

# Urban System in Pandemic Times

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**Abstract**— The thematic systematization that guides this work is supported in reflections raised by the need to participate in the deepening of specific issues that will result from the physical transformations of the territory in the time of the post-pandemic. Knowing that many of the greatest urban reforms that modified the urbanism paradigms were initiated under the influence of the many pandemics that have existed since times all over the planet with emphasis on smallpox in Ancient plague in Europe in the 14th century, cholera in the 19th century and Spanish flu in the 20th century.

Therefore, with this theme, “Post-Pandemic Urban System”, we intend to address issues that aim to reflect on the main strategic options and development models with territorial impact, analyzing the strengths and weaknesses, opportunities and threats that arise in the external environment in a global context that are transforming ways of life, collapsing health systems and changing working relationships as we know them today.

**Keywords**— Cities of tomorrow, Territory, Urban regeneration, Urbanism and pandemic.

## I. INTRODUCTION

THE history<sup>1</sup> and warnings of several academic studies related to territorial planning and the urban system have long been warning of dysfunctions in the experience in public space, associating them to scenarios of great uncertainty and unpredictability that demanded immediate responses to adapt the social and economic fabric to contexts that required changing endogenous conditions in the territory. Going back to the influence of the many pandemics that have been known throughout human history, we can say that these events would eventually lead to the appearance of model clusters from the first proposals that appeared in the first half of the 19th century from Robert Owen's initiative, Lever Brothers, George Cadbury, Fourier and Cabet - anticipating the garden cities of Ebenezer Howard in the twentieth century<sup>2</sup>- up to the Charter

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<sup>1</sup> The bubonic plague or Black plague started in 1347 in Central Asia, devastated Europe, being considered together with the Spanish flu the greatest pandemic in the history of civilization.

Nineteenth-century cholera groups together eight major pandemics that occurred during about 150, spreading across the world, causing death to an alarming number of people.

of Athens, a period in which we sought to find a common denominator for a new city that implicitly incorporated an idea of hygiene, healthiness and good sun exposure based on four basic functions in the city: housing, work, well-being and circulation. In fact, not far from the guidelines contained in the European Spatial Planning Charter illustrated in Fig.1 which presents, in this regard, to Manuel Diogo, “a broad view of the concept that encompasses the policies of an economic, social, cultural and ecological nature of society”.



Fig. 1 – European Council of Spatial Planners Conséil in <http://ectp-ceu.eu/index.php/en/16-non-categorise/336-sign-charter>

According to Manuel Diogo<sup>3</sup>, “the planning process must be multidisciplinary, systemic, permanent in time and address the scales that it considers most appropriate to analyze the whole of the territory”, guiding this investigation towards questions that aim to reflect on the main strategic options and models of development with territorial impact, analyzing the strengths and weaknesses, opportunities and threats that arise in the external environment in a global context, with an impact on the Urban System Post Pandemic.

We know that there are no exclusive factors, but we realize

The Spanish Flu is considered the largest worldwide pandemic known to date when compared to the identical viruses mentioned here, infecting around 500 million people and killing hundreds of millions of people aged between 20 and 40 years.

<sup>2</sup> “Garden Cities of To-morrow by Ebenezer Howard represented a break with the dominant urban thinking of the time, considering that the city was the space for socialization, cooperation and opportunities, although it suffered from serious problems related to over-population and unhealthy of your space; while the countryside being the space for nature, the sun, clean water and food production, it suffered from endemic problems such as the lack of jobs, infrastructure and social opportunities.

And the alternative, for Howard, would be based on planning what he called Town-Country, taking advantage of the best that was in town and in the countryside.

<sup>3</sup> Lusíada Architecture Journal, Territory and City, Addressing the themes of spatial planning, city morphology and urban space evolution, urban form, planning and organizational model, develops the principle that the city, like any living organism, is in continuous mutation, corresponding to the urban form to the way the morphological elements are organized and linked together in the formation and evolution of the urban space.

that each of them or associates between them when they occur, calls into question the promotion of healthy living standards and compromises an urban environment quality and proximity logics that strengthen cultural identity through processes of participation and involvement active participation of citizens and communities on a basis of diversity and differentiation.

For this very reason, the structure of this work, in conceptual terms, does not take for granted that although cities and rural areas are more interconnected, thinking that they would be enough for the integration of the local economy with international markets and developing complementary networked relationships do not yet serve as anchors for territorial-based approaches, with sufficient potential, to establish the strategic commitment between land use planning and sustainable development.

## II. TERRITORIAL ORGANIZATION

In other circumstances, we already mentioned that we find ourselves facing a profoundly asymmetric demographic distribution of the territory, bipolarized around the countryside/city and inland/coastal structures, and it seems pertinent to underline that although cities have gradually come to be equipped with new technological tools with the capacity of monitorization and efficiently manage their performance, stills very incipient and the active involvement of its citizens and institutions in urban sustainability initiatives that promote participatory governance and focused on improving the quality of life of citizens.

If we just look at how this pandemic, in a couple of days, disrupted the way of life that we were leading, paralyzing it completely, causing hospitals and mostly health structures to collapse, with the certainty that the return to normality will force new forms of coexistence in the contexts of the family and the diversity of communities where each one of us is inserted, in a process of permanent construction and deconstruction, of approximation and distance, sometimes flexing, sometimes destroying.

We assume, therefore, that it is inevitable to rethink the design models of the Urban space and decide whether the physical transformations of the territory in a time of pandemic demand immediate responses to adapt its social and economic fabric to contexts that require the valorization of the endogenous conditions of the territories where are inserted, committing themselves to future generations in safeguarding the common heritage, the quality of urban environment and the proximity of urban logics that strengthen cultural identity through the processes of participation and active involvement of citizens and communities on a basis of diversity and differentiation.

The understanding of these problems and the challenges raised by the transformation of the natural territory - in a

process that although being continuous was not always inventive and renewed - alerts us to the principle that the territory is not a fixed or eternal condition, but rather the result of damage that we successively cause as a community. In this way, we are frightening with the thinking that our common behavior as a society compromises the creation of more resilient, healthy, fair, connected and cognitive cities, anchored in the optimization of urban dynamics that contribute to sustainable urban development through cooperation between local, national and international platforms, between public and private agents and civil society, whose integrated combination - based on the promotion of collective innovation and learning - will help to transform our territories into more sustainable urban structures.

## III. URBAN INNOVATION

While recognizing the structuring importance of urban centers and the growing influence of networks and niches of entrepreneurship that ensure the visibility of cities, including the differentiating factors of identity, attractiveness and competitiveness<sup>4</sup> with a focus on strengthening functional synergies and optimizing the use of infrastructure. mobility and logistics, we have lack of information about the implementation of low carbon strategies, efficiency in the use of resources, research and development of production processes and more sustainable products, in fact, policies that should contribute to the blue economy<sup>5</sup>, valuing the potential of the coastal urban areas, with emphasis on blue energy, aquaculture, sport and blue recreation, coastal maritime tourism and cruises.

However, the studies that we can designate as urban innovation, in a perspective of sustainable development, will reside more in the promotion of urban rehabilitation actions in areas with multidimensional deficiencies, in the perspective of the integrated valorization of the territory, including, not only the physical valorization and the functional diversification - privileging actions for the conversion of abandoned structures and conditions for the qualification of public space and infrastructure - but also actions of a material and immaterial nature that complement economic, social, cultural and environmental revitalization, especially in disadvantaged urban areas characterized by the need of conservation actions with implications safety, healthiness, aesthetics, landscape and environmental sustainability.

This concern extends to the need to promote the qualification and integration of urban outdoor spaces, which, as they constitute systems of collective spaces, can enhance their functions, enhancing the balance of ecosystems, biodiversity and the landscape, contributing to the set of green infrastructure helps to stimulate the emergence of an urban culture of uncertainty management that simultaneously contributes to improving the vulnerability of urban systems by preventing and

<sup>4</sup> It highlights as factors of competitiveness the urban, architectural, landscape, historical and socio-cultural, climatic, gastronomic, safety and quality of life values.

<sup>5</sup> The Blue Economy concept, created by Günter Pauli, founder of ZERI - Zero Emission Research and Initiatives - is based on structural changes in the

economy and the functioning of ecosystems, suggesting innovative sustainable development solutions that reflect the preservation of the environment and the improvement of living conditions of the populations.

reducing risks, and increasing resilience to economic, natural, technological and climate change risks.

#### IV. URBAN ENVIRONMENT AND URBAN REHABILITATION

These challenges and perspectives allow us to mention that cities play a fundamental role in territorial and urban development, based on a polycentric structure and compact settlement, where there are high deficiencies in spaces for green, ecological or environmental regeneration.

When it was thought that we would move towards advanced social progress - with housing, social services, health and socially balanced education - we see, on the contrary, the development of worrying processes of spatial segregation and an increasing number of excluded from society that they originate closed subcultures hostile to society in general.

These indicators make it clear that this pandemic wiped out all the certainties of development of contemporary society on a global scale, causing irreversible disturbances in the pillars of society that we considered definitive, causing misalignment between the development goals defined at the supralocal scale, demonstrating the fragility of available resources in strategic sectors such as the mobility system, the urban space matrix, the hosting areas of the knowledge economy, environmental sustainability, rurality and natural spaces, calling into question models with acquired knowledge such as the education, health, work, entrepreneurship, culture and citizenship.

In fact, from a health point of view, mobility systems have been implemented in the dominant logic of private transport, generating traffic jams at the entrance and exit of cities, forgetting that distance is increasingly measured in time and less in kilometers<sup>6</sup>, but this system broke down and requires new regenerative concepts of urban rehabilitation that transform cities making them safer from the sanitary point of view, focusing on the proximity of services, giving meaning to the principle of the best trip is the one that is not necessary to be made, putting this idea against the concept of Carlos Moreno<sup>7</sup> based on a system of urban reorganization, which he called “city of the quarter of an hour”, a project that seeks to deconcentrate service and productive activities, bringing them from a distance acceptable place of residence.

#### V. TOMORROW CITIES

The state of the art allows us to say, with sufficient certainty, that urbanism has always been linked to advances in the field of medical and biological sciences, providing infrastructural

responses to the organization of large population concentrations and the precarious sanitary conditions that provided great historical progress outbreaks of diseases - pests, epidemics and pandemics - developing hygienic<sup>8</sup> urban models, far removed from the demands raised by the globalized society with a high level of interpersonal connectivity, resulting from information and communication technologies.

It is evident that there are no easy answers to complex problems, but we know that cities play a fundamental role in territorial and urban development, based on a polycentric structure and compact settlement, where there are high deficiencies in spaces for green, ecological or environmental regeneration and mobility.

Contemporary concepts such as smart cities and compact cities, such as those disseminated by contemporary urbanists such as Richard Rogers<sup>9</sup>, remind us that statistically about 68% of the world population lives and works in cities, estimating that up to 2025 this number increases to 75% of the population, increasing the risk of new direct causes of “contamination, alienation and social division<sup>10</sup>”.

Therefore, when it was thought that we would move towards advanced social progress, with housing, social services, health and socially balanced education, we see, on the contrary, the development of worrying processes of spatial segregation and an increasing number of excluded people. of society that originate closed subcultures hostile to society in general.

It seems possible to us that urban interventions in existing cities and communities, aimed at innovative systems of spatiality that make it unnecessary to adopt measures of social or physical distance, as many of us prefer, may be opportunities for collective awareness that introduce a paradigm shift for a new, more cooperative, systemic and egalitarian collective life, to overcome the challenges of our time with creativity, imagination and art.

#### VI. URBAN ENVIRONMENT AND URBAN REHABILITATION

The The reconfiguration of the current organizational structure of the city in proximity services should deepen the balanced development between cities and their rustic surroundings, including agricultural and forest areas of the hinterland and urban-rural interfaces, assuming that the requalification and enhancement of rural settlements strengthen their integration into the urban structuring network of the territorial organization, exploring the economic, social and cultural complementarities that results from this close relationship, to develop an effective management model of the

<sup>6</sup> Manuel Diogo, Lusiada Architecture Journal, Territory and City, develops the principle that the city, like any living organism, is in continuous mutation, corresponding to the urban form to the way in which the morphological elements are organized and linked together in the formation and in the evolution of urban space.

<sup>7</sup> Carlos Moreno, Franco-Colombian researcher, professor of urbanism at the Sorbonne, precursor of the ideas of chrono-urbanism and the “quarter-hour city”, proposes to reconfigure the current organizational structure of the neighborhoods so that each person has access to main services - education, work, health, neighborhood relations, with walking or cycling distance not more than 15 minutes from the residence.

<sup>8</sup> The modern movement, at the beginning of the twentieth century, having CIAMs - International Congresses of Modern Architecture focusing on the reflection on urban models - whose reference was based on the hygienist model - which ended up not taking due account of the complexity of the city's structure and diversity contexts and agents that operate in them.

<sup>9</sup> Richard Rogers, Pritzker Prize in 2007, bases his vision on the influence that architecture and urban planning has on people's lives.

<sup>10</sup> Justifying these reasons, he alludes to the fact that sustainable urban planning will be part of the solutions to create more friendly cities that respect the citizens and the environment.

dispersed and fragmented construction areas in rural soil, promoting their harmonious integration in the landscape and urban system, with advantages to ensure the multifunctionality of economic activities, sustainable development and the safeguarding of the existing material and immaterial cultural heritage.

These factors of differentiation of the territories promote the plurality of local cultures, reinforcing their fundamental role in the defense of biodiversity, and value the proximity scale for the development of inclusive, intelligent and sustainable community-based citizenship processes, taking advantage of the installed capacity of the associative fabric and the local public intervention network, with emphasis on integrated territorial approaches that promote new economic dynamics, settlement and employment.

## VII. CONCLUSION

Associating the described aspects with demographic changes related to the aging of populations, the depopulation of city centers or the intense suburbanization processes that increase urban expansion and the diffusion of low density population - with public services difficult to secure, natural resources about exploited, insufficient public transport networks and car dependence - these are threats that contribute to the weakening of sustainable territorial development and hinder the link between economic growth, employment and social progress. It is not surprising, therefore, that we are excluding a considerable part of the population from the labor market or referring it to low-skilled and low-paid jobs, accentuating the progressive decline of the welfare state as we know it in most European countries.

Although it is already clear that this pandemic ended all certainties and is causing deep disturbances in the pillars that we thought stabilized, we assume that the management of these complementarities will involve transforming threats into positive challenges and establishing strategic development approaches taking into account the following objectives:

- i. The development of sustainable local economies, fixing the essential skills and resources in the local economic fabric and supporting innovation and social participation;
- ii. The creation of a resilient and inclusive economy that guarantees a decent life for people excluded from the labor market and ensures their participation in society;
- iii. The potential for socioeconomic, cultural, generational and ethnic diversity, bringing together older people and families, and simultaneously places of tolerance and respect;
- iv. Combating spatial exclusion through better housing and attractive public spaces and sustainable, inclusive and healthy mobility, supported by multimodal public transport;
- v. A holistic approach to environmental and energy issues, given that the various components of the natural ecosystem are closely interlinked with the

social, economic, cultural and political aspects of the urban system;

- vi. With the performance that the dynamics of small and medium-sized cities that can and should play an important role not only in the well-being of their inhabitants, but also in that of the surrounding rural populations, but because they are essential to prevent rural depopulation and exodus to cities and to promote balanced territorial development.

In any case, it is essential to adopt a holistic model of sustainable urban development combining formal structures with informal and flexible structures of organization systems that correspond to the scale at which the challenge arises and are capable of promoting common visions, reconciling contrary objectives and development models conflicting.

This means that the systems of territorial organization must adapt to the circumstances of the context and consider various time scales, relating other levels of organization and networking with other cities, with a view to sharing investments and services that are necessary in a wider territorial scale, with civic involvement and participation, creativity, innovation and cohesion.

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