and pedestrian paths and to evaluate new proposals to improve tourism while also enhancing the hinterland.

The projects presented paid great attention to the issue of mobility. A bike-sharing service and new cycle-pedestrian routes have been planned both to reach the sea and to discover the hills and historical and monumental sites present. Separate cycle paths (from cars and pedestrians) have been defined for greater safety and specific studies on roundabouts have been developed. Special attention has been paid to the concept of accessibility. In-depth studies were developed on the characteristics of new cycle and pedestrian routes, signposting, materials, and junctions at, for example, accesses to bathing establishments. In addition to the legally required road signs, since ceramics are a typical product, specific tiles were designed to be placed along the route to characterize the route and make it an identity element.

To assess the economic feasibility of the projects, the calls relating to the mobility of the National Recovery and Resilience Plan (*Piano Nazionale di Ripresa e Resilienza*, NRRP) were analyzed. The projects also considered the guidelines for participating in the NRRP calls for proposals in order to possibly be eligible for application by the municipal administration and thus realized.

Figure 5 shows some excerpts of the project drafts for the Albisola Superiore case study.

After the presentation of the three case studies, Table 1 summarizes the interventions and strengths of the proposed actions and the impacts they could potentially have in terms of urban regeneration.



Fig. 5 Case study Albisola Superiore (SV): extracts of project drawings

Table 1 Case study strengths in terms of urban regeneration

Case study strengths	Urban regeneration impacts
Real collaborations/co-design between actors involved: public administration, citizen, association, university,...	Cooperation allows to: share knowledge and innovations; create a society with greater capacity to act; create participatory regeneration projects that aim at the safety, sustainable, circular, and resilient development of the territory
Common goal of improving city livability	The actors involved, their skills, time, and funding are channeled and planned to achieve the goal of improving the quality of life of the inhabitants
Promotion of the culture of sustainability applied to mobility: intramodality, sharing, use of non-polluting vehicles	Necessary action to make the various actors involved aware of the usefulness of changing our mobility habits
Improvement of connections and accessibility between different parts of the city; Reduction of architectural barriers	Reduction of architectural barriers to make the territory accessible to all. Promotion and networking also of new functions that are more widespread in the area; possible development of new forms of tourism that are also sustainable. Improvement of territory attractiveness from an environmental, social, tourist, and economic point of view
Temporal urban planning	Useful for programming the opening and closing times of some streets/roads and thus leaving more space for the free movement of pedestrians and cyclists
New soft mobility infrastructure/routes: pedestrian and bicycle; and services: bike-sharing. Study of signposting, junctions for the creation of green, safe, and equipped routes	Improvement of livability, air quality, and security; reduction of vehicular traffic
New materials for road surface	Different materials and colors to distinguish road organization. Improvement of safety and reduction of accidents, creation of separate flows between the different means of transport; improvement of drainage and therefore reduction of flood risks
New and sustainable street furniture (canopies with solar panels and moss-covered panels)	Improvement of livability and air quality; production of energy from alternative sources; creation of identity elements of characterization of the path

4 Conclusion

The traditional transport system has some major obstacles that make it incompatible with the sustainable development of society. Sustainable mobility should therefore be seen as the only solution for institutions and professionals to change the way we live and move by putting the person at the center of urban mobility. Having a good transport system does not necessarily mean having many roads, but rather guaranteeing citizens the possibility of choosing the means of transport best suited to their needs, encouraging as much as possible the use of non-polluting vehicles, favoring a reduction in traffic, and promoting a culture of sustainability applied to mobility.

The main result achieved by the research group was to initiate real collaborations, putting around a table the different actors involved with the common goal of improving the livability of our cities. The regeneration of cities and the improvement of their accessibility and mobility services lead to important spin-offs on its attractiveness from the point of view of, in addition to environmental and social, tourism, and economic. In all the experiences presented, mobility was the starting point for initiating processes for: improving livability and connections between the city and the port in the west part of Genoa; reducing vehicular traffic and air quality, as in the case of Busalla; and making mobility more sustainable in Albisola Superiore, also a destination for mass tourism. Sustainable mobility, on the other hand, can promote the development of new forms of tourism that are also sustainable.

The objective of the experiences described has been twofold: educational on the one hand and, on the other, to serve public administrations by providing sustainable and participatory projects. In the Genoese case, this objective was also achieved in terms of implementation, through participation in the subsequently funded National Innovative Program on Housing Quality (PINQuA, *Programma Innovativo Nazionale per la Qualità dell’Abitare*) call for proposals, which led to the regeneration of Genoa’s new west waterfront.

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