Medium-sized cities, intermediate scales and planning. Potential processes and missing tools in Brescia *

Ciudades medias, escalas intermedias y planificación. Procesos potenciales e instrumentos ausentes en Brescia

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Abstract: The ongoing phase of transition, led by processes of globalization and world crisis, has been encouraging the demographic and economic re-centralization towards major and largest cities. This trend urges the analysis of socio-economic and spatial dynamics in medium-sized cities which are historically characterized by manufacturing and entrepreneurial culture. This is the case of Brescia (one of the urban hubs of the North Italy city-region), where a strategic agenda (up to now, missing) could foster the management of trans-scalar urban issues, as well as the development of multi-level governance and planning solutions.

Keywords: postmetropolis, medium-sized cities, economic transition and innovation, multi-level governance and planning.

Resumen: La fase de transición en curso, dirigida por procesos de globalización y crisis mundial, ha venido alentando la recentralización demográfica y económica hacia las ciudades más grandes e importantes. Esta tendencia urge a analizar la dinámica socioeconómica y espacial de las ciudades de tamaño medio que se caracterizan históricamente por su cultura manufacturera y empresarial. Este es el caso de Brescia (uno de los nodos urbanos de la ciudad-región del norte de Italia), donde un programa estratégico (hasta ahora inexistente) podría fomentar la gestión de los retos urbanos transescalares, así como el desarrollo de soluciones de gobernanza y planificación multinivel.

Against the backdrop of the ongoing post-Fordist and post-crisis transition (socio-economic, cultural, political), the regionalization of urban phenomena has been developed also in medium-sized cities. These cities represent one of the main components of the European urban framework, even though they have been increasingly penalized by recent processes of demographic and economic recentralization towards global and metropolitan cities. Accordingly, this paper aims at contributing to the cultural and scientific debate about the current demands of updating processes and tools of urban planning, by focusing on the specific case of Brescia. This is one of the urban nodes of the polycentric North Italy city-region, around which research activities have been conducted at the Politecnico di Milano, Dipartimento di Architettura e Studi Urbani (DAStU): (i) on the one hand, in order to understand which are the post-metropolitan features of a medium sized-city that is historically characterized by a deeply-rooted manufacturing and entrepreneurial culture; (ii) on the other hand, in order to experiment with the development of a multi-level and post-growth dependent strategic agenda, that could be able to by-pass the administrative borders of the municipal area; that is, to deal with the growing needs of governance and planning, which are expressed by a multi-scalar metropolitan area without an institutional representation.

1. THE PROBLEM SETTING: FRAMING THE URBAN ISSUES IN EUROPEAN MEDIUM-SIZED CITIES

The globalization and world crisis have been affecting cities, as they have been contributing to the exacerbation of multiple critical issues: the growth of social inequalities, the radicalization of environmental fragility and climate change, the spatial reorganization of economic activities and social practices, the decrease of financial resources, both public and private, thus demanding for a radical change in an urban planning and development model that has been mainly based on land and building consumptions (Secchi, 2013; Lanzani, 2015). The past intensive growth of the urban phenomena and dynamics gradually and contradictorily led to both the shrinkage of cities and their dilution at the regional level (Brenner, 2014). The urban voids, which have remained since the 1970s and 1980s phase of deindustrialization, have been added by other brownfields and vacant spaces, thus demanding for new approaches, methods and solutions (Gabellini, 2013; Bianchetti, 2019). For instance, this large amount of spatial resources, that spreads beyond the administrative borders of cities and is difficult to re-use, claims a post-metropolitan and post-growth

update of urban planning processes and tools, and related levels (Soja, 2000, 2011; Rydin, 2013).

After past processes of residential and productive decentralization, the ongoing post-Fordist and post-crisis transition has been penalizing processes of spatial and socio-economic redistribution. Specifically, it has been both encouraging processes of recentralization towards major and largest cities (Perulli, 2017), and increasing their internal disparities (Cucca & Ranci, 2016; Knieling & Othengrafen, 2016). The current transition risks to penalize those areas which are placed outside the main city-regions, as well as in-between their main urban cores. This is a problem not only for inner areas (i.e., small towns, agricultural areas), but also for a large number of medium-sized cities. According to the definition promoted by the OECD and the European Commission, this is a constellation of cities, whose urban centre is between 100,000 and 250,000 inhabitants (Dijkstra & Poelman, 2012). Furthermore, this is a constellation of cities, which historically represent a fundamental and independent component of the European urban framework (Bagnasco & Le Galès, 2000; Le Galès, 2003), and which recently have not been spared by regionalization processes of urban phenomena and dynamics. However, this is an articulated system of cities, which now risk to lose permanently their cultural, political, socio-economic and spatial relevance to their multi-scalar surroundings areas, and to be excluded from or subordinated to global city trends and agendas (Giffinger et al., 2007).

Within the decline of manufacturing cities and regions, and the growth of knowledge-based city-regions (Scott, 2001, 2008; Hall & Pain, 2006), the current processes of re-urbanization risk to increase the cultural, political, socio-economic and spatial divides: for instance, between the densification of polycentric city-regions and the rest (at wider scale) (Haas & Westlund, 2017), as well as between the densification of the main urban cores of these polycentric city-regions and their in-between post-metropolitan spaces (at smaller scale) (Dierwechter & Herrschel, 2018). Similarly, the endless development of new infrastructures risks to paradoxically increase the urban and regional divides between main transport nodes and less accessible places: for instance, it drives the enlargement of city-regions and the upgrade of world networks among city-regions, but it also leads to the downgrade of local connections to all those minor places (internal or external to city-regions), which are not endowed with adequate infrastructure nodes (Taylor, 2004; Haas & Westlund, 2017).

On this background, one of the priorities for European medium-sized cities could be the development of multi-level and post-growth dependent strategic agendas: (i) on the one hand, in order to challenge the frequent inertia of contemporary urban policy and planning (Calafati, 2014; Vitali, 2014); (ii) on the other hand, in order to promote the repositioning of medium-sized cities in relation to both global networks and local networks. Going beyond the

weaknesses of traditional strategic planning (Balducci, Fedeli & Pasqui, 2011), and without taking for granted the potential outcomes of this new strategic approach to urban issues, this multi-level strategic agenda could be inspiring for the development of processes and tools of urban planning. In the Italian national context, where the case study of Brescia is located, this chance for medium-sized cities to deal with increasingly trans-scalar and cross-border urban phenomena and dynamics is a relevant challenge and goal, as they are still missing of an appropriate institutional representation[1].

2. THE MULTI-SCALAR GEOGRAPHIES OF BRESCIA: AN INCOMPLETE TRANSITION

The medium-sized city of Brescia is one of the urban nodes of the polycentric North Italy city-region, as it is located along the infrastructure corridor between Turin and Trieste, through which the Po Valley megalopolis has partially developed (Turri, 2000; Perulli, 2017). Specifically, the municipal area of Brescia (about 90 km^2 and 200,000 inhabitants) is situated in a not institutionalized metropolitan area, that extends from the city and its surrounding municipalities (about 300 km^2 and 350,000 inhabitants) to the sector of the pre-Alps linear city included in its provincial borders (more than 1,400 km^2 and 900,000 inhabitants on the total amount of around 4,800 km^2 and 1,300,000 inhabitants of the provincial area)[2]. This multi-scalar metropolitan area is located in the middle of a wide territorial context that is historically characterized by (Caroli, 2015):

- Strong productive specialization (for example, in the mechanical, metallurgical, textile, automotive, rubber and plastic, agri-food and electronic sectors), both in the urban core and in the industrial districts of the surrounding valleys, even though this vocation is mainly represented and interpreted by small and medium-sized enterprises with usually low capacity of innovation (for instance, towards the knowledge, creative and cultural capitalism, the digital manufacturing and the green economy).
- Geographical proximity to heavily industrialized agricultural areas (that is, the irrigated plain between the Oglio and Chiese rivers), landscape-environmental and tourist heritage (that is, the Lakes Garda, Idro and Iseo) and connected eno-gastronomic districts (that is, Franciacorta, Valtenesi and Colline Moreniche del Garda).

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[1] Up to now, the last reform of local authorities (that is, the National Act 56/2014) established the new Metropolitan City authorities only in the case of biggest cities (with the exception of Reggio Calabria).

[2] Source: https://cityrailways.com/citta-ditalia-2020/ (accessed: 01-03-2020).

Whilst, during the Twentieth Century, the urban development was mainly driven by the manufacturing sector, since the 1970s several industrial plants have closed (for instance, metallurgical factories as Europa Metalli; steel factories as Atb and Bisider; mechanical factories as Baribbi and Orlandi; agri-food factories as Whurer). Large brownfields have added to barracks, railway yards and logistic yards, which were no longer used. Therefore, all these abandoned areas were included in large urban redevelopment projects, which were planned by the 1999 and 2004 editions of the *Piano Regolatore Generale* (PRG[3]) in order to redesign the functional, morphological and typological features of entire city blocks and sectors, and to increase levels of urban quality.

Despite the de-industrialization process, in 2011 the workers in the manufacturing sector still represented the 15.7% of the active population that was registered in the municipal area[4]. Furthermore, according to its geographical location, the city confirms its role as urban hub of a provincial area that is featured by a strong productive vocation: that is, a provincial area that, in 2016, was third in Europe for what concerns the number of workers in the manufacturing sector (156,000) and the industrial added value (10 billion euros)[5]. Nevertheless, as in other European cities, even in the urban core of Brescia the issue of the post-Fordist transition (along with that of the urban redevelopment) has been included in the local political agenda since the 1980s. In particular, this issue has become more and more crucial since the 1999 adoption of the PRG, which was directed by Bernardo Secchi and characterized by a unprecedented multi-level analysis of the city and its territorial context, but approved in new version by the Municipality in 2004 only.

Against the backdrop of the image of "fractal city" (Figure 1), that Bernardo Secchi attributed to Brescia (Studio Brescia PRG, 1998), this general urban plan aimed to redesign the existing city to drive its post-Fordist transition. It provided an articulated system of goals and actions, which have tried to deal with a typically low-density urban fabric (Matteotti & Tedeschi, 2003):

- The preservation and enhancement of the environmental and landscape system, from extensive areas with high natural value (e.g., the Parco delle Colline, the Parco del Mella, the Parco delle Cave, the Parco di San Polo) to compact ones with high social value (e.g., the Castle and other urban parks).

- The urban regeneration of the historic centre (e.g., the Carmine neighbourhood), as well as peripheral districts and main road axes.

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[3] According to the Italian National Government's Urban Planning Act (1150/1942), at the municipal level the general urban planning tool is the *Piano Regolatore Generale* (PRG).

[4] Source: "Atlante dei Territori Post-Metropolitani": http://www.postmetropoli.it/atlante/ (accessed: 01-03-2020).

[5] Source: Associazione Industriale Bresciana: http://www.aib.bs.it (accessed: 01-03-2020).

- The redevelopment of large and no longer used areas (e.g., Borgo Whurer, Canton Mombello, Comparto Milano) and the reconfiguration of entire city sectors (e.g., Brescia Due, San Polo).
- The environmental and landscape mitigation of main industrial plants which, up to now, have survived the recent deindustrialization process (e.g., the Alfa Acciai and Ori Martin steelworks, the Lonati mechatronics).
- The development of large urban facilities (e.g., the university campuses, the exhibition centre) and new social housing neighbourhoods (e.g., Sanpolino, South Violino).
- Lastly, the sustainable improvement of the urban mobility (e.g., through the completion of the public parking system, the development of the cycle network, the construction of a sort of bus rapid transit network and, above all, an automatic light rail line).

Figure 1: The "fractal city" of Brescia and its multi-scalar metropolitan area.
Source: Studio Brescia PRG, 1998: 28.

Similarly to other Italian and European cities, the large urban change process and projects, which were promoted and partially implemented in the 2000s, corresponded to a phase of real estate development. Contextually to a spontaneous and supra-local deindustrialization process and through the support

of the local 2004 PRG, also in Brescia this was a phase in which the urban development coincided with an intensive (and sometimes extensive) urban transformation, that was mainly led by the real estate sector. On the one hand, the strategies and actions of the 2004 PRG contributed to the increase of the urban quality. On the other hand, the ending or relocation of several productive activities and the closure of multiple industrial sites were addressed by the 2004 PRG through the promotion and implementation of large but repetitive urban redevelopment projects. These projects were usually featured by similar functional mix of dwelling, retailing and offices: it means that they were rarely combined with the development of high added-value urban functions, potentially able to stimulate an effective and powerful socio-economic renewal of the city. Accordingly, whilst many of these planned (and often oversized) projects have not been implemented during and after the outbreak of the 2008 global crisis, they have contributed to (Di Vita, 2014):

- The impoverishment of the urban identity, which was traditionally connected to industrial production.
- The low-profile configuration of the urban metamorphosis towards the service sector, that has been mostly characterized by the oversized development of shopping centres and offices, and the strengthening of mainly local public services.

The loss of several and historical manufacturing activities has not been replaced by new attractive functions in the service sector, whose lack has negatively affected the role that the city of Brescia played within its multi-scalar territorial context (from metropolitan, provincial and regional, to macro-regional, national and European). For instance, despite the excellent hospital facilities which are placed in the municipal area, the local university system, that has gradually expanded since 1965 (with the opening of the Università Cattolica campus) and 1982 (with the establishment of the Università degli Studi) is still characterized by a modest ranking. At the same time, the 1990s and 2000s attempts to launch the cultural tourism through the organization of successful exhibitions in local museums (in particular, in the Museo di Santa Giulia) rapidly declined[6]. Therefore, it has become more and more crucial to question the local effects of the world growth-dependence and crisis through the development and implementation of urban policies, plans and projects within an unprecedented urban vision. Specifically, after being the third Italian industrial city, a medium-sized city as Brescia needs to clearly redefine its development goals in relation to both:

- A macro-regional, national and European territorial framework that has radically changed from the socio-economic and political points of view;

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[6] These exhibitions were promoted on behalf of the municipal administration by the Association Brescia Mostre (from 1996 to 2004) and the private company Linea d'Ombra (from 2004 to 2009).

- A metropolitan, provincial and regional area that is still able to confirm its top-ranking location within the national and European territorial contexts for what concerns manufacturing production and economic activities in general.

Despite the above-mentioned economic strengths of its provincial area, the urban core of Brescia has been struggling for at least two decades in order to carve out its own visibility between the neighbouring similar-sized cities of Bergamo and Verona, which are respectively located to the West and to the East along the macro-regional infrastructure corridor and linear city between Turin and Trieste. This weakness has been connected to a deep cultural displacement of the urban elites and the depletion of some local excellent functions: for instance, utilities (according to the merger of AEM Milano, AMSA Milano and ASM Brescia into A2A group, based in Milan), fairs (referring to the two-years closure of the local exhibition centre), airports (losing the competition with Bergamo Orio al Serio and Verona Villafranca), banks (according to the merger of the Banco di Brescia in the UBI banking group, based in Bergamo). During its post-Fordist transition, Brescia was missing a strategic agenda that could have been able to reconfigure the role of the urban core in its territorial contexts at both the local levels (e.g., metropolitan, provincial and regional) and supra-local levels (e.g., macro-regional, national and European) (Bonomi, 2013; Caroli, 2015).

The 2008 global crisis has been adding new (small and large) abandoned buildings and areas to those which were inherited by the first de-industrialization phase (in 1980s and 1990s): from former factories (e.g., the Ideal Standard, Idra, Pietra), to obsolete collective facilities (e.g., old hospitals or cinemas). At the same time, as in other Italian and European cities, the 2008 crisis has negatively affected the implementation of the municipal 2004 PRG, whose several redevelopment projects were not concluded or neither started (Di Vita, 2014).

3.   THE CURRENT URBAN POLICIES AND PLANS IN BRESCIA: THE IMPLICIT OPPORTUNITIES FOR A "MEDIUM-SIZED POSTMETROPOLIS"

The contemporary and sharp slowdown of the real estate market cannot be ignored[7]. This trend represents the end of a cycle, and it demands for new planning approaches and solutions: not only at the national and international level (Lanzani & Pasqui, 2011; Rydin, 2013), but also at the local level. After the longstanding speculation on tertiarization processes of cities, which have been frequently supported by urban policies and plans (even to sustain the functioning of local administrations), also the case of Brescia highlights the

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[7] The transactions of dwellings decreased in Brescia by 43.8% from 2006 to 2014. Source: Osservatorio del Mercato Immobiliare: http://www.agenziaentrate.gov.it (accessed: 01-03-2020).

growing needs for new methods, levels and contents in urban planning processes and tools.

In contradiction to these demands, the general urban plan for Brescia, that was approved by the Municipality in 2012 (the so-called *Piano di Governo del Territorio*, PGT[8]), confirmed the large real estate redevelopment projects, which were previously planned, but have not been implemented yet. Furthermore, the 2012 PGT increased the local building capacity with the aim of favouring the real estate market. This choice ignored both the post-crisis socio-economic and political conditions, which have radically changed at the international level, and the socio-economic and spatial conflicts between existing and new territorial centralities, which have been recently implemented at the local level, according to oversized urban plans (Di Vita & Pasqui, 2015). For example, this is the case of the growing conflicts between the retail system of the urban core's historic centre, that has been suffering despite the enlargement of pedestrian areas and the increase of nightlife activities, and the development of shopping centres in the metropolitan and provincial areas (both, in brownfields and greenfields), that has been leading to first local problems of demalling (Cavoto, 2014). In general terms, this is also due to the recurrent functional mix that the 2004 and 2012 urban plans allocated to large transformation areas, without added value in terms of diversification and renewal of the urban economy, society and space.

The 2012 PGT neglected the end of the previous expansionary cycle of the real estate sector, also because of the tendency of the political debate to mainly focus on single projects and sectoral issues, in a longstanding lack of (really and explicitly) strategic visions for the urban development. In order to ideologically reduce the land take[9], the new PGT (that was approved in 2016 by the current city administration, Figures 2 and 3) has introduced an appreciable downsizing of the previous plan. Nevertheless, several transformation areas have been confirmed, even though their implementation has not started for years. Furthermore, the new urban plan has not focused on the necessary repositioning of the city, even according to the industrial past of the urban core and the productive vocation of the multi-scalar territorial context in which Brescia is located (Caroli, 2015; Treu, 2015). On the background of ongoing phenomena of both urban shrinkage and dilution, the new urban plan aims to support the preservation of industrial areas, which have survived the post-Fordist real estate development. However, this goal has not been supported yet by an organic system of connected public policies and planning mechanisms, so that it risks being not incisive, within the current market conditions.

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[8] According to the Lombardy Regional Government's Urban Planning Act (12/2005), at the municipal level the general urban planning tool is now the *Piano di Governo del Territorio* (PGT).

[9] According to the definition by the European Environment Agency: https://www.eea.europa.eu/data-and-maps/indicators/land-take-3/assessment (accessed: 01-03-2020).
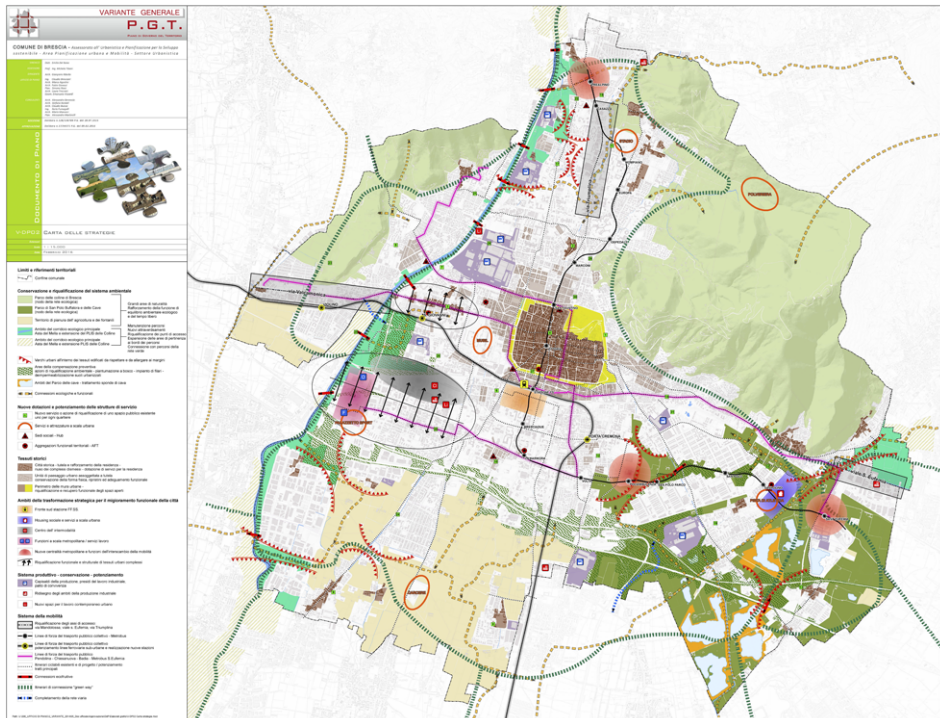
Figure 2: The PGT approved by the Municipality of Brescia in 2016. The Strategic Framework.
Source: http://www.comune.brescia.it/servizi/urbanistica/PGT/Pagine/Variante%202015-PGT-
approvato.aspx (accessed: 01-03-2020).

According to these exemplifying criticalities, the current 2016 PGT has not promoted an explicit vision for the future of the urban core. At the same time, whilst it has ideologically focused on contemporary urban issues (e.g., the preservation and enhancement of greenfields, as well as productive activities or sites), it has not been able to foster their implementation.

An implicit vision for the future of Brescia has been developed by one of the most important multi-utilities in Italy such as A2A, that was founded in 2008 by the former AEM Milano, AMSA Milano and ASM Brescia and that operates in multiple sectors (e.g., energy and technological networks; urban waste and environment; urban heating and cooling). Since 1970s this company has been investing in the development of an integrated management system of the urban waste disposal, the industrial energy recovery, and the urban energy, heating and cooling production. Moreover, since 2018 A2A has been promoting a huge smart city project in collaboration with the Municipality of Brescia, that aims at the development of the optic fibre network. Whilst these projects lead the urban core of Brescia to achieve European standards and become an Italian best practice, they could support the development of those new and innovative

productive activities through which the 2016 PGT aim to reuse longstanding brownfields and preserve existing industrial sites.
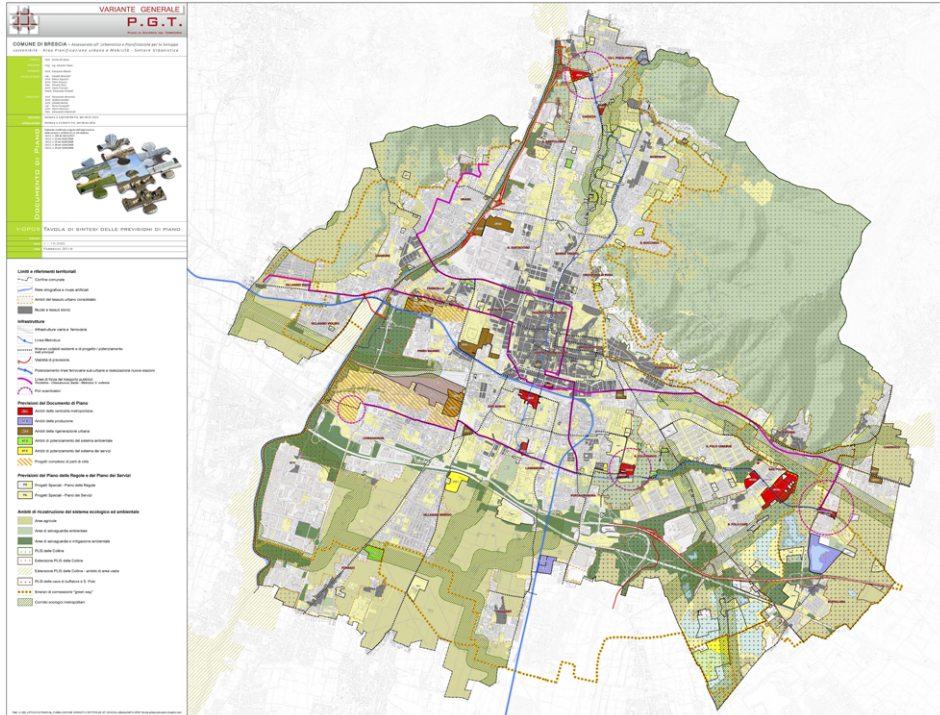

Figure 3: The PGT approved by the Municipality of Brescia in 2016. The General Masterplan. Source: http://www.comune.brescia.it/servizi/urbanistica/PGT/Pagine/Variante%202015-PGT-approvato.aspx (accessed: 01-03-2020).

A more explicit vision for the future of Brescia has been recently promoted by the *Piano Urbano per la Mobilità Sostenibile* (PUMS), that was approved by the Municipality in 2018. The new mobility plan refers to longstanding projects for the development of the macro-regional and local railway systems (e.g., the completion of the Milan-Venice high-speed train and the development of a suburban railway network) when it proposes the construction of a new urban tramway network to integrate the recent automatic light rail (Figures 4 and 5). Whilst this public transport extension mainly focuses on the urban core, rather than on the rest of its multi-scalar territorial context, this is an ambitious proposal for a medium-sized city that, consequently, could become an international best practice for the urban sustainability. At the same time, this could provide a reference to the urban plan for the selection of project goals, actions and related sites.
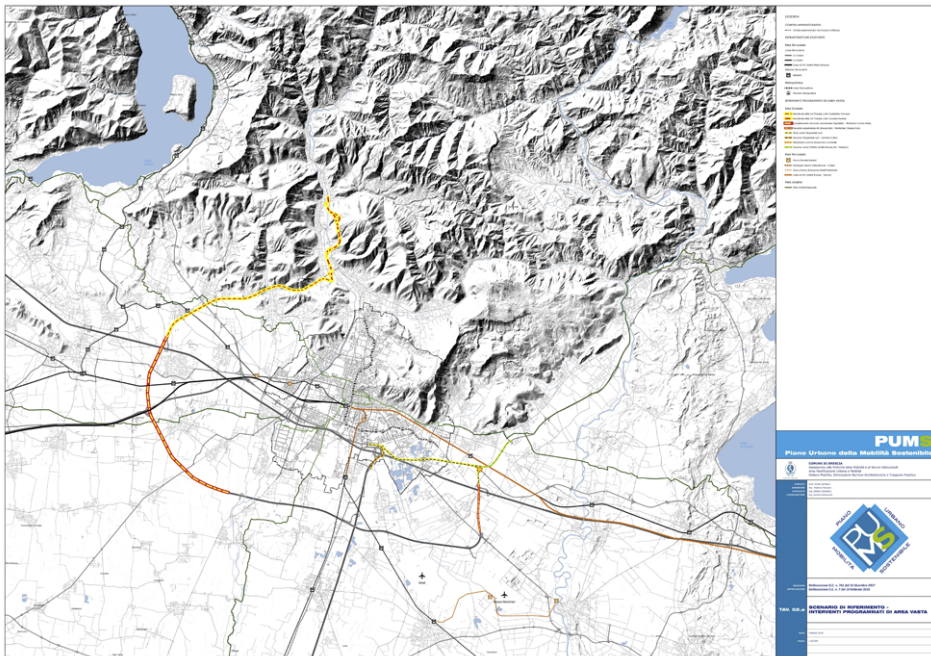
Figure 4: The PUMS approved by the Municipality of Brescia in 2018. The Territorial Scenario.
Source:http://www.comune.brescia.it/servizi/mobilitaetraffico/settMob/docPianificazione/pums/P
agine/Approvazione.aspx (accessed: 01-03-2020).

The recent investments in transport infrastructures in and to Brescia (e.g.,
the automatic light rail line in the urban core, operational since 2012; the new
direct motorway and high-speed train line to Milan, operational since 2015; the
new high-speed train line to Verona and Venice, under construction) have
already changed the trans-scalar territorial relationships, which are both internal
and external to the city, and they could further drive the development and
implementation of an unprecedented multi-level vision.

Also according to this specific issue, the case of Brescia highlights the
growing needs for new methods, levels and contents in urban planning
processes and tools: for instance, by introducing a pro-active and
entrepreneurial approach to urban planning, and not only regulatory. In order to
avoid the multiple contradictions which have characterized the (post-Fordist and
post-crisis) incomplete transition of the city[10], a long-term and multi-level
strategic agenda should be developed (really and explicitly) in relation to (Treu,
2015; Di Marino & Di Vita, 2019):

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[10] This definition is directly inspired by another research, that was developed at the Politecnico di
Milano, Dipartimento di Architettura e Studi Urbani (DAStU) on the case of Milan (Bolocan Goldstein
& Bonfantini, 2007).

- not only the potentialities and criticalities of the multi-scalar metropolitan area of Brescia in the poly-centric city-region of North-Italy;
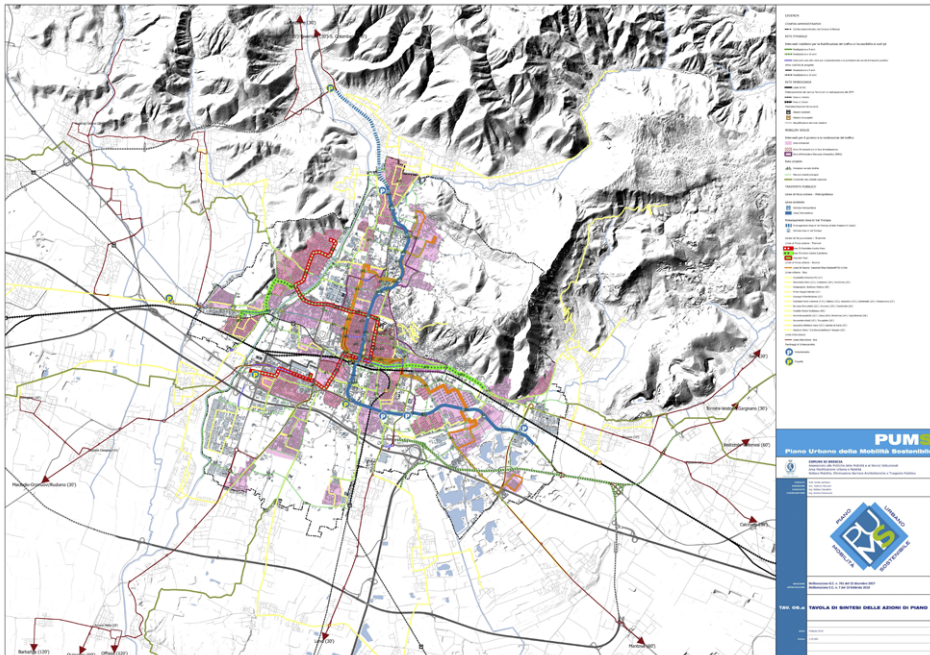- but also the socio-economic and spatial dynamics of global networks.

Figure 5: The PUMS approved by the Municipality of Brescia in 2018. The General Masterplan. Source:http://www.comune.brescia.it/servizi/mobilitaetraffico/settMob/docPianificazione/pums/Pagine/Approvazione.aspx (accessed: 01-03-2020).

4. FROM ANALYSES TO PRACTICES IN THE CASE OF BRESCIA: THE DEVELOPMENT OF A TRANS-SCALAR APPROACH TO THE URBAN PLANNING

The analysis of contemporary urban change processes in a European medium-sized city as Brescia, that is placed in a productive metropolitan and city-regional area, highlights no-longer postponing needs for local authorities to take a more active role in planning and managing urban dynamics. Whilst, according to a consolidated framework, the recent urban plans have mainly focused on the ordinary planning and management of the city, the current transition demands for an experimentation with new approaches and solutions. In order to encourage and implement an innovation in the development model of the past decades, local authorities should become active promoters of an

articulated system of urban resources (Albrechts, 2003; Balducci & Mäntysalo, 2013). It means to go beyond the mere administration of the city, that has more and more often encouraged and relied to the only exploitation of the land rents.

Against this backdrop, the research of the Politecnico di Milano, Dipartimento di Architettura e Studi Urbani (DAStU) has tried to make a contribution to the collective construction of a multi-level strategic agenda that includes potential issues and priorities for the regeneration of Brescia and its repositioning at different scales (e.g., metropolitan, provincial, regional, macro-regional, national, European). Accordingly, the research has promoted the development of a process that takes into account the needs of different stakeholders (e.g., political-institutional, economic, social, cultural), the lack of resources, and the obsolescence and rigidity of administrative boundaries, in comparison with the current complexity of territorial dynamics (e.g., settlements, infrastructures, environment, economy, society). This vision aims to rely on a shared, selective and trans-scalar approach, as well as a wider awareness of local potentialities, such as the consolidated excellences to strengthen, or the potential innovations to enhance. Specifically, it means to promote the excellent healthcare facilities, the university campuses and services, or the tourism resources, even according to the consolidation of their connections with:

- The extensive productive systems (e.g., manufacturing and agriculture) of the multi-scalar area in which the city is located;
- The new transport infrastructures (e.g., the municipal automatic light rail; the regional Brescia-Milan direct motorway, the macro-regional Milan-Venice high-speed railway) and digital infrastructures (e.g., the smart city projects), which have been radically changing the territorial connections of the city (internal and external).

Taking into account both the local specificities and global trends, the research has proposed to consider this multi-level strategic agenda as a shared representation of the multi-scalar Brescia in relation to both local and macro-regional systems. In particular, referring to specific issues, the research has suggested the development and implementation of inter-institutional cooperation in urban planning and management (for instance, in planning the urban change, or in managing the public services). Indeed, the shared identification and selection of strategic goals and actions at the inter-municipal scale could effectively improve the socio-economic dynamics and the spatial organization of the multi-scalar Brescia. At the same time, facing to the lack of a national legislative framework for medium-sized cities (Balducci, Fedeli & Curci, 2017), they could foster the experimental construction of a post-metropolitan governance that is flexible and variable-geometry, on the basis of specific policies, plans and projects.

The research has proposed this multi-level strategic agenda as a sort of interface between local networks and world networks in order to face to the crisis not only through defensive tools and mechanisms, but also through a pro-active approach to the socio-economic innovation and spatial reconfiguration:

- By exploiting the above-mentioned industrial vocation of the multi-scalar metropolitan area and the entrepreneurial dynamism of the urban core, which have survived to the crisis[11], through an ecological approach;
- By enhancing the networking relationships and potential synergies with other territorial systems of the polycentric Northern Italy city-region (both the Milan's global urban node and the macro-region's other medium-sized cities);

It means that this vision could increase the awareness about the resources of the city and enable the potentialities for its repositioning at multiple scales (Di Vita & Pasqui, 2015):

- The local dimension of the urban core that, since the late 1990s, has been involved in a large but incomplete process of socio-economic and spatial renewal;
- The complexity of the multi-scalar metropolitan area, that consists of the first and second belt's municipalities around the urban core, the linear city of the Val Trompia, and the urban sprawl of the Franciacorta and Basso Garda areas, and that has been affected by significant phenomena of territorial reorganization, also connected to the ongoing upgrading of transport infrastructures;
- The relationships with a wider area, that includes the pre-Alpine Camonica, Trompia and Sabbia valleys, and the provincial areas of Cremona and Mantua, and that is an integral part of the pre-Alpine linear city between Turin and Trieste and, in its turn, of the North-Italy city-region; that is, a post-metropolitan macro-region, that is also capable of intercepting the long networks of globalization.

According to this agenda, the role of a European medium-sized city as Brescia, that is placed in a productive metropolitan and city-regional area, could be redefined by referring to a wider and multi-scalar territorial and productive platform. This is a territorial and productive context that extends beyond the municipal, metropolitan and provincial areas of Brescia, and encompasses (at least) the entire pre-Alpine urban corridor in which the municipal, metropolitan and provincial areas of Brescia themselves are located.

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[11] For instance, inside the municipal area of Brescia, the 2011 index of economic dynamism, that represents the number of jobs in private sector companies in comparison with those in public ones, remained positive. Source: "Atlante dei Territori Post-Metropolitani": http://www.postmetropoli.it/atlante/ (accessed: 01-03-2020).

Such a multi-level scenario, that goes beyond the ordinary administrative borders and relies on the exploitation of multi-faceted resources, has never been promoted neither shared by local policy makers and stakeholders. On the contrary, the research has proposed to develop this multi-level strategic agenda through the involvement and coordination of a wide network of local and supra-local actors, which are providers of multi-disciplinary skills and knowledge, within an innovative, structured and permanent process. It could be an occasion to extend and consolidate the so-called Giunta dei Sindaci, that was established in 2013 by the Mayors of Brescia and 14 surroundings municipalities, even though it has not developed yet any real cooperation activities. In addition to territorial institutions (e.g., municipal administrations of the metropolitan area, provincial and regional governments, chambers of commerce) and to utilities and functional authorities (e.g., companies which operate public transport, public health, urban waste, urban heating and other technological networks), the research has proposed to invite to join such a process the traditional agencies of business and work systems (e.g., entrepreneur associations, trade unions), but also other actors, which are usually not constrained by ordinary regulations. This is the case of private companies, as well as bank foundations, other universities and research institutions, which operate in the city and its multi-scalar territorial context. This is also the case of cultural and social associations which, in Brescia, have centuries-old roots and traditions.

Through this process and shared dimension, the development of such a multi-level scenario could contribute (Di Vita, 2014; Di Vita & Pasqui, 2015):

- To expand the knowledge and consolidate the awareness of local and supra-local actors and stakeholders about the actual resources and potentialities which are available in the multi-scalar Brescia;
- To overcome the obsolete municipal borders of the urban core, and to extend to a multi-scalar territorial context whose dynamics (e.g., settlements, infrastructures, environment, landscape, economy, society) are now totally connected to those of the urban core itself, although in the overall lack of adequately cooperative policies and planning tools;
- To drive the implementation of its goals and actions; for instance, by selecting the priorities to carry out, also through the finding of available economic resources (public and private) against the backdrop of the ongoing weakening of investment capacity;
- Accordingly, to drive the future development of multi-level policies, plans and projects, which could articulate into efficacious, feasible and sustainable solutions;
- To foster the renovation of local elites and ruling classes, also in order to bring out new actors and projects for a multi-scalar Brescia that, at some extent, needs to be imagined, yet;

- To encourage the development of new relationships between the traditional productive activities (from manufacturing in local small and medium-sized enterprises, to agriculture), and the knowledge, creative and cultural capitalism of local and global networks (from knowledge workers, to finance, infrastructures, logistics, utilities), which might drive the urban change.

On the background of international case studies, which have been selected as best practices of trans-scalar urban regeneration processes (e.g., the IBAs Emscher Park in Germany and the Parkstad in The Netherlands), and a couple of seminars, which were organized at the Urban Centre of Brescia[12], the research has also tried to define specific goal and actions to further develop the multi-level strategic agenda for Brescia. Besides its proposals in terms of method and approach, the research has taken the recent and ongoing construction of the above-mentioned new transport infrastructures (at municipal, regional and macro-regional level) as premise and chance to start a shared development of the multi-level scenario in terms of contents.

The multi-level strategic agenda interprets and promotes Brescia as relevant urban node between the supra-local system that is made by the infrastructure corridor and linear city of the pre-Alps (West-East), and the local system that consists of the infrastructure corridor and linear city of the Val Trompia (North-South). Referring to the Internationale Bauausstellung (IBA) best practices, the multi-level scenario itself extents from this multi-scalar Brescia to the entire macro-regional infrastructure corridor between Milan and Verona (West-East)[13], and to the local infrastructure and ecological corridors which consists of historical railways and rivers (North-South) (Figure 6).

According to this framework, the research has selected the redevelopment of the trans-scalar relationships between (existing and future) transport infrastructures and places as the main goal, beginning with the re-connection between the macro-regional infrastructure corridor (East-West), the local infrastructure and ecological corridors (North-South), and the related urban nodes. Therefore, it has identified:

- A system of trans-scalar territorial components, which could be able to interpret the goal (for instance, the transport corridors and nodes, also in connection to the green networks and vacant spaces);

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[12] The two seminars (the first in January 2015 and the second in September 2016) were organized in collaboration with the Municipality of Brescia and the local section of the national trade union Confederazione Generale Italiana del Lavoro (CGIL), and they involved multiple local actors and stakeholders (e.g., members of local authorities, public utilities, private companies, foundations, associations, organizations and other universities).

[13] This corridor includes the section between Milan and Brescia, opened in 2015, and the section between Brescia and Verona, now under construction.

- A system of trans-scalar actions, which could be able to achieve the goal (for instance, the mitigation of infrastructure barriers; the strengthening of main city gates and minor infrastructure nodes; the completion of public transport and cycle corridors; the reconstruction of environment and landscape connections; the reclaim of polluted lands and water; the renewal and reuse of abandoned buildings and areas in order to enhance the architectural and urban heritage, to place new productions and high added-value functions, and to drive the spatial and socio-economic regeneration of the outskirts).
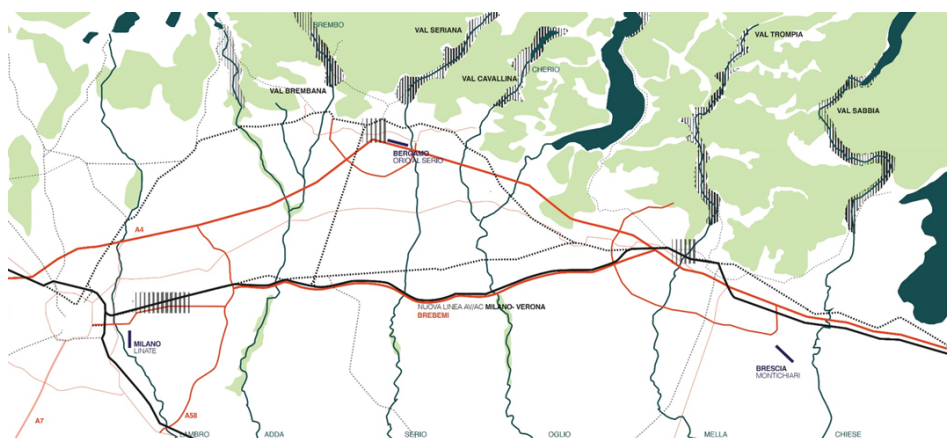

Figure 6: The multi-level strategic agenda for Brescia. The Territorial Scenario.
Source: Map elaborated by Fabrizia Berlingeri and Stefano Di Vita.

5. FURTHER RESEARCH BEYOND THE CASE OF BRESCIA: WHAT TO DO WITH URBAN PLANNING TOOLS?

On the background of the case study of a European medium-sized city as Brescia and its multi-scalar metropolitan area, the research of the Politecnico di Milano (DAStU) has led to multiple results.

First, the research shows potentialities of innovation in urban planning processes. The multi-level strategic agenda, that is described in the entire Paragraph 4, consists on goals and actions which have already consolidated in contemporary cities: for instance, the reconnection between infrastructures and places, as well as the environmental, spatial and socio-economic regeneration of urban fabrics and open spaces. Nevertheless, this scenario is pioneering in terms of method and approach, beginning with the aim of developing shared, selective and trans-scalar solutions for a multi-layered and not-institutionalized metropolitan area. Further investigation is now necessary to test this method and approach, as well as to check the strategic goals and actions according to

both multi-level policies, plans and projects of surrounding cities and regions, and multiple stakeholders.

Second, the research exhibits some current limits in urban planning processes, as well as open and challenging questions about urban planning tools. On the one hand, according to the difficulties in the implementation of its outcomes (that has not been possible, yet), the research demonstrates how a multi-level vision (that relies on flexible and variable-geometry goals, actions and actors) needs competent institutions. It means that the multi-level governance, that should vary depending on specific urban issues rather than on administrative borders, demands for institutions which are really able to integrate vertically, through an effective and collaborative cooperation (Healey, 2006; Pasqui, 2019). On the other hand, the research outlines how a cross-bordered urban planning process (shared, selective and trans-scalar) implicitly highlights longstanding but still unsolved demands of further investigation towards the renovation of modern urban planning tools in relation to contemporary urban phenomena, dynamics and scales (Gabellini, 2019).

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