Tomorrow Cities Multiscale, Urban Regeneration And Sustainable Mobility

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Abstract- *The foundation of the investigation is developed around urban spatial logics in their scalar multiplicity, anchored in bibliographical research from national and international platforms - ResearchGate, ISI, SCOPUS, Academic Google, specific and personal bibliography - which served to deepen knowledge on the subject of spatial configuration[1], multi-scalar planning[2], Spatial Syntax[3] and socially inclusive and innovative sustainable urban mobility, contributing to the international scientific collection on issues related to the implementation of new policies of integrated urban regeneration in terms of spatiality for the cities of tomorrow.*

Despite the numerous theories, methodologies and techniques that try to identify the problems of large population concentrations, such as cities, urban mobility is still a complex and difficult to understand matter, with implications for the population's well-being and quality of life, thus constituting one of the main problems in large contemporary cities.

The relationship between the configuration of urban space and the main variables that affect the performance of urban mobility - such as density, compactness, integration and connectivity - cause significant impacts on people's commuting movements and reflect the critical conditions of urban mobility existing in large metropolises, where car use values individuality and promotes socio-spatial segregation, generating a picture of social injustice in the appropriation of the city.

Keywords- Climate Change, Multiscale Organization, Sustainable Mobility, Urban System.

I. INTRODUCTION

Although the theme is not new, we assume that its approach is pertinent, not only because we are facing an extremely serious health problem at a global level, but because our cities have gone into functional breakdown and little or nothing has been done in formulating new ones. Urban policies that counter the contradictions and conflicts arising from the socio-spatial structuring of territorialization processes, directly relating them to the multiple processes of infra-urban and supra-urban rescheduling, since the urban continues to be just a level embedded between the levels of national, regional and local planning, when it should be seen as a structural axis of interscalar connection networks that would enable new approaches in urban morphology policies.

In the scenario given to us by the history of cities and the strong influence they have always played in the construction of their own territorial context, diverse and unequal, we try to explore the essential aspects of what has been the contribution of large population concentrations to civilizational progress, while sources of opportunity and innovation deeply rooted in the construction of our common past.

Synthesize the Scopus[4] the research in a territorial and urban context, carried out under the theme "Cities of Tomorrow - Multiscale, Urban Regeneration and Sustainable Mobility" gives us, therefore, the opportunity to reflect on the sustainable development, inspired in realities as we see in Fig. 1, that we all desire and alert us not only to the difficulties of developing integrated non-polluting transport systems, but also for green and environmental regeneration programs with low carbon emissions and resilience to the effects of climate change.

Fig. 1 – Hong Kong

We assume that, in terms of purposes, objectives and values, a certain vision of what the city of the future could become has been taking shape. However, only now is the collective conscience beginning to show signs that it is urgent

to introduce changes in the way the depopulation of the city centers, the aging of populations and low birth rates, or the intense processes of suburbanization where there is a marked dysfunction between economic growth, employment and social progress, driving a large part of the population out of the labor market or into low-skilled jobs that give rise to income disparities that increase inequalities and foster processes of spatial segregation that contribute to the aggravation of the growing number of excluded from society.

The scientific interface of the investigation is established with the Research Centers of CEPESE – Center for Studies on Population, Economy and Society, of the University of Porto; from CITAD – Center for Territory Research, Architecture and Design, from Lusíada University.

II. SOCIALLY INCLUSIVE AND INNOVATIVE MULTI-SCALE GOVERNANCE

Considering that the financial crisis has already had serious consequences on employment and public budgets, with a negative impact on the most vulnerable population, and that the health crisis caused by the emergence of COVID-19 will change global society forever, altering development trajectories due to the convergence of demographic, economic and social adversities, innovation will be an anchor that should support the transition to the Cities of the Future - tending to be diverse, cohesive and attractive, green and healthy - based on a resilient and inclusive economy, principles listed in the United Nations 2030 Agenda illustrated in Fig.2.

Fig. 2 - United Nations 2030 Agenda

And here, the potential of socioeconomic, cultural, generational and ethnic diversity illustrated in fig.3 must be fully exploited to reverse the vicious cycles of demographic and economic decline, establishing a coherent approach in smart, inclusive and green strategies to resolve conflicts and contradictions between the different objectives listed below and to prevent one of them from being fulfilled to the detriment of the others.

Fig. 3 – Ethnic diversity

Hence the importance of the strategic role of integrated urban regeneration[5], as we conceive it, it will fit into the broader concept of multi-scale governance from the perspective of building a more sustainable, innovative and socially inclusive model in all urban and social fabrics of the city, recognizing:

-   The importance of climate change, demographic changes and mobility as major urban challenges;
-   Coherence and certification between territorial and urban issues;
-   The importance of promoting a consensual understanding of the integrated approach.

The interpretation extends to the promotion of the polycentric urban system[6] which favors a structured territorial organization based on a more balanced urban system that contributes to counteracting polarizing trends and promotes more territorial equity in access to goods and services. This means that the implementation of urban regeneration strategies, recovery or reuse of abandoned, degraded or unused areas, will incorporate a more adequate management of material resources and synergies generated in the city, which go through the recycling of local urban solutions.

This concept opens space for the reconfiguration of new centralities and facilitates the territorial integration of transnational functional regions[7] and cross-border[8], noting that cities cannot be defined solely on the basis of their administrative boundaries and that urban policies should not only focus on the city's administrative units, but be articulated with each other in a multi-scale governance framework that simplifies territorial connectivity and cooperation between cities.

III. URBAN CHALLENGES FOR TOMORROW'S CITIES

Most of the available European indicators point to the fact that the trends of demographic decline and the economic crisis increase the diversity of the urban population and create conditions to accentuate social and territorial segregation with implications for the trajectory of development and sustainable urban mobility.

In order to counter this trend, the consolidation of the European model of urban development based on "economic, social, territorial cohesion and sustainability" proposes transnational cooperation between cities in a perspective of social inclusion that transforms diversity into a creative force for innovation, since development and well-being are dynamic assets and synonymous with culture, identity, history and heritage.

However, to face the urban challenges for the cities of tomorrow - in the face of the global economic, social and health crisis - cities must overcome apparently incompatible and contradictory goals and evolve towards more holistic models of sustainable urban development, reconciling economic growth with use of natural resources, bearing in mind that:

- global competitiveness must be inclusive and support the global economy;
- sustainable growth cannot exclude marginalized groups;
- global attractiveness cannot be built at the expense of socially disadvantaged groups.

In a sense, we share the idea that time is running out and that, running out of time, compromises solid integrated approaches to urban planning that bring together the social, economic and environmental dimensions, centered on people for reasons of civic citizenship and social policy, but also for fundamental importance of ensuring flexible formal and informal governance structures depending on the scale of the challenges, combining opportunities and needs in terms of strategic planning.

To this end, it is essential to establish a socially innovative and inclusive multi-scale urban planning strategy that enhances attractiveness without negatively affecting the overall development of the territory, transforming tensions into opportunities and establishing multi-level governance frameworks in the formulation of solid and territorially integrated urban policies.

IV. SUSTAINABLE, INCLUSIVE AND INTEGRATED MOBILITY

The cross-approach between socially inclusive and innovative multi-scale governance, or about new challenges of integrated urban regeneration, provides us with sufficiently consistent information on the main challenges for the cities of tomorrow, with particular emphasis on sustainable and efficient public transport systems. energetic looking [9], complemented with non-motorized means of transport exemplified in fig. 4, that facilitate proximity connections on foot and by bicycle with the integration of social, cultural and economic activities, involving leisure activities.

Fig. 4 – Berlin, Germany

Thinking about sustainable mobility means, therefore, thinking that it is part of society's development models, implying integrated approaches both from the point of view of health - reducing the high levels of CO_2 emissions, pollution and noise - or because of the need for appropriation of public space and reconquest of the city.

As a matter of fact, in terms of sustainable mobility, these questions leads us to think if technological advances, even if they are more ecological, are in themselves the solution to the problem.

This is because as conventional vehicles become more efficient in terms of saving fuel from petroleum, and electric vehicles more affordable, adjusted to consumer demands, the possibility of car traffic increases rather than decreases. and, in this sense, add to these problems the congestion of the city centers or the entrances and exits of large urban metropolises.

By this we mean that if more attractive alternatives to automobile mobility are not proposed, making it less attractive from an economic point of view and the symbol of social status, changing habits and usage values, the task will be

nothing more than a desire without a match because it will be difficult to apply.

The alternative will reside in the effort to improve accessible and ecological transport that facilitates its use by workers, the elderly, people with disabilities, parents with minor children, or grandparents with grandchildren, making the transitions between walking, cycling, using public or private transport a real challenge for the transition of green cities, in a broader territorial context served by an efficient multimodal transport system.

V. REGENERATION OF TRAFFIC INFRASTRUCTURES

It is true that the mobility pattern, based on the road infrastructure system as we know it, based on the predominance of the passenger car, a symbol of emancipation for young people and social status, captivates channels dependent on car circulation, can bring advantages in the evolution of urban transformations that enhance ecological urban transport systems, namely Bicing [9], and in other ways that contribute to creating safe, open and attractive public spaces and a careful aesthetic environment.

Based on this vision of infrastructural regeneration - where cultural, economic, technological, social and ecological aspects are integrated into land use planning - the creation of urban green networks ranging from larger or smaller parks, natural areas or gardens, walls and green roofs that improve the ecological footprint[10], they function as symbols of a common way of life because they are multifunctional and multigenerational.

VI. CONCLUSION

In the thematic alignment that guided this work, "Cities of Tomorrow - Multiscale, Urban Regeneration and Sustainable Mobility", it was observed that the relationships and social processes that have been producing urban spatial logics, as we know them, are out of step and must be apprehended and resolved in a relational way in a multi-scale perspective that allows for the resolution of contradictions and conflicts between the local, regional, national and global, connecting the different spheres of power that act on the territorial space.

The methodology used in the approach to the theme helped to uncover the current contradictions in urban and territorial planning, contributing to accentuate the deregulation and functional disruption caused by decision makers and interveners in the formation of public space because they

rarely assumed that thinking about the urban in its scalar multiplicity it would contribute to the formulation of new action strategies in the elaboration of urban policies and planning and management activities, carried out in an integrated and relational manner and not in isolation from territorial contexts.

Furthermore, the health problem caused by Covid-19 is a reminder of what has been known for a long time: the depopulation of city centers has increased, processes of suburbanization have intensified, where there is a marked dysfunction between economic growth, employment and social progress, increased inequalities and processes of spatial segregation that jointly contribute to the aggravation of the growing number of excluded from society.

This means that the paradigm that supported the current model of urban planning has broken down. And the mobility system as we know it also went bankrupt, being essential to develop integrated systems of non-polluting transport supported by green and environmental regeneration programs with low carbon emissions and resilience to the effects of climate change, demographic changes and mobility as major urban challenges.

In this regard, we envisage the promotion of urban development in a balanced polycentric territorial context with a view to implementing strategies for recycling urban space in its various dimensions - urban regeneration, recovery or reuse of abandoned, degraded or unused areas - incorporating a more adequate management material resources and synergies generated in the city that go through the recycling of local urban and energy solutions.

It is, therefore, against this background of concerns that the ongoing research aims to add scientific knowledge to the state of the art in urban mobility, focused on the urban challenges of tomorrow's cities, namely in the domains of sustainable, inclusive and integrated mobility; in integrated urban regeneration and recycling of urban space; in promoting green cities; and in socially inclusive and innovative multi-scalar governance;

Thinking about the urban in its scalar multiplicity, as we conceive it, can help to highlight the different processes that produce it and allow us to formulate new action strategies in the development of planning and management policies and activities, bringing new readings on problems such as unemployment, segregation and poverty, requiring new, more flexible perspectives on urban development as they are multifunctional and multigenerational, tending to be diverse,

cohesive and attractive, green and healthy, with a resilient and inclusive economy.

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[3] City-scale Spatial Syntax, considered as a theoretical model that investigates relationships between spatial configuration and social, economic and environmental phenomena, including patterns of movement, density and urban growth, social differentiation, security and crime.

[4] Synthesis of the set of documents that served as the basis for research on urban mobility from the perspective of future urban agglomerations, cities and towns, in a territorial context.

[5] The concept includes integrated approaches to the weaknesses that most of the most central urban areas of cities show, contributing to the multicultural and multidisciplinary debate on the design and implementation of innovative and socially inclusive public policies aimed at safeguarding and enhancing the urban and architectural heritage.

[6] The polycentric structuring of the territory in the logic of the affirmation of the metropolises and the main cities as: engines of internationalization and external competitiveness; factors of internal cohesion and promotion of urban qualification; strengthening of inter-urban and rural-urban cooperation; structures that affect the social well-being and quality of life of populations.

[7] The strengthening of the dynamics of relations with the international system, in a highly competitive framework, broadens and broadens the geographic scales of penetration of its networks in view of the growing global competition between cities.

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