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Achieve sustainable urban development in Lima Callao Megalopolis, Peru by 2050

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ABSTRACT

This paper is the product of the author's academic research, personal reflection, professional experience, and technical suggestions on the urban evolution of Lima City, Peru, from 1535 to 2020, the urban planning evolution of Lima Callao from 1949 to 2020, and the sustainable development of Lima Callao Megalopolis, Peru, in 2050. From this perspective, the purpose of this paper is to think about the urban evolution of Lima from colonial Lima to big city Lima from 1535 to 2020 and the evolution of Lima Callao urban planning from 1949 to 2020. Similarly, technical proposals were submitted to promote the sustainable urban development planning of Lima Callao Megalopolis to commemorate the 200th anniversary of Peru's independence (2021), the 500th anniversary of the Lima Spain Foundation (2035), and the second half of the 21st century (2050). Within the framework of the 2030 agenda for sustainable development, the new urban agenda, and the changing national reconstruction plan.

Keywords: Lima; Callao; big city; sustainable urban development; urban planning

1. Introduction

According to the National Institute of Statistics and Information, 75% of Peru's population is urban, compared with 72% in 2007, 65% in 1993, 47% in 1961, and only 36% in 1940. 48% of the country's total population lives in one of the 15 most populous cities. In 1990, the national urban GDP accounted for about 85% of the national economy, 79% in 1972, and 63% in 1950^[1]. At present, it is estimated that the gross national product must account for no less than 90% of GDP.

In other words, Peru's population and economy have been continuously urbanized over the past 70

years, so the future of Peru's development is likely to depend mainly on our city^[2].

This economic and social importance of Peru's urban areas is most evident in Lima and Callao, whose population growth exceeds all population projections and urbanization exceeds the initial political and administrative restrictions of Lima, Callao, and the former hot spring area. It has been inundated by the emergence and establishment of marginalized or informal human settlements, which now account for one-third of the population of Lima and Callao^[3].

In 1990, Lima and Callao were metropolis with a population of 6.5 million. Today, 30 years

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later, great changes have taken place. Lima and Callao now have a population of more than 10 million, which has a direct impact on Valar, Canta, Varokiri, and Kanet provinces. It has crossed a historic threshold to become a megacity, that is, the merger of metropolitan areas and/or the overlap of their affected areas, with a population of more than 10 million^[4].

The purpose of this study is to reflect on the urban development of Lima from 1535 to 2020 and the evolution of Lima Callao urban planning from 1949 to 2020. Technical proposals were also put forward to promote the sustainable urban development planning of Lima Callao Megalopolis in Peru to commemorate the 20th anniversary of Peru's independence, the 15th anniversary of the establishment of the Spanish Lima Foundation, and the first fiftieth anniversary of the 21st century.

2. Materials and methods

In order to achieve this goal, this paper first makes an overall reflection on the urban development of Lima from 1535 to 2020 and provides the data and facts of Lima Callao urban planning and development from 1949 to 2020.

Then, it summarizes the concepts of development, urban development, sustainable development, sustainable urban development, and sustainable cities. On this basis, it tests the theoretical scope of sustainable development, sustainable urban development and sustainable urban development planning in Peru, and determines its basic components. Therefore, it can be combined with and applied to the reality of Lima Callao Megalopolis.

Finally, some technical suggestions are put forward to realize the sustainable urban development planning of Lima Callao Megalopolis and the strategic concept for 2050 is put forward.

3. Results and discussion

The following are the thinking results of the urban development of Lima from 1535 to 2020, the

evolution of Lima Callao urban planning from 1949 to 2020, and the technical suggestions to promote the sustainable development planning of Lima Callao Megalopolis from the perspective of the 2050 strategy: A rich, visionary, proactive, and operational debate in this regard.

In the literature review of sustainable development, it is necessary to recognize that there is no consistent idea on the issue of sustainable development, and I have different positions, explanations, and nuances. Fernández^[5] believes that the concept of sustainable development seems to be an internal reflection of the mainstream mode of production. Although this has always been a critical argument, it attempts to accurately analyze the feasibility of the increasing compromise of the former capitalist mode of production.

On the contrary, Allen, cited by Fernandez^[5], attempts to summarize sustainable development as the link between social, economic, and ecological subsystems. From the perspective of critical ideology, Leff, quoted by Fernandez^[5], defines it as the opportunity for society to obtain natural assets and own natural and technological means of production, which ultimately determines the distribution of wealth.

In this regard, sustainable development should be understood as a comprehensive, multi-sectoral, and positive process of change at the national, regional, or local level. Its objectives and indicators cover eight basic components: the promotion of values and human rights, economic competitiveness, social equity, respect for cultural and ethnic diversity, territorial function, environmental sustainability and disaster risk management, and Democratic Governance^[6].

With regard to the literature review of sustainable urban development, it is worth noting that the emerging concept of sustainable urban development needs more detailed theoretical construction and operable application in urban planning. Because it is often wrongly limited to correctly dealing with the interaction between urban development and the

environment^[7].

According to the European space strategy, if cities are to become the basis of urban sustainable development strategy, they must combine the quality of life and economic vitality through better distribution and combating exclusion. Optimize the relationship with surrounding areas to reduce their impact or ecological footprint. And defining innovative forms of urban governance, public-private participation, and cooperation in all institutional areas^[8].

Therefore, sustainable urban development should be understood as a process of comprehensive, multisectoral, and positive change in the urban center, including nine basic components, such as urban spatial complementarity, urban competitiveness, urban function, urban and landscape quality, environmental sustainability, customized risk management, urban social equity, cultural identification, and urban governance^[9–11].

In this regard, sustainable urban development planning should be understood as a technical, social, and political process, embodied in a technical, policy, and management tool called an urban development plan, which aims to predict, seek, promote, and standardize the balanced combination of the nine basic components of sustainable urban development^[7,11].

With regard to the centralized thinking and technical suggestions on coordinating the unsustainable urban development planning of Lima Callao Megalopolis, from the strategic perspective of 2050, the urban development of Lima and Callao cannot be subject to the improvisation of technology, political taxation, real estate speculation, land transaction or the so-called genius of mayors.

By 2050, the unsustainable urban development plan of Lima Callao Megalopolis needs to be formulated, approved, and gradually implemented as a comprehensive and specific sustainable urban development plan.

This overall context should provide an opportunity to reactivate the role of the Metropolitan Planning Institute (IMP) in the leadership, guidance, and management of sustainable urban development planning for Lima Callao Megalopolis. In order to reverse the decline of urban planning in Lima and Callao since 1996.

At the national level, Peru's public policies for sustainable urban development need to be designed, implemented, monitored, and evaluated within the framework of the 2030 agenda for sustainable development, the new urban agenda, and the comprehensive reconstruction plan with change.

This national public policy on sustainable urban development needs to be implemented at the local level through the formulation and implementation of sustainable development plans, sustainable land use, sustainable urban development, sustainable urban mobility, environmental action, and disaster risk management.

Finally, considering the continuous urbanization process of Peru's population and economy over the past 70 years, if we accept the challenge of gradually making it a sustainable city, the future of Peru's development will be determined in our city.

3.1. From garden to big city

On January 18, 1535, the Spanish Lima Foundation (Peru) was established and became the "city of kings" in Lima. Today, it is called the Vasa of Santa Ana. Some historians say that its founder, Francisco Pizarro, named Lima because it coincided with the day when three wise men went to Bethlehem, and the governor and his companions were looking for the most suitable place to build a new capital in the arena between Lima and Panchakarma. It is also said that the name "City of Kings" is to commemorate the king of Spain. Later, however, the name "Lima" surpassed the Spanish name of the city.

By 2020, 485 years will have passed since this historic milestone. Today, the so-called "checker-

board of Pizarro” or “Lima Square” is part of the “Lima Historical Center”, a socio-economic, spatial, and cultural structure that witnessed an important period in urban history, embodied the cultural creativity of local communities and maintained the unique characteristics and quality of life of an active urban center^[12].

Similarly, the historical center of Lima is a human space, a Lugar full of vitality, identifiability, representativeness, and integrity, which is strongly restricted by the physical structure of the past and is characterized by the evolution of the city. In its history, it has accumulated the most concentrated monuments with great artistic, historical, and cultural values in Peru, and has public space. Its elements need to be protected as a commemorative urban environment^[13].

In the 1950s and 1960s, Lima’s historic center entered a modern stage, with the construction of many department and office buildings. However, since the 1970s, the region has experienced a process of urban deterioration, which became more serious in the 1980s, and the traffic volume and outpatient volume in the region are increasing.

In December 1988, UNESCO^[14] declared the San Francisco monastery a “world cultural heritage”. In 1991, the United Nations Educational, Scientific and Cultural Organization (UNESCO) announced that it was part of the “historical heritage of Spain”, which was built in 1991. In the late 1990s, the historical center of Lima experienced some restoration, expelling street businessmen, reducing crime, and restoring historic sites.

Therefore, since its establishment in 1535, Lima, Spain, has evolved from “colonial Lima” to a “garden city” and “three coronation villas”. “Lima Creole”, in the Peruvian waltz, is known as “still retains the proud Garbo of the governors, because it still retains its charm”^[15]. It “evokes people’s memories of the old bridge, river, and Alameda”. At that time, “Elisa walked with osmanthus”^[16]. There was a “small town hidden in leaves and thoughts, embracing memories, gullies and steps”^[17].

At present, Peru is “the most dynamic city in Latin America” and “the best cooking destination in South America” in the crowded, international, and provincial “Lima megalopolis”. After all, in the popular imagination, Lima used to be and is now part of the “iron RRA of Inca”, and the sun illuminates it because God commanded it^[18].

However, the “city of kings” seems destined to be ravaged by those who are regarded as the “king of cities”. In our city, improvisation, arrogance, opportunism, corruption, and cynicism are the bread of the day. Today, people still often find chaotic mobility, unsafe streets, incomplete or alternate road passes, plundered or about to be plundered valleys, abandoned beaches, temporary dams, unplanned plans, unplanned projects, and unfinished or unfinished projects. However, it is now hoped that the current municipality will begin and call on Lima’s cities and citizens to resume the process.

In addition, the real estate boom in Lima in the first decade of the 21st century led to institutionalized urban chaos. It is investors and real estate capital that determine the growth mode of the city according to their own interests, under the policy of relaxing the dangerous restrictions on living, environment, and personal safety conditions promoted by the state. In addition, municipalities lack initiative and political determination to maintain order^[19].

On the other hand, the urban social movement^[20,21] is fighting for their urban rights in a country that lacks inclusiveness and inefficiency due to a lack of access to the barren land and housing programmers for social benefits^[22], occupying mountainous areas and high-risk areas facing disasters, such as river beds, dry valleys, cliffs, and coastlines. Moreover, over the past few decades, mafia run land transactions have colluded with bad professionals and corrupt civil servants.

However, there are other meanings of urban Banas, such as the improvised replacement of Vivien Da’s single-family model one by one, rather

than the multifamily model. The serious shortage of basic services, urban equipment, and green space has intensified. And the accelerated depletion of urban expansion areas is getting farther and farther away^[19].

Therefore, the consenting municipal and national authorities should send urgent letters on this matter in order to stop this declared urban murder. Otherwise, you'll have to sing a waltz to the town: "When I look at you, I look at how sad you are, and how sad I am when I know what you have lost"^[23].

In fact, what Lima urgently needs is not the so-called genius of politicians, but determined and honest authorities and effective urban managers to turn planned work and actions into actions through public and private investment. Citizens participate in urban construction and exercise urban rights. That is, if urban residents abandon individualism, skepticism, stereotyping, and indifference, they have the right to build, decide, and create cities^[22].

In the last decade of the 21st century, Lima and Callao also crossed the historical threshold from metropolis to metropolis. As a result, Lima and Callao provinces now form a megacity, which is the urbanization of metropolitan areas and the overlap of their affected areas. This has a population of more than 10 million and has a direct impact on the Valar, Canta, Varokiri, and Carnet provinces^[3].

3.2. Lima Callao urban planning from 1949 to 2020

As the background of Lima Callao urban planning, since the establishment of the national planning and urban planning office in 1946, at the initiative of ARQ, vice president of intones. Fernando Belún de Terry (who later served as president of the Republic twice) can say that during 1949–1968, Lima Callao's first urban planning involved urban zoning and road planning. This reflects the influence of functionalism on urban design, mainly physical space, and aestheticism. This is an example of the Lima Pero plan in 1949 and the Lima regulatory plan in 1956^[24].

Between 1969 and 1980, urban planning in Lima and Peru developed from physical spatial urban planning to more complex and interdisciplinary urban planning. By better understanding the actual behavior of urban development and more operational urban policies and technical tools, they have consolidated Lima Callao's urban planning. This is the case of the Lima Callao Metropolitan Development Plan ^[24] from 1968 to 1980.

In the Municipal Administration of Mayor Eduardo Orrego Villacorta from 1981 to 1983, a metropolitan development project was formulated to manage the funds provided by the World Bank for the formulation of Lima Callao metropolitan development plan and Lima Callao metropolitan transportation plan.

In the Municipal Administration of Mayor Alfonso Barrantes Lingan from 1984 to 1986, Lima City Council Agreement No. 270-1986 formulated and approved the Lima metropolitan urban structure plan from 1986 to 1996 as the metropolitan Tano pilot plan. Because there are no specific tools to implement, such as urban investment plans, rules, regulations, specific rules, etc., it has become an ineffective plan.

In the Municipal Administration of Mayor Jorge del Castillo Gálvez from 1987 to 1989, the special project of the urban development plan was established to formulate the urban development plan of Lima Callao and supervise the work of the Transurban class consultant responsible for formulating the urban transportation plan of Lima Callao.

Therefore, the Lima City Council approved the Lima Callao Planet metro development plan for 1990–2010 by agreement No. 287 of December 1989. In addition, the Lima Center plan for 1987–1997, approved by the Lima Metropolitan Council agreement No. 025 of January 1989, was adopted, which sets out the strategic vision of the Lima historical center, including the Lima fence, to promote the development of its urban environment and prevent its deterioration.

In the Municipal Administration of the Mayor of Ricardo Belmont Cassinelli from 1990 to 1992, the metropolitan urban planning, planning, program, and project office was established on the basis of the special plan project in accordance with Lima Mayor's Order No. 089 of May 1990 to formulate urban bank programs and projects of a metropolitan nature. However, in the reorganization of the organizational chart of Lima City in December 1990.

On 7 February 1991, the Lima Metropolitan Council decided, in accordance with the agreement of Lima Metropolitan Council No. 032, to establish the Metropolitan Planning Institute on the basis of the human and technical resources of the former planet and probe as an advisory entity to the Lima metropolitan council and the Lima metropolitan mayor's office to promote, comprehensively guide and organize the local (urban and regional) development planning of Lima province.

In addition, in accordance with Lima Metropolitan Council Agreement No. 167-1991, the IMP is responsible for updating and publishing the Lima Callao metropolitan development plan for 1990-2010. Updated in 1991, Lima Municipal Decree No. 127-1992 came into force and was approved by Lima Municipal Decree No. 099-1996. Therefore, since the IMP was established in 1991 and the 1990-2010 plan was updated, published, and implemented in 1992, the Peruvian capital has an informal urban planning and a municipal body responsible for monitoring and feedback. Adapt it to possible situations during action.

Based on these unpublished conditions, a permanent planning process was established from the establishment of IMP in 1991 to 1996, and this process was proposed in programs, standards, technical reports, provincial urban plans (such as the general urban plan of Callao province for 1995-2010 under the constitution approved by the Callao city regulation No. 018-1995), Regional urban plans (e.g., Miraflores District Urban Plan 1996-2010, approved by Orden Za No. 143-1999 of Lima). San Tiago district urban plan 1996-2010, approved by

Lima Decree No. 199-1999). special urban plans (e.g. Lima Metropolitan Green Coast Development Master Plan 1995-2010, approved by Costavid Project Management Authority No. 79 of 1995), Convention on Urban Research and International Cooperation. All of this is to guide and simplify decision-making related to urban development^[6].

In the municipal administration in 1996-1998 after mayor Alberto Andrade Carmona was reflected in the municipal term of office in 1999-2002, this continuous planning process was interrupted in 1996, and imp was entrusted to formulate an indefinite comprehensive plan for the medium-term urban development of Lima Province in 1998-2002, which was never completed.

In addition, through pre-investment research, the task of planning economic and financial instruments has been abandoned. Despite the progress made before 1996, the planned technical and regulatory instruments (rules and regulations) have not been firmly accepted.

In the municipal management of Mayor Susana Villarán De La Puente from 2011 to 2014, with the support of the School of Government and Public Policy of the Catholic University of Peru, a regional plan for the coordinated development of the Lima metropolis for 2012-2025 was formulated. Approved by Lima Decree No. 1659-2013.

In addition, Lima decrees 1505-2011, 1604-2012, 1702-2013, and 1862-2014 extended the validity of the plan until the completion and approval of the new metropolitan urban development plan of Lima and Callao in 2035. This was formulated by Lima in 2014 as a special project composed of external and national consultants, but it was not approved by the municipal government.

In addition, in December 2014, Lima's plan for the restoration of the historical center developed a technical document called the master plan of Lima's historical center by 2025, which was not approved by the municipal government.

Mayor Luis Castañ Lossio's municipal management in 2015-2018 did not evaluate, socialize, debate, supplement, correct, or approve the above urban development plan of Lima and Callao in 2035, nor did it approve the master plan of Lima historical center in 2025. It only approved the Lima urban development plan (or Municipal Ordinance of Lima, 1972–2016) formulated by the Lima municipal planning authority, which is considered “the first step in the orderly and systematic planning and management tools related to the urban development vision.” But in fact, this is a comprehensive plan, not an urban plan, with too much emphasis on road engineering.

Mayor Jorge Muñoz Wells's current municipal management in 2019–2022 adopted the master plan of Lima Historical Center, which adopted Lima municipal regulation No. 2194-2019 in 2029. The regulation includes a single administrative regulation, which stipulates that “both normative technical documents are aimed at promoting the comprehensive, sustainable and human resource development of this important area of the capital”.

It also decided to formulate the Lima metropolitan urban development plan for 2021–2040, in which “part of the 2035 metropolitan urban development plan of Lima and Callao will be used for the municipal management of mayor Suzanne Villaran De La Puente from 2011 to 2014, and will be excluded by the municipal management department of mayor Luis Castillo^[4] from 2015–2018.

3.3. Sustainable development of Lima Callao megacity by 2050

Development (or progress) is a term. Its initial usage was the thought of Utopians in the Renaissance, and the most accurate usage belonged to the economists, social scientists, and politicians responsible for public policy in the 20th century. Like any concept, development is the starting point of time and represents the interests of those who mobilize resources and talk about resources authoritatively. From the most economic approach to environmentalists to the most sociological and political

approaches, and those that emphasize good governance and Governance^[25].

By collecting inputs from various methods, development can be defined as a process of change in the human biological, economic, social, political, cultural, and/or physical environment. This process of change is characterized by the creation of wealth, the improvement of people's quality of life, the integration of technological innovation, the improvement of the living environment, the promotion of ethical, civil, and social values, and effective and legitimate government management^[6]. One of the development components is habitat improvement, including the natural environment and built environment. The latter also includes urban population centers, which has led to concerns about defining urban development^[2].

Urban development is a dynamic process. Population and activities are concentrated in cities or general population centers, resulting in urban material growth (land use, basic infrastructure, housing, public services, and urban equipment), improving the living standards of the poor, improving habitat and ecological environment, and consolidating urban culture (habits and customs of urban life). However, the current urban norms in Peru have traditionally emphasized the material growth of cities, followed by the sustainability of the two-year period and personal safety in the event of disasters^[26].

On the other hand, sustainable development means a very important change in the concept of sustainability, mainly ecological sustainability, and a framework that emphasizes the economic and social context of development.

It should be noted that sustainable development is understood as a comprehensive and multi-sectoral process of change aimed at increasing the benefits of economic development, promoting social distribution, respecting cultural and ethnic identity, maintaining the services and quality of natural resources and territories, strengthening effective and transparent governance, and promoting

the democratic participation of civil society in this process^[27].

In this regard, sustainable development should be understood as a national, regional, or high-quality comprehensive, multisectoral, and positive process of change. Its goals and indicators involve eight basic components: the promotion of human values and rights, economic competitiveness, social equity, respect for cultural and ethnic diversity, territorial function, environmental sustainability, disaster risk management, and going Bernanza democratic^[9].

However, it must be recognized that there is no consensus in this regard, and there are different positions, interpretations, and nuances on sustainable development. Fernandez believes that the concept of sustainable development seems to be an internal reflection of the mainstream mode of production. While criticizing this mode of production, he also tries to analyze the feasibility of this capitalist mode of production in advance. In other words, this is a somewhat adaptive or realistic discourse that ultimately encourages the achievement of a minimum goal of urban quality of life on the basis of ensuring the possibility of restructuring the production methods of these basic standards^[5].

On the other hand, Fernandez^[5] quoted Allen and tried to summarize sustainable development as the connection field between social, economic, and ecological subsystems. Concept space of logical interaction of each subsystem:

- (1) Livability, social welfare goal, social subsystem
- (2) Fairness and efficiency are the goals of economic subsystem development.
- (3) Sustainability is the goal of reducing the ecological vulnerability of ecosystems.

From the perspective of critical ideology, Leff, quoted by Fernandez^[5], puts sustainable development in a dilemma. That is, the problem of sustainable development is the absolute economic restriction on the capitalist development of resources

under the condition of ecological rationality, or the opportunity for society to obtain natural products and have natural and technological means of production that ultimately determine the distribution of wealth.

In any case, the United Nations adopted the 2030 Agenda for Sustainable Development in 2015, which puts forward 17 goals, 169 of which are integrated and indivisible, covering the economic, social, and environmental fields. Including sustainable communities and cities. This strategy will guide the global and national development agenda to 2030. Countries are committed to developing public policies to implement these policies^[28].

In 2016, the United Nations adopted a new urban agenda at the International Conference on Housing and Sustainable Urban Development (Habitat III), reaffirming the global commitment to sustainable urban development^[8].

In Peru, sustainable development has been legal since 2002. In addition, the country is committed to implementing the 2030 United Nations agenda for sustainable development and the new urban agenda, which reaffirms the global commitment to sustainable urban development as a key step towards achieving sustainable development in an integrated and coordinated manner at the global, national, regional and local levels.

In addition, the El Niño Costello phenomenon in 2017 shows that Peru's territorial and urban planning is insufficient, urban development is chaotic, disaster risk areas are informally occupied, and land is illegally and informally trafficked^[29,30].

The comprehensive reconstruction plan, with changes approved by Supreme Decree No. 091-2017-pcm and amended by Supreme Decree No. 016-2018-pcm adopts the approach of sustainable urban development and emphasizes the risk management of climate change. Therefore, it will develop urban development plans in the main population centers in the affected areas as a key element of prevention.

Therefore, the emerging concept of sustainable urban development needs more detailed theoretical construction and operable application in urban planning. Because the wrong approach is often limited to correctly dealing with the interaction between urban development and the environment^[7].

In this regard, the European territorial strategy adopted by Member States and the European Commission in 1999 sets territorial goals for the city-centered EU. It sets out the goal of a balanced and polycentric urban system as a key component of European territorial cohesion^[31].

To this end, it has formulated models such as strengthening urban structure as a factor to improve the quality of life and economic competitiveness, giving different types of cities a role. Improve its accessibility and connectivity. And the adoption of sustainability standards in cities and their relationships with surrounding areas to reduce impacts and make natural and cultural heritage valuable^[8].

Therefore, in order to make cities the basis of an urban sustainable development strategy, it is necessary to combine the quality of life and economic vitality through better distribution and combating exclusion. Optimize the relationship with surrounding areas to reduce their impact or ecological footprint. Identify innovative models for urban governance, public-private participation, and cooperation in all institutional areas. All existing political, legislative, and financial instruments and measures affecting markets and behavior must be used^[8].

In this regard, it is necessary to make it clear that sustainable urban development should be understood as a comprehensive, multisectoral, and positive transformation process of the urban center, involving nine basic components, such as urban spatial complementarity, urban competitiveness, urban function, urban and landscape quality, environmental sustainability, customized risk management, urban social equity, identification of culture and urban governance^[9]:

(1) Urban spatial complementarity refers to the sum of production and function complementarity between urban centers and their affected areas. Reduce its ecological footprint in terms of resources, consumption, and emissions. And the interdependence between the different sizes and spaces of national, regional, and local territories.

(2) Urban competitiveness, such as the process of creating and disseminating capabilities and enabling physical, technological, social, environmental, and institutional environments in a city in order to take successful action at the international level to promote economic activities and provide a better quality of life for its residents and tourists. It is the ability of cities to act in a globalized world, promote business opportunities, attract investment, create jobs, provide goods and services required by the market with efficiency, scale, opportunity, quality, and good price, and provide a higher quality of life^[32].

(3) As the material spatial organization of economic, social, and administrative activities in the central area of the city, urban function promotes the rational and balanced use of urban land, so as to improve the functional efficiency and production efficiency of the city.

(4) Urban and landscape quality, such as the sum of the aesthetic and cultural characteristics of architecture, public space, urban green space, and their ecological environment, provides an attractive urban image for residents and tourists, provides people with an appropriate quality of life, and creates the best conditions for the competitiveness of the city.

(5) Environmental sustainability, such as the balanced management of the interaction between urban development and the environment, to ensure that the basic needs of the population in geographical space are met without destroying ecosystems and social habitats through the rational use of natural resources and the appropriate treatment of the environmental impact of the urban center.

(6) Disaster risk management, such as the process of assessing, preventing, and reducing risk factors, as well as the preparation, response, recovery, and reconstruction of disaster situations caused by natural and/or man-made events.

(7) Urban social equity, such as the welfare status of urban residents and inclusive access to land, housing, and basic services, as well as the appropriate distribution of the benefits and burdens of urban land use.

(8) Cultural identity, such as values, beliefs, customs, traditions, symbols, and behavior patterns of social groups, produces a sense of belonging to the urban center, territory, history, nation, and/or country. It is a key element of urban governance because it contributes to respect for laws, banking and environmental standards, and mutual respect among people in emergencies.

(9) Urban governance, such as institutional and social management in the process of urban development and transformation, strives to gradually correct the main problems affecting cities through effective agreements between the government and relevant economic, social, and institutional actors.

In this regard, the Peruvian Ministry of Housing, Construction, and Health defines sustainable urban development as a process of political and technological change in urban and rural population centers and their affected areas in order to provide a healthy environment for their residents, be culturally and physically attractive, develop effective economic activities, govern and compete, and implement disaster risk management with full respect for the environment and culture without compromising the ability of future generations to meet their needs.

Therefore, sustainable cities refer to cities that are functionally and economically combined with surrounding areas and are competitive in attracting investment and producing goods and services. Orderly and efficient operation, cultural and urban attraction, environmental health and resilience, and proper management of its environmental impact and

disaster safety. Equity and social inclusion are managed by wise and transparent management, participatory management, and citizen safety. All this is to provide residents and tourists with a better quality of life.

Sustainable cities also need to develop urban competitiveness strategies through regulatory and financial measures (economic incentives). Provision of equipment, services, and urban infrastructure (roads, airports, energy, public services, service centers). Promoting education, research, innovation, and technological development (new science or technology cities). And promoting urban governance, understood as generating collective will and building consensus to establish a new urban institution^[32].

Traditionally, urban design is a discipline that studies the creation, development, reform and progress of urban centers or cities, organizes or manages urban buildings and spaces, and formulates treatment suggestions to improve urban living conditions.

However, there are several problems in urban design. Functional urban design is a traditional discipline in the 20th century that is related to urban mechanical design. It aims to provide fitness and beauty services for urban centers and standardize the use of urban land. On the contrary, sustainable urban design should be understood as an emerging interdisciplinary field in the 21st century that is related to urban sustainability and aims to guide, seek, promote, and standardize the balanced combination of the nine basic components of sustainable urban development^[7].

In this regard, sustainable urban development planning should be understood as a technical, social, and political process, embodied in a technical policy and management tool called an urban development plan, which aims to predict, seek, promote, and standardize the balanced combination of the nine basic components of sustainable urban development^[7]:

(1) Urban regional complementarity is related to the implementation of sustainable land use and urban growth recommendations.

(2) Urban competitiveness refers to the implementation of plans to create and disseminate competitive advantages in cities and their affected areas, so as to attract investment, develop economic activities to create wealth and employment, and provide better quality of life for their residents. In the context of domestic, international and globalized world markets.

(3) Urban functions related to the implementation of urban zoning, sustainable urban mobility and urban equipment proposals.

(4) Urban and landscape quality, related to the implementation of maintenance, restoration or fitness recommendations for public space, memorial urban heritage, archaeological heritage and surrounding areas of the city. According to its entertainment, tourism, ecology, landscape and cultural potential.

(5) Environmental sustainability refers to the implementation of recommendations on the management, restoration and regulation of the natural environment and its construction by protecting the carrying capacity of the ecosystem, so as to reduce the ecological footprint and negative environmental sequence generated by the city.

(6) Disaster risk management is related to the estimation, prevention, and reduction of social disaster risk and appropriate disaster preparedness, response, and recovery.

(7) Urban social equity is related to the provision and improvement of basic services, access to land and housing programs, and recommendations for urban rehabilitation for the lower social strata of the city.

(8) Cultural identity is related to the implementation of road education, environmental education, disaster risk management, civic education, urban culture, reassessment of local cultural identity,

and cross-cultural programs.

(9) Urban governance is related to the implementation of institutional modernization proposals. Inter-agency consultation mechanism, citizen participation and citizen security. And monitoring and evaluation of urban and regional planning.

In this overall context, it is necessary to re plan and implement the sustainable urban development of Lima Callao megacity to commemorate the 20th anniversary of Peru's independence, the 15th anniversary of the establishment of the Spanish Lima Foundation and the first fiftieth anniversary of the 21st century.

Therefore, there is an urgent need to develop, adopt and gradually implement the following plans for the Megalopolis of Lima Callao, taking, inter alia, the 200th anniversary of Peru's independence in 2021, the 500th anniversary of the Spanish Lima foundation in 2035, and the second half of the 21st century in 2050 as the planning period^[33]:

Lima Callao sustainable urban development metropolis plan: In 2019–2022, Lima's current municipal management decided to formulate Lima's 2021–2040 metropolitan urban development plan, in which "part of Lima and Callao's 2035 metropolitan urban development plan will be used". However, Lima and Callao provinces are currently regarded as megacities with more than 10 million residents, which have a direct impact on Valar, Canta, Varokiri, and Kanet provinces. Therefore, a sustainable urban development plan for the Lima Callao megacity by 2050 needs to be formulated.

For this planning scope, it is necessary to determine the sustainable urban development vision of Lima Callao Megalopolis by 2050, including the basic components of the above nine sustainable urban developments. Therefore, we put forward the following suggestions^[33].

"Lima Callao is a modern metropolis with competitiveness in the global market. It is an international industrial, commercial, and service center

(urban competitiveness). The first airport hub in South America and the first port center in the South Pacific Basin. Latin American tourism, culture, and Food Center (city territory complementarity).

This is an orderly, pluralistic, and compact city with appropriate urban equipment that is composed of multimodal transport and an integrated system of sustainable urban mobility. An active national population center system and central coastal macro region (urban function).

Cities with urban and religious nature, with public space and attractive green space. There are historical centers, memorial areas, a cultural, urban, architectural, and archaeological heritage that is restored and valuable. Through the ecotourism and leisure regulation of its coast and river edge, as well as the landscape treatment of its ecological environment (urban and landscape quality).

Sustainable and healthy cities, through rational use of their resources and proper management of their environmental impact (Ambien sustainability), it is a safe and resilient cities because they carefully manage dess-3 risks, protect their lifeline, and reduce the vulnerability of their key areas (dess-3 risk management).

A socially inclusive population, an acceptable level of basic housing and services, and a successful urban renewal process (urban social equity). Cultural diversity and cross-cultural expression express the theme of Peruvian cultural identity.

The planning and governance of urban centers, their wise and transparent urban management, the participation of their organized and capable population, and the safety of their citizens (Urban Governance). All these are to provide residents and tourists with a better quality of life.

(1) Master plan of Lima Historical Center: The current municipal management of Lima passed Lima Decree No. 2194-2019 in 2019-2022, approving the master plan of Lima Historical Center from 2029 to 2035, including a single management regu-

lation, noting that “these two normative technical documents are aimed at promoting the comprehensive, sustainable and human recovery of this important part of the capital.”

(2) Lima Callao Green Coast Sustainable Development Master Plan: The 1995–2010 Lima development master plan was approved by the Costavid project management authority through agreement No. 79-1995-apcv. Lima Decree No. 998-2007-mml approved the new City Vision of Costavid 2007, which irregularly partially abolished the 1995 Costavid master plan. The 2009–2025 green coast structure plan approved under agreement No. 911-2009-apcv is an urban plan that does not derogate from the previous green coast standards. In this regard, it is necessary to formulate a new master plan for the sustainable urban development of Lima Callao’s green coast by 2050, so as to overcome the policy gaps on the coastal axis and consolidate it into a public space for ecotourism, leisure, sports and culture at the metropolitan level.

(3) The sustainable urban development plan of Callao province is stipulated in the Constitution: In 1993-1995, the municipal government adopted Decree No. 018-1995, approving the main urban plan of Callao province stipulated in the 1995–2010 constitution. In 2015–2018, the management of the municipality passed Callao City regulation No. 023-2018, which updated the urban development plan of Callao province for 2011–2022 stipulated in the constitution. Therefore, it is necessary to formulate a new sustainable urban development plan for Callao province stipulated in the Constitution by 2050.

(4) Sustainable urban development plans by region: The regional urban development plan is a specific description of the forecasts and recommendations of the metropolitan plans of the districts of Lima province and the districts of Callao province stipulated in the constitution. In particular, urban zoning and sustainable urban mobility at the regional level.

(5) Sustainable urban multimodal transport

system: Decree No. 30900 established the urban transport authority of Lima because Lima Callao Megalopolis needs a unified authority with political decision-making and technical capacity to make coordinated decisions and implement actions on the basis of specialized courses and research. However, the goal of ATU should not be limited to the implementation of an integrated transposition system, but to gradually build and implement a sustainable urban metropolitan multimodal transport theme SIS^[30,34,35].

(6) Considering the 200th anniversary of Peru's independence in 2021, there is also an urgent need to immediately implement and complete the strategic priorities of sustainable urban development in a timely manner.

In short, given that 2019 is a year of change for regional and local authorities and 2020 is a year for the formulation and approval of plans, the current municipalities must clearly recognize that the urban development of Lima and Callao cannot be subject to technological improvisation, political taxation, real estate speculation, land transactions or the genius of Mayors.

This overall context should provide an opportunity to re-establish the institutional image and the role of the Metropolitan Planning Institute in guiding and standardizing sustainable urban development planning. In order to reverse the decline of urban planning in Lima and Callao since 1996, it will not become a failed cause, but a potential challenge required by the country's most important urban areas to commemorate the 20th anniversary of Peru's independence, the 15th anniversary of the establishment of the Spanish Lima Foundation and the 50th anniversary of the 21st century^[4].

All these are carried out within the framework of the 2030 agenda for sustainable development, the new urban agenda, and the changing reconstruction plan in the context of the design, implementation, monitoring, and evaluation of Peru's public policy for sustainable urban development. In addition, this national public policy should be achieved at the

local level through the development and implementation of plans for sustainable land use, sustainable urban development, sustainable urban mobility, environmental action, and disaster risk management. There is an understanding that if we accept the challenge of gradually transforming these cities into sustainable cities, the future of national development will be determined in our cities^[2,36,37].

Finally, perhaps we can find the impetus needed to continue to deal with urban planning and sustainable urban development in some of the Beatles' songs:

"He is a real ubiquitous person, settling in his ubiquitous land and making plans for anywhere and anyone. He doesn't know where he's going, people everywhere, listen"^[38-42].

"When the skeptics of the world (and the city) agree, there will be an answer to make it a reality. Even if they live with differences, there is always hope for them to see, for them to see"^[43-46].

"You can say I'm a dreamer, but I'm not the only one. I hope one day you can join us, and the world (and cities) will live in unity"^[47].

Conflict of interest

The author declares no conflict of interest.

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