

Resistance and Resilience. A Methodological Approach for Cities and Territories in Italy

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Abstract. The recent pandemic has affected health and lifestyles, highlighting the vulnerability of cities and territories, such as the ecological-environmental and climatic crisis, as a result of the progressive urbanization-urban connections. The prevalence of CoViD-19 cases was recorded in highly connected urban contexts with poor air quality. The entire health emergency was governed in the absence of geographical-territorial references, generalizing limitations and actions to contain the spread of the Sars-Cov2 virus. In this framework, a methodological approach to policy for cities and territories is proposed, for multi-risk management (environment-health) and to formulate responses to change, as part of the completion of the reform of intermediate bodies in Italy also with reference to the National Plan Resistance and Resilience.

Keywords: Multi-risk management · Environment and health · Metropolitan cities

1 Introduction

Before the CoViD-19 epidemic the health risk was considered a second degree one, closely related to a different type of disaster [1]. The recent epidemic highlighted how environmental, geographical and socio-economic factors contribute to delineating different levels of health incidence and severity, due to the spatial distribution of cases and deaths [2]. Known and often neglected aspects in economic planning and urban

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and territorial planning were highlighted, including the conjuncture of the ecological-environmental and climate crisis that requires coordinated responses 'from local to global', according to a multi- risk, as a result of progressive urbanization-urban connections [3]. From the ecological and pandemic crisis, it is necessary to act to increase the resilience of the territorial system, also due to the greater frequency and speed of spread of epidemics that confirm the urgent need for an international - and national vision between: quality of life, health-well-being and natural and urban environment [4, 5] which can be monitored through the main indicators: BES (Equitable and sustainable well-being) and URBES (well-being and natural and urban environment) on which economic planning is also based national [6, 7].

In other words, convergence is necessary between 'Smart City' and 'Healthy City', made favorable by the sharing of their main objectives [8], such as improving the quality of life: in particular air quality, ecosystem services urban, lifestyle and urban green development [9, 10] and social participation and involvement.

The natural disasters that have repeatedly hit the country, from earthquakes to events also induced by climate change, such as landslides and floods, call for the need to improve the resilience of infrastructures, focusing on extraordinary maintenance, prevention and civil protection [11, 12].

Even the multiform Italian territorial and urban system, evolution and transformation of the historic city, confirms the need for a multidimensional approach to the concept of risk, also given by the temporal interrelation, with combined, cumulative and simultaneous effects. In this sense, the metropolitan city/province, due to the initiation of the reform with Law 56/2014, represents the optimal territorial dimension, for the evaluation of phenomena and for the construction of vision to increase resilience, through the Strategic Plan Metropolitan, which constitutes the main act of orientation for the promotion and integrated management of services (education, infrastructure and mobility) and protection (well-being, ecosystem services and civil protection). From the experience of the management of the health emergency, faced mainly by the Government through the Civil Protection and by means of the DPCM (Decree of the President of the Council of Ministers), through a direct State-Regions relationship, actually temporarily modifying the normal institutional balance, it clearly emerges that the reform should begin of intermediate territorial bodies to ensure the necessary subsidiarity and optimal social cohesion [13].

In this framework, the paper is divided into the following parts:

- Section 2, which focuses on territorial competencies and health emergency;
- Section 3, which focuses on the role for the provinces and metropolitan cities;
- Section 4, which proposes a methodology to define an operational theoretical-practical progress to support governance in the construction-revision phase of the Strategic Planning of metropolitan cities/provinces;
- Section 5, dedicated to discussion and conclusions.

2 Territorial Competencies and Health Emergency

One of the issues that went through the period of the CoViD-19 explosion, following the spread of the Sars-Cov2 virus in Italy, concerns the division of competences and powers between the central State and the administrative units of which it is composed, regions and provinces. autonomous in particular.

Throughout the pandemic period, the discussion on which bodies had the last say on operational aspects related to the health emergency, the closures/openings of commercial activities and local public transport remained in the background. These are undoubtedly aspects of regional competence, subordinated to what has been established, in an emergency, by the government structures. The regional dimension has prevailed in terms of assessments, roles, functions and often with an apparent homogeneity that has led to various restrictions on mobility and the exercise of economic and social activities (e.g. regional subdivisions in colors: yellow - orange - red).

The 'empirical' observations of the crisis by CoViD-19, and the analysis carried out, from the health, territorial and environmental point of view [2, 14], have highlighted how the regional level of administrative units appears unsuitable for a more detailed understanding of local phenomena, as well as too stringent for the application of rapid intervention actions (e.g., limitations to mobility and the performance of economic activities), the extent of which often interrupts the relationships and interactions in spatial areas of supra-regional scope. The case of the Milanese metropolitan area, the area most affected by the spread of the Sars-Cov2 virus since February 2020, is emblematic. On the one hand, the analysis of the phenomenon, in the explosive and diffusion phases, had to be based on a narrative mainly on the provincial scale, followed by restrictions and initiatives on the regional scale.

The provincial area was found, as per the analyzes developed, to be the most suitable for observation and a series of considerations on local trends, without going down to the municipal scale, more difficult in terms of data retrieval and representativeness because it is less aggregated [2]. In fact, the analyzes developed have highlighted homogeneity of behavior and diffusion processes that can be explained more easily at the provincial scale which, very often, go beyond regional administrative borders. From the analysis of the standardized CoViD-19 excess mortality as of March 31, 2020 (Fig. 1) referring to the provincial level, it is evident that the most affected area is the 'core' of the Po Valley and the Milanese metropolitan area, which is an area straddling three distinct regions: Lombardy, Emilia Romagna and Piedmont. In particular, the phenomenon that can be identified more markedly especially in the southern and eastern provinces of Lombardy, as well as in those of Emilia.

Considerable parts of the Piedmont and Romagna territory seemed, in the first phase, to be less affected by the phenomenon, highlighting a rather high spatial variability within the individual regional contexts. On the other hand, the containment policies are aimed at individual regional contexts.

3 What Role for Provinces and Metropolitan Cities?

With reference to the complexity of the Italian administrative question, referring above all to the transformation of the intermediate territorial realities, some ideas for the proposals

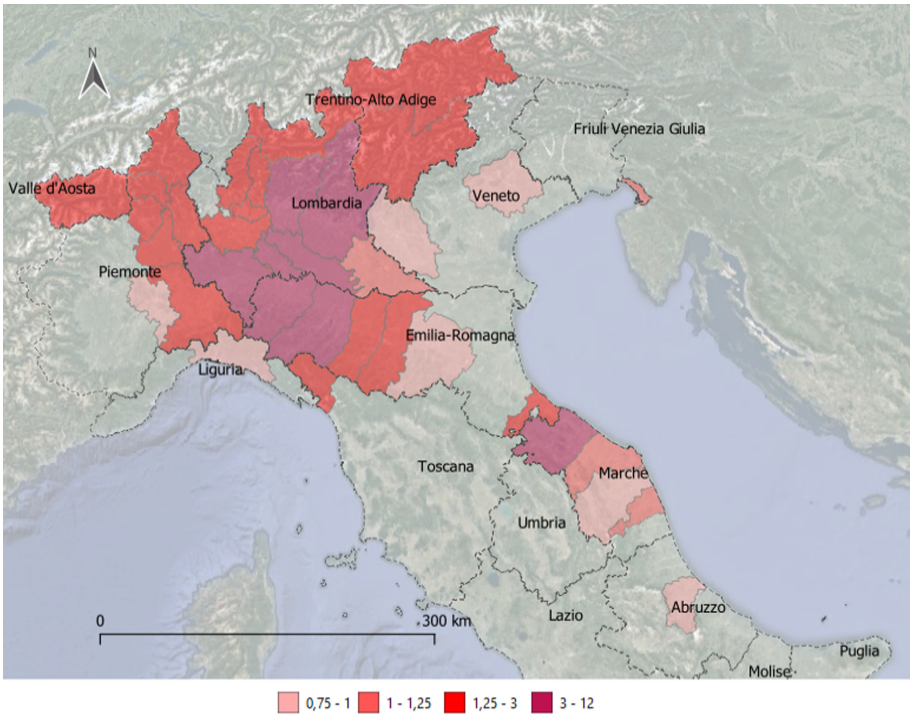

Fig. 1. Standardized CoViD-19 mortality (SMR) and administrative contexts of northern Italy.

that will be explained later are important. Referring to the extensive and in-depth works developed on the subject [15–19], we can recall some specificities that characterize this level of governance intermediate, especially from the metropolitan point of view, such as, in particular, the drafting of the Strategic Plan.

Figure 2 highlights the current supra-municipal (and sub-regional) administrative structure into which the Italian state is divided. We note the presence of metropolitan cities, the latest system resulting from the 'Del Rio' law (Law 56/2014), alongside the provinces, the autonomous provinces (Trento and Bolzano, equated in roles and functions to real regions with statute special), to the free consortia of municipalities (launched only in the case of the Sicily Region) and to units, in fact, purely statistical where these realities are, at the moment, no longer active.

These intermediate territorial administrative units have different characteristics and functions, and the focus is on the metropolitan cities established by national law (and by the autonomous regions). With Law 142/90 and up to the current legislative structure, these are configured as 'super provinces', whose spatial structuring is conforming to administrative aspects, rather than geographic-functional, characterized, however, by an important role of territorial planning.

The territorial extensions of the metropolitan cities - apart from the case of the metropolitan city of Cagliari, correspond to those of the previous provinces, not being connected to the concept of metropolitan area, whose conformation derives, instead,

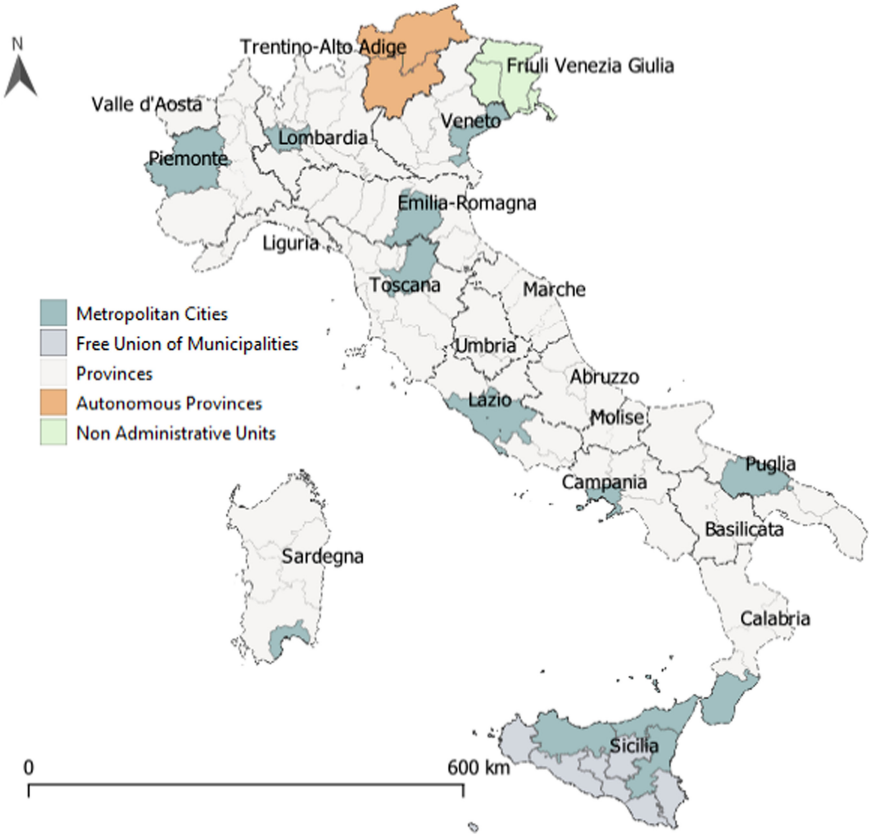

Fig. 2. Intermediate administrative units in Italy

from spatial interaction processes linked above all to mobility for reasons work and the presence of superior services in the central places of the same areas, with a range of action often more extended not only than the provincial, but also the regional delimitation.

The *Next Generation Italy* fits into this framework in response to delicate environmental issues and health protection.

Although the reform is not completed, this intermediate territorial dimension is also the most coherent also for the activation of governance policies in relation to the recent PNRR National Recovery and Resilience Plan (Next Generation Italy), which intends to link well-being, health, territory, environment and climate in the direction of greater sustainability, equity, inclusiveness and resilience.

The PNRR is also a Reform Plan, because the investment lines must be accompanied by the adoption of a set of reforms, as an 'enabling' element, in line with the European Commission's (Country Specific Recommendations. CSR) [20]. In addition, Italy also intends to accelerate the pursuit of the 17 Sustainable Development Goals (SDGs) signed by the UN Agenda 2030 with the related monitoring through the indicators of Wellness, Fair and Sustainable (Bes) already introduced in the economic-financial planning. There

is talk of three strategic axes: digitization and innovation, ecological transition and social inclusion which decline six missions, necessary to intercept the growth drivers of the next decade (Fig. 3).

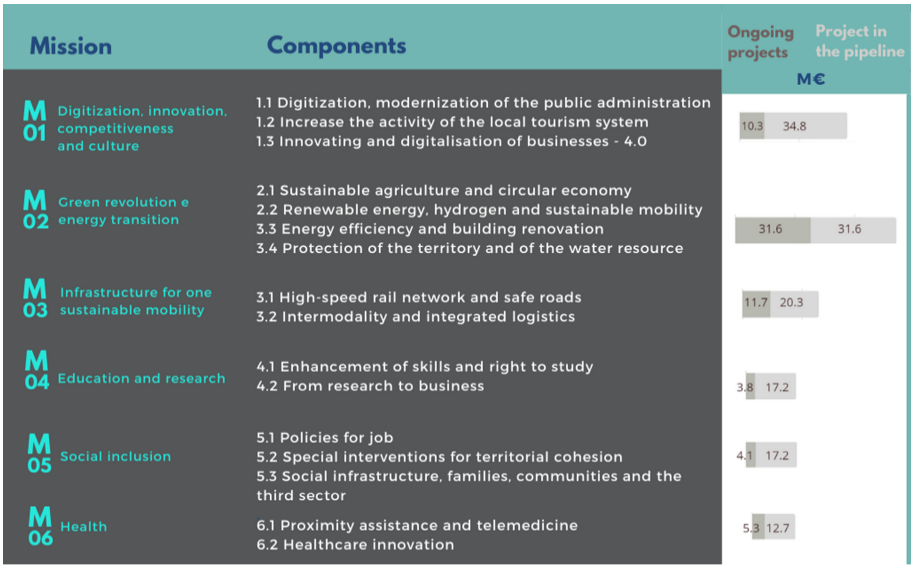

Fig. 3. Summary of the PNRR- National Recovery and Resilience Plan.

In this sense, the authors, agreeing how the disciplines relating to territorial analysis and planning can contribute to the development of new models of territorial governance and for the formulation of useful tools for decision-making in the direction of greater sustainability, equity, inclusiveness and resilience [21], believe that the six missions find the optimal city/land size in the intermediate dimension of the metropolitan city/province [22]. The strategic planning of metropolitan cities is in fact an indispensable process for addressing the progressive urban, environmental and social complexity (Fig. 4). The necessary ecological transition outlined in the PNRR requires, firstly, the drastic reduction of climate-altering gas emissions in line with the objectives of the Paris Agreement and the European Green Deal, secondly, urban regeneration [23–25] and the improvement of urban energy efficiency, the prevention and contrast to the instability of the territory also with actions to reverse the decline of biodiversity and the degradation of the territory [26–28] and an effective and integrated management of the waste cycle to enhance the circular economy [29], require a representative territorial dimension.

It is a multi-risk management that finds functional representativeness in the metropolitan dimension, both to more adequately recognize the interdependence between territories (clusters of municipalities), and to respond to the specific needs of the same territories, regardless of administrative borders, and finally, certainly not least, to make the distribution of investments more equitable [22].

In this context, the “Adoption and annual update of a three-year strategic plan for the metropolitan area, which constitutes an act of guidance for the body and for the

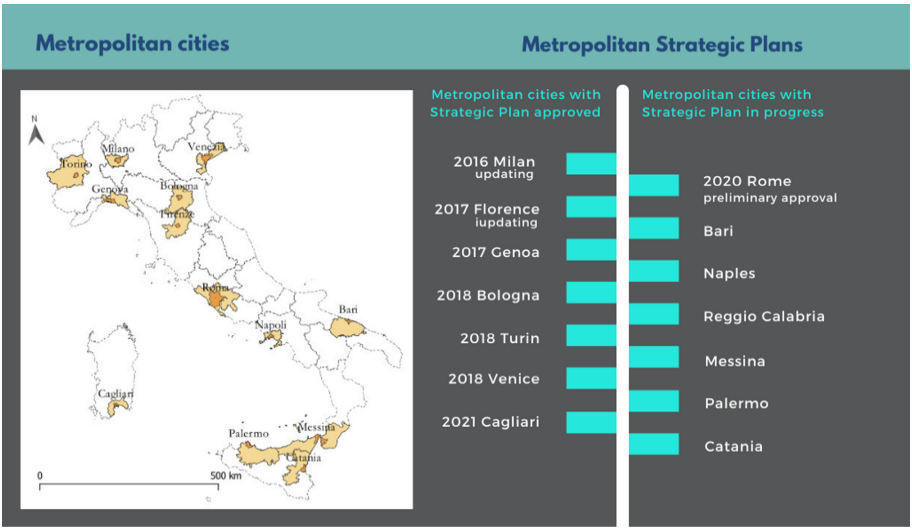

Fig. 4. State of metropolitan strategic planning in Italy

exercise of the functions of the municipalities and unions of municipalities included in the aforementioned territory, also in relation to the exercise of functions delegated or assigned by the regions, in compliance with the laws of the regions in the matters of their competence "(Law no. 56/2014 art. 1, c. 44, lett. a) the pandemic must be added, to which we intend to respond through the PNRR.

4 Methods

The health crisis invites us to reflect on the territorial dimension and on new and possible development models, not only based on financial and productive balance, but also on collective and individual well-being, health, respect for the natural environment, cooperation and solidarity, social belonging and community, just to name the most important.

The emergency experience confirms how the fundamental components of well-being, if neglected, increase the fragility of the social and economic system. In other words, the capacity of urban communities and the support of institutions must be aligned to ensure real change. In this sense, a methodology is proposed to define an operational theoretical-practical progress to support governance in the construction-revision phase of the Strategic Planning of metropolitan cities / provinces in response to multi-risk phenomena between environment, climate and health, both to define actions of prevention and both to facilitate a harmonious recovery. It is believed that by focusing on Strategic Planning, by aggregating university institutions, companies, and with civil society organizations [22, 23], it is possible to link forces coming from below by integrating them with the recent PNRR. The Strategic Plan is configured as a guiding tool for territorial planning, as well as the main planning act for the economic, social and environmental development of the metropolitan area: it defines the general, sectoral and transversal

development objectives for the metropolitan area identifying priorities for intervention, in compliance with the principles of environmental sustainability.

Due to its characteristics, it also supports the formulation of the Single Programming Document - Documento Unico di Programmazione - DUP (for the Strategic and Operational part) for each of the individual municipalities of the cluster (from Article n. 151 of Legislative Decree No. 267/2000 - Testo Unico sugli Enti Locali), guaranteeing the principle of coordination and coherence of the budget documents [31], which constitutes the necessary prerequisite for all other local level planning documents (Fig. 5).

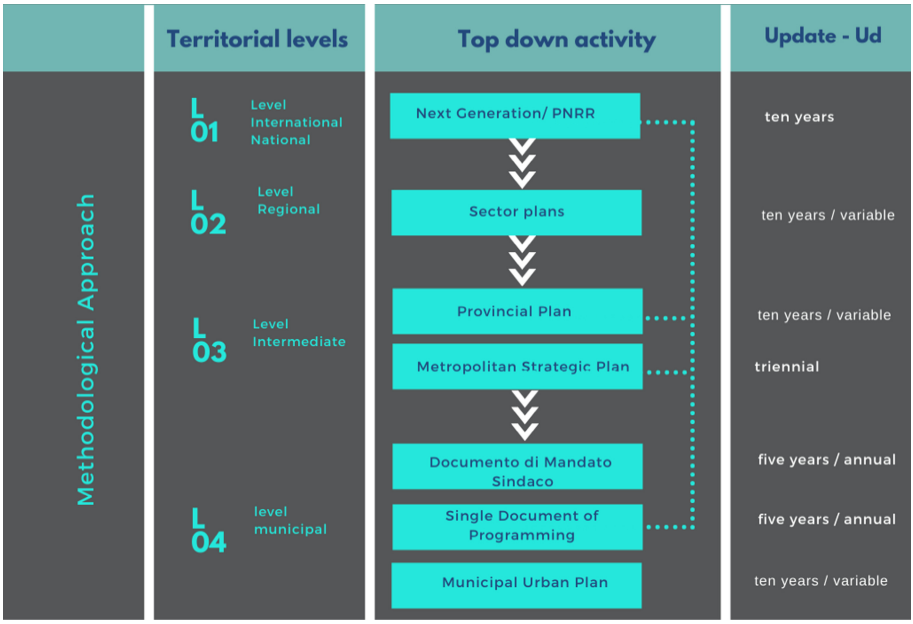

Fig. 5. Framework of methodological approach

The proposed methodology responds to stability needs, associated with the uncertainty of regulatory scenarios, often contradictory, which impose predetermined rules of conduct capable of responding in time to collective needs also in relation to the recent health crisis through the political program of the mayors.

The DUP constitutes the link between the objectives of the political program and the accounting documents of the budget and the executive management plan, with the desire to build a constantly updated and updatable management system, also due to the environmental-health crisis.

In fact, the goal is to always guarantee real-time programming (essential in the emergency phases and transition to normality) and its necessary management control.

The DUP therefore allows the strategic and operational guidance of the planning of the municipalities, for the implementation of the political program and to locally transfer the actions of Strategic Planning. In this sense, Strategic Planning is understood as the

result of interactions between institutions both to prevent and to govern multi-risks, recovery and resilience.

Finally, this proposed method finds concreteness also due to the recent formulation of the Council of State (Second Section, sentence no. 6263 of 15 October 2020) which interprets as: "the system of urban territorial planning subsequent to the constitutional reform of 2001 less 'hierarchical' and more harmonious vision. Supra-municipal planning is characterized by a 'mixed' nature and flexibility in relations with the instruments below. Municipal planning presents an articulation in acts, distinct between the structural and operational profile, aimed at a general planning that has as its objective the socio-economic development of the entire context".

5 Discussion and Conclusions

In Italy, in the last twenty years there has been little attention to planning with strong resistance in applying strategic approaches in governance models [22, 31, 32].

Often the role of the strategic plan has been connected to the concept of a structural plan, but in most experiences the latter was lacking in strategy, lacking reflections on economic, social and political factors that, in fact, affect its implementation [23, 27].

A performing Strategic Plan should take into account the structural characteristics and to make good structural plans it is equally essential to include strategic elements [24, 28, 33–35].

The word 'strategic' is unanimously used as an adjective that qualifies the choices of the plan, underlining the importance of the repercussions in a structured framework of objectives [26, 37].

From this point of view, the definition of an organized system of objectives that gives meaning to all the systems of actions (strategies) to which one intends to think becomes central [38]. The strategic concept consists, in fact, precisely in the care for the reorganization of the system of objectives and for the careful research of the evaluation of the correspondence between investments and results. It is a concept that, although apparently elementary, is often lost when it is considered important to create a work that has not been preceded by adequate reflection on the reasons that made it necessary, without being able to evaluate other alternative solutions [39].

In this sense, it becomes essential to compare the National Recovery and Resilience Plan (PNRR) and the Next Generation Italy with all the components of the territory, infrastructures, physical, social and economic space, activities and organizations, analyzing both strategic and structural aspects. Not considering these aspects would lead the PNRR to be a single list of interventions disconnected from each other, because they are not connected to the geographical-territorial contexts.

In fact, although the health emergency was governed in the absence of geographical-territorial references, it highlighted several and interesting issues. It was possible to observe the national territory differently than before, with a clear separation between north, center and south for once not dependent on the polarization dynamics of economic development. The fragility of the industrious North, air pollution in areas with greater industrial development and the spread of the virus, spatial distribution of health services, infrastructural connections, were some of the main aspects neglected during

the emergency. The complexity of the situation has resulted in a dimensionless approach that must necessarily be eliminated as soon as possible, also to formulate a concrete multi-risk and recovery management [22, 40].

References

1. Protezione Civile Nazionale, Il rischio sanitario. http://www.protezionecivile.gov.it/attivita-rischi/rischio-sanitario. Accessed 03 Feb 2021
2. Murgante, B., Balletto, G., Borruso, G., Las Casas, G., Castiglia, P., Dettori, M.: Geographical analyses of CoViD-19 's spreading contagion in the challenge of global health risks. TeMA (Special Issue), 283–304 (2020)
3. De Lotto, R., et al.: Exposure and risk reduction strategy: the role of functional change. In: Margani, G., et al. (eds.) Proceedings of the International Conference on Seismic and Energy Renovation for Sustainable Cities (SER4SC 2018), Catania, Italy, 1–3 Febbraio 2018, pp. 319–330 (2018)
4. Barton, H., Grant, M.: Urban planning for healthy cities. J. Urban Health **90**(1), 129–141 (2011). https://doi.org/10.1007/s11524-011-9649-3
5. Salmond, J.A., et al.: Health and climate related ecosystem services provided by street trees in the urban environment. Environ. Health **15**, 36 (2016). https://doi.org/10.1186/s12940-016-0103-6
6. La Torre, M., Semplici, L., Zapata, J.D.S.: Un Modello di Impact Finance per i Comuni: il Piano Strategico di Mandato BES-Oriented. In: Corporate Governance and Research & Development studies-Open Access, vol. 2, pp. 141–170 (2020)
7. Krasna, F., Borruso, G., Mauro, G., Zaccomer, G.P.: Green economy as a new pathway to development (and cohesion)? Place evidence analysis in the North-Eastern Italy: first findings of an ongoing research project. Bollettino della Società Geografica Italiana serie **14**(2), Special Issue, 143–153 (2019). https://doi.org/10.13128/bsgi.v2i3.820
8. Alves, L.A.: Healthy cities and smart cities: a comparative approach. Sociedade Natureza **31**, e47004 (2019)
9. Dettori, M., et al.: Air pollutants and risk of death due to COVID-19 in Italy. Environ. Res. **192**, 110459 (2021)
10. Murgante, B., Borruso, G., Balletto, G., Castiglia, P., Dettori, M.: Why Italy first? Health, geographical and planning aspects of the COVID-19 outbreak. Sustainability **12**, 5064 (2020)
11. Komendantova, N., Scolobig, A., Garcia-Aristizabal, A., Monfort, D., Fleming, K.: Multi-risk approach and urban resilience. Int. J. Disaster Resilience Built Environ. **7**, 114–132 (2016)
12. Zhao, L., et al.: Global multi-model projections of local urban climates. Nat. Clim. Change **11**, 152–157 (2021)
13. Fera, G., Lombardo, M.T.: La città metropolitana come opportunità per promuovere lo sviluppo integrato tra aree centrali e aree marginali: Il Caso di Studio di Reggio Calabria. LaborEst (20), 30–36 (2020). https://doi.org/10.19254/LaborEst.20.05
14. Borruso, G., Balletto, G., Murgante, B., Castiglia, P., Dettori, M.: CoViD-19. Diffusione spaziale e aspetti ambientali del caso italiano. Semestrale di studi e ricerche di geografia **32**(2), 39–56 (2020). https://doi.org/10.13133/1125-5218.17031
15. Gasparini, A.: Città metropolitana di Trieste, città metropolitana transfrontaliera di Trieste-Capodistria. Possibilità, probabilità, desiderabilità, Regione Autonoma Friuli Venezia Giulia – Relazioni Internazionali e Comunitarie. ISIG, Istituto di Sociologia Internazionale di Gorizia, Gorizia (2010)
16. Galluccio, F.: Una o divisibile? La questione regionale e il nodo del federalismo in Italia. Semestrale di Studi e Ricerche di Geografia **31**(2), 71–93 (2011)

17. AA. VV.: Il riordino territoriale dello Stato. Scenari italiani 2014. Rapporto annuale della Società Geografica Italiana Onlus, Roma, Società Geografica Italiana Onlus (2015)
18. Riboldazzi, R.: Local government innovation in Italy and its impact on urban and regional planning with a focus on the Milanese context. In: Nunes Silva, C., Buček, J. (eds.) Local Government and Urban Governance in Europe. TUBS, pp. 89–109. Springer, Cham (2017). https://doi.org/10.1007/978-3-319-43979-2_5
19. Dini, F., Zilli, S.: Introduzione. In: Cerutti, S., Tadini, M. Mosaico/Mosaic, Società di Studi Geografici. Memorie Geografiche NS 17, pp. 549–555 (2019)
20. Messori, M.: The 'Next Generation – EU' breakthrough: Opportunities and risks for Italy. SEP Policy Brief, June, n. 31; trad.it. 'La svolta 'Next Generation – EU': Opportunità e rischi per l'Italia' (2020)
21. Morri, R.: A question of geography literacy: geographical studies on Covid Sars 2 and lifelong education. J-READING **2**(9), 5–9 (2020). https://doi.org/10.4458/3617-01
22. Balletto, G., Mundula, L., Milesi, A., Ladu, M.: Cohesion policies in Italian metropolitan cities. Evaluation and challenges. In: Gervasi, O., et al. (eds.) ICCSA 2020. LNCS, vol. 12255, pp. 441–455. Springer, Cham (2020). https://doi.org/10.1007/978-3-030-58820-5_33
23. Ladu, M., Balletto, G., Milesi, A., Mundula, L., Borruso, G.: Public real estate assets and the metropolitan strategic plan in Italy. The two cases of Milan and Cagliari. In: Gervasi, O., et al. (eds.) ICCSA 2020. LNCS, vol. 12255, pp. 472–486. Springer, Cham (2020). https://doi.org/10.1007/978-3-030-58820-5_35
24. Balletto, G., Ladu, M., Milesi, A., Borruso, G.: A methodological approach on disused public properties in the 15-minute city perspective. Sustainability **13**(2), 593 (2021)
25. Balletto, G., Milesi, A., Fenu, N., Borruso, G., Mundula, L.: Military training areas as semicommons: the territorial valorization of Quirra (Sardinia) from easements to ecosystem services. Sustainability **12**(2), 622 (2020)
26. Capotorti, G., et al.: More nature in the city. Plant Biosyst.-Int. J. Dealing Aspects Plant Biol. **154**(6), 1003–1006 (2020)
27. Palumbo, M., Mundula, L., Balletto, G., Bazzato, E., Marignani, M.: Environmental dimension into strategic planning. The case of metropolitan city of Cagliari. In: Gervasi, O., et al. (eds.) ICCSA 2020. LNCS, vol. 12255, pp. 456–471. Springer, Cham (2020). https://doi.org/10.1007/978-3-030-58820-5_34
28. Balletto, G., Milesi, A., Ladu, M., Borruso, G.: A dashboard for supporting slow tourism in green infrastructures. A methodological proposal in Sardinia (Italy). Sustainability **12**(9), 3579 (2020)
29. Balletto, G., Borruso, G., Mei, G.: Location theory and circular economy. Demolition, constructions and spatial organization of firms – an applied model to Sardinia Region. The case study of the New Cagliari Stadium. In: Misra, S., et al. (eds.) ICCSA 2019. LNCS, vol. 11621, pp. 535–550. Springer, Cham (2019). https://doi.org/10.1007/978-3-030-24302-9_38
30. Albrechts, L., Balducci, A., Hillier, J. (eds.): Situated Practices of Strategic Planning: An International Perspective. Routledge (2016). https://doi.org/10.4324/9781315679181
31. Balletto, G., Borruso, G., Donato, C.: City dashboards and the Achilles' heel of smart cities: putting governance in action and in space. In: Gervasi, O., et al. (eds.) ICCSA 2018. LNCS, vol. 10962, pp. 654–668. Springer, Cham (2018). https://doi.org/10.1007/978-3-319-95168-3_44
32. Moccia, F.D.: Resistenze alla pianificazione strategica: una analisi trans-culturale della ricezione ed uso della pianificazione strategica nella pianificazione integrata italiana. In Archibugi, F., Saturnino, A. (eds.) Pianificazione strategica e governabilità ambientale. Alinea editrice, Firenze (2004)
33. Archibugi, F.: La Città Ecologica Urbanistica e sostenibilità. Torino, Bollati Boringhieri (2002)

34. Mundula, L., Ladu, M., Balletto, G., Milesi, A.: Smart marinas. The case of metropolitan city of Cagliari. In: Gervasi, O., et al. (eds.) ICCSA 2020. LNCS, vol. 12255, pp. 51–66. Springer, Cham (2020). https://doi.org/10.1007/978-3-030-58820-5_5
35. Balletto, G., Borruso, G., Mei, G., Milesi, A.: Recycled aggregates in constructions. A case of circular economy in Sardinia (Italy). TeMA – J. Land Use Mobility Environ. **14**(1), 51–68 (2021). https://doi.org/10.6092/1970-9870/7354
36. Cicerchia, A.: Pianificazione Strategica e Ambiente: teorie, metodi, strumenti ed esperienze internazionali. Franco Angeli, Milano (2000)
37. Balletto, G., Mundula, L., Milesi, A., Ladu, M.: Ex post evaluation of cohesion policies in the strategic planning of Italian metropolitan cities: analysis for the development of new strategies. In: La Rosa, D., Privitera, R. (eds.) INPUT 2021. LNCE, vol. 146, pp. 329–337. Springer, Cham (2021). https://doi.org/10.1007/978-3-030-68824-0_36
38. Archibugi, F.: Introduzione alla pianificazione strategica in ambito pubblico. Alinea Editrice, Firenze (2005)
39. Las Casas, G., Murgante, B.: Il Documento preliminare al Piano strutturale della Provincia di Potenza: i termini di un approccio strategico». Archivio di studi urbani e regionali edizioni Franco Angeli Milano **37**, 199–211 (2006)
40. Marzocchi, W., Garcia-Aristizabal, A., Gasparini, P., Mastellone, M.L., Di Ruocco, A.: Basic principles of multi-risk assessment: a case study in Italy. Nat. Hazards **62**(2), 551–573 (2012)