Urban challenges in the 21st Century

Social capital and innovation as key factors for implementing integrated development approaches

Urban 20 White Paper

A CIPPEC White Paper for the Urban 20 (U20)

U20
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Authored by: CIPPEC

About Urban 20

Urban 20 (U20) is a new city diplomacy initiative developed under the leadership of Horacio Rodríguez Larreta, Mayor of the City of Buenos Aires and Anne Hidalgo, Mayor of Paris and Chair of C40 Cities Climate Leadership Group (C40). Launched on December 12, 2017 at the One Planet Summit in Paris, the initiative is chaired by the cities of Buenos Aires and Paris, and convened by C40, in collaboration with United Cities and Local Governments (UCLG).

What U20 seeks, is to highlight the expertise of cities in a range of global development challenges and to raise the profile of urban issues within the G20. U20 will offer solutions and clear recommendations to national leaders for their consideration ahead of the 2018 G20 Summit. The first year of the U20 initiative will culminate in the inaugural U20 Mayors Summit in Buenos Aires, October 29-30. With this event, U20 will remain a stepping stone toward ensuring an ongoing dialogue between cities and the G20.

In 2018, 26 cities have participated in Urban 20: Barcelona, Beijing, Berlin, City of Buenos Aires, Chicago, Durban, Hamburg, Houston, Jakarta, Johannesburg, London, Los Angeles, Madrid, Mexico City, Milan, Montreal, Moscow, New York, Paris, Rio de Janeiro, Rome, São Paulo, Seoul, Sydney, Tokyo, and Tshwane.

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About the White Papers

Urban 20 is proud to present a series of White Papers from our Strategic and Advisory Partners that highlight the most relevant topics on the cities development agenda and the forthcoming urban trends. These papers define the challenges that local governments are currently facing and offer open recommendations supported by relevant, up-to-date research and data. The intention of this work is to broaden the understanding and perspective of decision makers and stakeholders as to enhance their ability to tackle these most pressing issues. The White Papers also represent the hard work and dedication of these agencies and organizations to keep the public well informed about the ongoing efforts to address the present and future challenges we share as humankind.

Image: Orbon Alija

Urban Challenges in the 21st Century: Social capital and innovation as key factors for implementing integrated development approaches is a White Paper prepared by the Center for the Implementation of Public Policies Promoting Equity and Growth (CIPPEC).

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CIPPEC

CIPPEC is an independent nonprofit organization that works on better building public policies.
We promote policies that would make Argentina more developed, more equal, with the same opportunities for all and solid and efficient public institutions. We want a fair, democratic and inclusive society, where everyone has the possibility to grow.

Contents

The views, opinions, positions and recommendations expressed in this White Paper are solely those of the individuals and their organisations. They do not necessarily reflect those of Urban 20 or any of its chairs, conveners, partners and participating cities.

Executive summary

Key drivers and centers of change, cities will either overcome or succumb to today's pressing global challenges. In highlighting the critical role cities play in achieving global objectives, former UN Secretary General Ban Ki Moon once observed, "Our struggle for global sustainability will be won or lost in cities." Challenges stemming from urban expansion, mobility, access to basic services, historical preservation, sustainable resources, employment, and the effects of climate change underscore the complex systems of cities. Tackling these challenges thus requires a comprehensive and innovative approach to development, one that transforms outdated and less effective practices in urban planning.

A new Comprehensive Development of Cities Approach (CDCA) is proposed with the aim to empower the ecosystem of social actors and promote the sustainable development of cities. This approach provides decision-makers with a comprehensive long-term urban development agenda based on qualitative and quantitative data rooted in territorial analysis. This approach also seeks to generate knowledge, participation, and a shared vision of solutions.

In line with multilateral agreements, such as the New Urban Agenda, the Sustainable Development Goals, and the Paris Agreement, promoting and enhancing the role of local governments in decision-making is essential to the adoption of national strategies. The CDCA draws on the objectives included in these agreements by targeting four key areas for development: reducing inequalities, enhancing urban resilience, promoting inclusive digitalization and empowering metropolitan governance. In order to implement policies that focus on these areas of development, CIPPEC has launched a method called PlanificACCION (Planning & Action), which allows for the rapid identification of key challenges and goals followed by strategic projects that promote dialogue and consensus building while providing quick solutions for governments and their citizens. By facilitating participatory planning and building social capital among leaders and communities, PlanificACCION contributes to reframe the way we plan and act towards the comprehensive development of cities.

Glossary

Adaptation
The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate and its effects (IPCC, 2013).

Co-benefits
The positive effects that a policy or measure aimed at one objective might have on other objectives, irrespective of the net effect on overall social welfare. Co-benefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors. Co-benefits are also referred to as ancillary benefits (IPCC, 2013).

Comprehensive Development of Cities Approach
An approach that provides a framework for tackling urban planning in dynamic and changing cities. It provides quick solutions and also allows to incorporate long term goals.

Extreme weather event
An extreme weather event is an event that is rare at a particular place and time of year. Definitions of rare vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations. (IPCC, 2013).

Greenhouse Gases (GHG)
Greenhouse gases are those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds. This property causes the greenhouse effect of retaining heat within the atmosphere. (IPCC, 2013)

Mitigation (of climate change)
A human intervention to reduce the sources or enhance the sinks of greenhouse gases (GHGs) (IPCC, 2013).

PlanificACCION
CIPPEC's Comprehensive Development of Cities Approach method for urban planning that simultaneously targets planning and action by combining the use of participatory planning strategies and project co-creation.

Peri-urbanization
To express the urbanization of former rural areas on the fringe, both in a qualitative (e.g. diffusion of urban lifestyle) and in a quantitative (e.g. new residential zones) sense (UN-Habitat, 2016).

Resilience
The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change (IPCC, 2013).

Sustainable urbanization
As cities moved to the forefront of global socio-economic change, it came to be accepted that cities not only pose potential threats to sustainable development but also hold promising opportunities for social and economic advancement and for environmental improvements at local, national and global levels (UN-Habitat, 2016).

Urban agglomeration
The city proper along with the suburban fringe and any built-up, thickly settled areas lying outside of, but adjacent to, the city boundaries (UN-Habitat, 2016).

Vulnerability
The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt (IPCC, 2013).

Source: Laboratorio Urbano Digital (LUD)-CIPPEC based on Google Earth

1. Introduction

Urbanization is currently one of the most transformative trends in the world, not only due to those living in main urban centers and global megacities, but also to the concentration of economic activities and social and cultural interactions in the metropolis. We are facing a new urban paradigm, which contemplates a comprehensive vision on urban sustainable development, meet complex challenges such as climate change, inequality and eradication of poverty, in order to achieve more sustainable, diverse and compact cities. Such a model is essential for promoting a cohesive social life and a competitive economic base while simultaneously preserving natural resources.

The urban world is very different from that experienced some decades ago, when cities had to be rebuilt after the Second World War. In 1950, the world was mostly rural, and the figure bellow helps us understand where the urban population was located. Every dot represents a country, the size of it represents the amount of population, and its color the percentage of urban population vis a vis rural population.

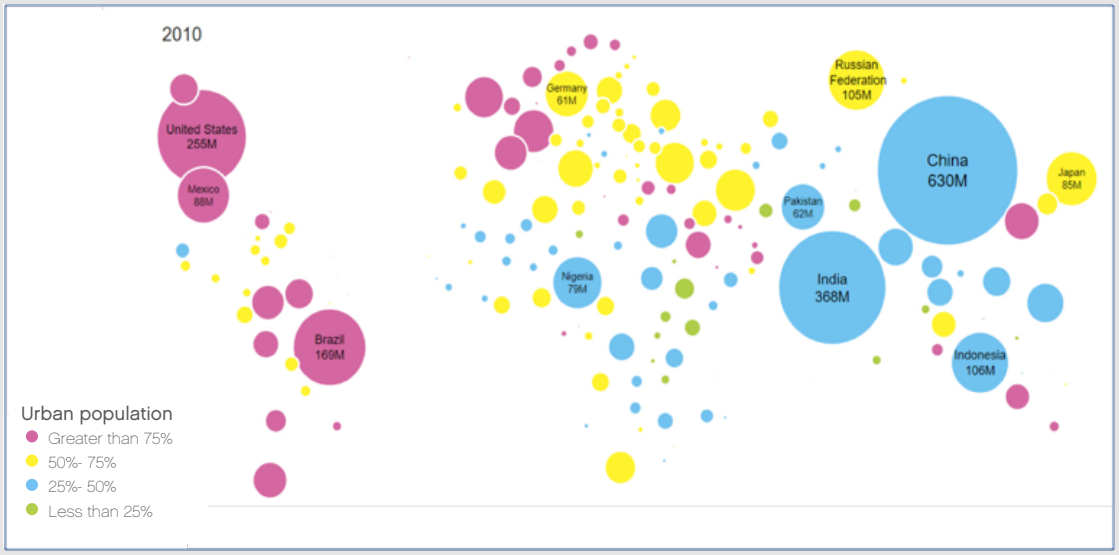
Figure 1. Urban Population in 1950. Source: UNICEF, 2012

By 1980, by the end of the cold war, cities experienced an increase in its urban population, reaching 38%. Although India and China lead the growth of its population, urban population percentage was still low in those countries in comparison to America and Europe.

Figure 2. Urban Population in 1980. Source: UNICEF, 2012

By 2010, the world had become mostly urban for the first time in history of human kind. North America, Latin America and the Caribbean showed the greatest proportions of urban population while Asian cities and some African agglomerations became a process of rapid urbanization.

Figure 3. Urban Population in 2010. Source: UNICEF, 2012



As the global population continues to grow, so too will the concentration of people in cities. Current estimates project that, by 2050, two-thirds of the global population will be urban. Moreover, it is expected that 90% of growth by 2050 will be concentrated in developing countries of Asia and Africa. So if this projection becomes true, the question is how are we expecting them to grow?

Figure 4. Urban Population Projection 2050. Source: UNICEF 2012

Urbanization has also left an ecological footprint. The pursuit of unlimited economic growth has led to an increasing and unsustainable over- consumption of natural resources: energy, fresh water, forests and marine habitats, clean air and rich soil at the global scale.

> "The ecological footprint from this overconsumption of energy and natural capital now exceeds the planet's biocapacity by nearly 50 per cent (UNISDR 2015)".

At the same time, regions and countries differ both in terms of the demands they place on the planet and in terms of their biocapacity. Many countries use more biocapacity than is available within their boundaries. While this is due in part to the importing of resources for economic activity, the use of the global commons as a dumping ground for carbon dioxide emissions has a greater environmental impact (Global-Footprint-Network 2010).

Today, 54% of the world's population lives in cities. Approximately 80% of global GDP is generated in urban agglomerations, where nearly two-thirds of the world's energy is consumed (UN-Habitat 2016). Both the global population and global carbon emissions rose from 1950-2005 by almost 500 percent (Mayr, et al. 2017). Despite covering less than 3% of the earth's surface, urban areas are estimated to be responsible for 70% of greenhouse gas (GHG) emissions (World Bank, 2015). At the same time, urban land cover is increasing at a rate faster than population growth. It is projected that between 2000 and 2030, urban land cover will have expanded by 56-310% (Mayr, et al. 2017).

Given these challenges, the current wave of urbanization presents the imperative to target climate change and promote sustainable urban planning since GHG emissions are linked to materials, urban energy usage, and waste (Colenbrander, et al. 2018). Urbanization is linked to the three dimensions of sustainable development, namely economic development, social development, and environmental protection (United Nations 2014).

> "Given that in the next 15 years we will build as much urbanized area as in the entire history of humanity (Lanfranchi and Contin 2017), accommodating the growth of cities with policies that target current challenges such as climate change is essential".

According to UN Habitat (2013), global population growth and per capita income go hand in hand: as countries become urbanized, the productivity of the nation, including its urban areas, grows proportionately, thereby improving living standards. Thus, urbanization also has a major impact on the world economy: currently, 46 of the world's 100 largest economies, measured by GDP, are located within metropolitan agglomerations, while 54 of these same 100 exist at the national level (Ortiz, 2015). Yet, notwithstanding impressive urban and economic growth, many cities fail in terms of social, economic, and environmental sustainability.

In this scenario, urgent questions deal with how we will face such challenges today and in the future. Such questions target equality and access to the city, emerging risks of climate change, traditional forms of urban management amid an increasing digitalization, and interjurisdictional coordination among large metropolitan agglomerates.

With respect to urban inequality, structural challenges present risks for a significant portion of the population. According to UN Habitat, approximately 1 billion people still lack access to clean and safe water, and more than 2.6 billion people do not have access to adequate sanitation facilities. In this context, more than 860 million people today live in informal settlements or villages. It is estimated that in 2030, 40% of the world's population will lack access to housing, infrastructure, and basic services (UN-HABITAT 2013).

> "Not only do cities contribute to climate change – both by generating economic activity and by promoting the consumption of goods – they also tend to suffer its consequences because climate change puts urban systems, such as energy, transport, and waste, and others, at risk".

At the same time cities are also highly vulnerable to natural disasters, including climate change. Globally, the number is increasing both in frequency and intensity: between 2003 and 2012 there were 4,000 such events, compared to 82 between 1901 and 1910 (UN-Habitat 2016). Natural disasters limit resilience, thereby diminishing the ability of a city's population to recover from these events (Mayr, et al. 2017). Moreover, estimates show that the global material cost of disasters from 1996 to 2005 amounted to 667 billion dollars (UN-Habitat 2016). In this context, in particular linked to climate change, targeting policies that lead to low-carbon and climate-resilient development in cities is essential. Such policies should focus on urban development that promotes compact, organized, efficient, and socially cohesive, metabolically efficient cities. The sustained increase in urban inequality and uneven growth exacerbate cities vulnerability to emerging threats of climate change. It is thus essential to recognize how urbanization and actions to address climate change are linked. Given that carrying out such policies

entails an integrative approach – institutionally, technically, and politically – it is essential to develop the capacity of governments to transcend jurisdictions and sectors in order to avoid getting lodged within a specific zone or sector (Gómez Álvarez and Lanfranchi 2017).

Likewise, the growing development of digitalization and Information and Communication Technologies (ICTs) could promote a paradigm shift in the processes of government and interaction with citizens. According to the ICT Development Index (2016), 95% of the world's population lives in areas covered by cell phone signals and 4 out of 10 people have internet connection. The arrival of new technologies and the generation of data are presented as a unique opportunity to favor the narrowing of the gap between citizenship and government. At the same time, they represent an important challenge and an opportunity for the modernization of the management of cities to include innovative public policies that incorporate citizens as protagonists of solutions in their community.

> "Thus, putting ICTs to use in various sectors of the economy, such as in business and the sharing economy, among others, promotes the reutilization and sharing of goods and services, and thereby contributing to the circular economy".

Finally, in the context of rapid urbanization, cities grow **beyond their original jurisdictional** boundaries in a process of urban expansion leading to regions comprised of cities or towns. This expansion beyond initial political-administrative boundaries demands that authorities of the jurisdictions involved - who often suffer budgetary, technical, and management restrictions vis-à-vis other authorities or jurisdictions - fulfill their functions as an interrelating whole. To meet the challenges of political-administrative and inter-sectoral governance, such authorities must rely on agreements and consensus that provide a stable decision-making framework (Klink 2005). Moreover, metropolitan governance is linked to economic productivity and the urban growth model: cities that have a metropolitan authority experience population density increases in consolidated urban areas, while those without such authorities tend to experience more expansive urban growth (Ahrend, et al. 2017).

> "These models of governance seek to recognize political and cultural diversity while contributing to more efficient and equitable territorial management".

2. Major challenges of Cities

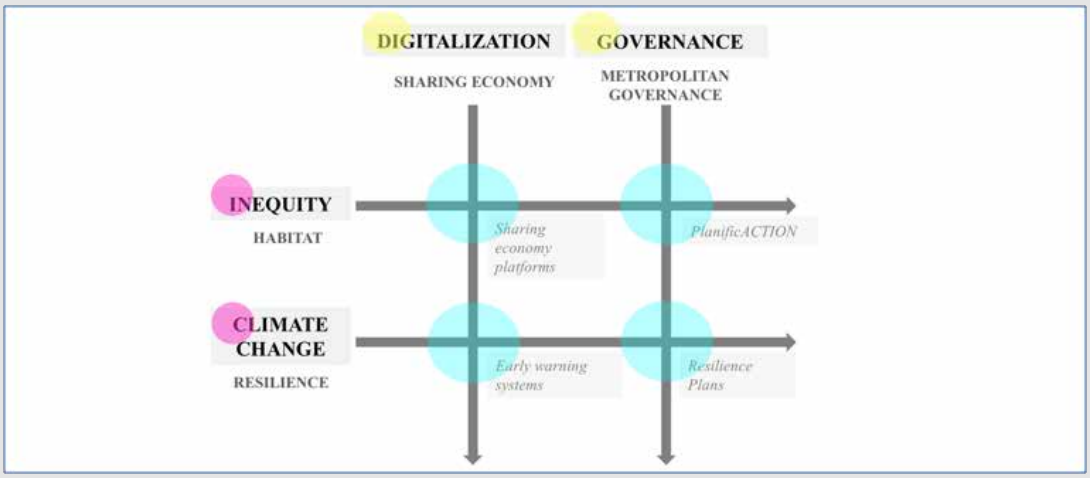
To achieve sustainable development entails radically transforming how we build and manage urban spaces. The New Urban Agenda (NAU), which was adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in 2016 in Quito, Ecuador finds that, faced with challenges stemming from unprecedented global urbanization, it is essential to resolve historical problems of poverty, inequality, and environmental degradation. The NAU is in accordance with the Sustainable Development Goals (SDG's) laid out in the 2030 Agenda and sets the guidelines for sustainable, diverse, and participatory cities that fulfill

their social role and respect gender equality. In doing so, the NAU affirms the important role that national governments have in establishing policies and passing legislation to promote comprehensive urban development – that is, planning that seeks to organize space to foster social equality, equity, and inclusion (UN-Habitat, 2016).

> "To achieve these goals, CIPPEC Cities Program proposes the Comprehensive Development of Cities Approach (CDCA) with the objective to influence the improvement of equity conditions, enhance processes that increase urban resilience, promote inclusive digitalization in urban management, and strengthen metropolitan governance (Figure 5)".

It is essential that these four interrelated dimensions be addressed wholly. Comprehensive development provides a framework for tackling the complexity of cities to achieve the most effective policy responses to the challenges of the 21st century in the short, medium, and long term. Below, each axis is described and case examples are presented that demonstrate how they are interrelated.

Figure 5. CIPPEC's Cities Program Comprehensive Development of Cities Approach (CDCA).



2.1 Inequity

Rapid urbanization is changing the social and spatial organization of cities across the globe. The growing number of people living in the main urban centers is reflected in the growing number of global megacities as well as in the concentration of economic, social, and cultural interactions that take place in these metropolises. The concentration of capital generates social and territorial inequalities (UNISDR 2015) representing an enormous challenge for urban development in terms of environmental sustainability, economic efficiency and social equality.

According to UNISDR (2015), most low and middle-income countries experiments highly unequal access to urban facilities, infrastructure, services and security lacking the capacities to plan and manage urban development in an appropriate and risk-sensitive way. Poorly planned urbanization exacerbates socioeconomic disparities. The report published by UN-Habitat in 2016 raises some of the structural problems that cities still face, one of which is related to deepening inequality: today 75% of cities have a higher income inequality than twenty years ago (UN-Habitat 2016). Faced with the growing difficulty of gaining access to housing, existing informal settlements continue to grow while new ones appear, deepening socio-spatial exclusion and vulnerability. Estimates suggest that 40% of the world's urban expansion is taking place in slums (UN-Conference-on-Disaster-Risk-Reduction 2015). It is estimated that by 2030, urban growth will lead to 50% more global demand for water and 40% more global demand for energy, thereby generating more GHG emissions than those generated during the last century (UN-Habitat 2016). Urban population is highly exposed to the effects of natural hazards, which will likely be exacerbated by climate change. A well-planned urban development can prevent those risks by facilitating access to land and decent housing, providing infrastructure, basic services and collective facilities, as well as guaranteeing a healthy environment based on the sustainable use of natural resources. These challenges demand that the National government assume an important role in promoting policies that address them guiding urban growth along sustainable parameters. (UN-Conference-on-Disaster-Risk-Reduction 2015).

Source: Photo by Shyn on Flickr

When discussing habitat, we refer to a complex system where different dimensions related to urban-housing interact. These dimensions include the conditions that characterize life in cities, such as infrastructure and urban services, mobility, and the environment, among others.

Expansive patterns of urban growth, coupled with decreasing density in central areas, have increased the economic costs of urbanization, undermined mobility, and threatened ecosystem services and net primary productivity. In cities of developing countries, a 1% annual rate of decrease in density between 2000 and 2050 could lead to the quadrupling of the area of cities (UN-Habitat 2016).

Both the expansive phenomenon of cities and climate change are current challenges of cities that could exacerbate existent inequities, if they are not included in local development strategies and not all relevant actors of society are part of the strategy. Access to public services and infrastructure in cities that grow in disorder can also generate greater inequality, accentuating existing stratifications and perpetuating socioeconomic segregation (OECD 2015).

Facilitating access to land and decent housing, providing infrastructure, basic services and collective facilities, as well as guaranteeing a healthy environment based on the sustainable use of natural resources, are central issues on the cities' global agenda.

In this context, the international community has reached consensus on the aforementioned NAU, the SDG's and the Paris Agreement (PA)[1]. These agreements establish general guidelines directly linked to development and housing policies, target access to services and urban infrastructure and seek to mitigate the risks of climate change, among other issues.

SDG 11 outlines how to make cities inclusive, safe, resilient and sustainable. Even though only SDG 11 mentions explicitly cities, twelve of the 17 SDG's are to be implemented in urban areas (Gómez Álvarez and Lanfranchi 2017).

The NAU, on the other hand, is presented as a collective ideal as well as a political commitment for all levels of government and social actors involved in urban development. Notwithstanding, these guidelines are general in nature and leave the task of developing regulations and budgets to national governments. It's worth underscoring that, given their close ties with relevant social actors, local governments are key protagonists for the implementation of policies that promote social equity.

The PA raises expectations that all countries will do their best to enhance adaptive capacity and strengthen resilience (article 7), stressing the importance of averting, minimizing, and addressing loss and damage associated with the adverse effects of climate change (article 8). The agreement recognizes that some climate change impacts are beyond adaptation strategies. Thus, the PA reaffirms the Warsaw International Mechanism for Loss and Damage (decision 2/CP.19) as the main mechanism under the climate regime to address loss and damage associated with climate change impacts. It also made a big step by recognizing Loss and Damage as a standalone concept, setting the stage for a dialogue regarding its constituency, what the appropriate responses are, and who bears responsibility to act (Mogelgaard and McGray 2015).

Notwithstanding, these guidelines are general in nature and leave the task of developing regulations on minimum standards to national governments. It's worth underscoring that, given their close ties with relevant social actors, local governments are key actors for the design and implementation of policies that promote social equity.

Given their role in promoting economic and social development, as well as social equity, national governments should coordinate urban development strategies among different jurisdictions. In doing so, national authorities promote a comprehensive approach that includes multiple geographic levels in articulating housing policies, city services, infrastructure and urban systems (such as energy supply, transport, water, etc) with the aim of promoting equity. Urban development must be deployed in accordance with the human rights agenda.

> "Thus, a city model that is compact, sustainable, culturally diverse, and socially and politically participatory accomplishes those requirements (Lanfranchi et al., 2018)".

[1] Decision 1/CP.21 Adoption of the Paris Agreement.

Such model entails addressing structural factors that lead to urban segregation and unsustainable growth. The compact city mandate seeks to strengthen urban planning policies through instruments that regulate the land market, improve housing policies to include territorial and environmental management, incorporate the social function of property, and expand the forms of property ownership.

A comprehensive approach to habitat that links housing to urban services, transportation networks, and the environment, involves reorganizing institutions, including the distribution of resources and competencies, across different levels of government. In a world where climate change poses great challenges, urban development policies must be developed in accordance with low GHG emissions scenarios.

> "Therefore, cities should develop a scientific basis for shaping a coherent, low-carbon urbanization policy by integrating research results into the decision-making process, which should be based on participatory exchange between scientists, decision-makers and the urban population (Lanfranchi et al., 2018b)".

The reinforcement of local capacity-building is critical in times of rapid metropolitan transformations, which involves cross-jurisdictional functional issues and several local governments altogether.

2.2 Climate Change

Over the last few decades, evidence that the anthropic factor is affecting the climate system has grown, bringing climate change to the forefront of global challenges that must be addressed. According to experts, the optimum level for CO2 emissions in the atmosphere is below 350 ppm[2], but currently we are approaching to 400 ppm[3]. The atmosphere and oceans are warming, sea levels are rising, and weather patterns are changing (IPCC 2014). 2015, 2016 and 2017 were confirmed as the three warmest years on record, and climate-related impacts on development paths are already being observed in many countries (ECOSOC 2018). According to IPCC, urban agglomerations on nearly all continents will be exposed to a temperature rise greater than 1.5°C over pre-industrial levels by mid-century[4] (Revi, Satterthwaite, et al. 2014). The frequency of weather extreme events will also increase and it will raise the level of risk of morbidity and mortality (Rosenzweig and S 2015). It has also been observed that the number of natural disasters worldwide has increased both in frequency and in intensity: 4,000 between 2003 and 2012, compared to 82 in 1901-1910 (UN-Habitat 2016). Furthermore, the World Bank has predicted that the urban population exposed to cyclones will increase from 310 million to 680 million by 2050 (ECOSOC 2018). Such events increase the vulnerability of urban areas, thereby raising social and economic risks for these populations.

[2] ppm: parts per million.
[3] https://www.giss.nasa.gov/research/briefs/hansen_13/
[4] Using the RCP2.6 scenario: The Representative Concentration Pathways (RCPs) are used for making projections based factors such as population size, economic activity, lifestyle, energy use, land use patterns, etc., which at the same time condition GHG emissions. The RCPs include a stringent mitigation scenario (RCP2.6), two intermediate scenarios (RCP4.5 and RCP6.0) and one scenario with very high GHG emissions (RCP8.5) (IPCC,2014).

In this context, governments have agreed on a series of international measures that reflect the importance of climate resilience, defined by the IPCC (2014) as "the capacity of social, economic and environmental systems to face an event, trend or dangerous disturbance by responding or reorganizing in a way that maintains its essential function, its identity and its structure, while preserving the capacity for adaptation, learning and transformation." Thus, resilience refers to the ability of a community to resist and recover quickly from any plausible danger. Considering resilience in the face of crises not only implies reducing risks and avoiding catastrophic damages (such as human losses and harm to material goods), but also the ability to quickly return to the previous situation, or become even stronger.

The Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters (HFA, 2005) was the first plan to address climate resilience on an international level. This instrument was adopted by the states parties of the United Nations for to reduce risk of disasters, increase the resilience of the states by 2015, and dispute economic, social, and environmental losses and damages. In 2015, the issue of climate resilience was highlighted in new international agreements: the Sendai Framework for Disaster Risk Reduction 2015–2030 laid the ground for a risk-informed and resilient 2030 Agenda, the Addis Ababa Action Agenda (2015) built a framework for mobilizing resources for sustainable development and better preparation for risks. The PA also establishes commitments to reduce climate vulnerability through adaptation, incorporating the concept of loss and damage. The NUA reinforced country Parties' commitment to addressing multiple risks and building sustainable and resilient societies, with a special focus on the role of local communities and local capacities. Each agreement highlights the threat climate change impacts pose to the most vulnerable countries (ECOSOC 2018).

Climate resilience is also contemplated in the SDGs: Target 1.5 represents the core resilience target to improve "the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters". Resilience is also a central feature of target 13.1 in its aim to "strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries." Resilience further underpins several other Goals and targets (9.1 on infrastructure; 2.4 pertaining to hunger; 11.5 and 11.b on infrastructure and urbanization, among others (Bahadur, et al. 2015).

Referring to climate change mitigation, GHG emissions in cities are released mainly from activities such as construction of buildings and infrastructure (key component of urban areas), transport, consumption, and production-driving energy demand (Mayr, et al. 2017). Cities must prepare themselves to deal with the effects of climate change without losing sight of the development priorities of each of them and taking advantage of the co-benefits of the implementation of climate change mitigation actions. However, not all cities are prepared to face the challenges derived from the combination of urban growth and the threats of climate change. Therefore, it is necessary to involve local governments who are aware of the strengths and vulnerabilities of their local communities and relevant stakeholders involved for the implementation of a successful low emission urban development strategy (Lanfranchi et al., 2018).

It is necessary to review governmental schemes and foster comprehensive institutional approach to be addressed across the metropolis instead of territorial jurisdictions or thematic sectors (Gómez-Álvarez, et al. 2017). Cities must carry out infrastructural improvements, raise awareness, improve training and education, strengthen regulations, and develop information systems and early warning systems, among others. The leadership and participation of local governments, plays a vital role in making commitments toward mitigating the risks of climate change. Local and national governments must strengthen the resources that allow them to rethink cities in more efficient terms. Such terms improve management for the urban and spatial development.

Also, introducing the concept of urban metabolism, a smart city articulates viable pathways for transitioning from a dependence on non-renewable materials and energy to more resource

efficient and sustainable flows. Thus, urban metabolism is a concept that reflects a comprehensive understanding of flow of resources in and out: natural resources, construction and industrial materials production, consumption and lifecycle combined with biomass, electricity, CO2 production at a territorial level. (Lanfranchi et al., 2018b)

Taking into account that only around 40 % of the area expected to be urbanized by 2030 has been built (UNISDR 2015), urban planning plays a critical role in the global response to climate change. While experiencing rapid urbanization, building resilience that expands beyond sectoral and social divisions is paramount to address climate change impacts. According to the United Nations Office for Disaster Risk Reduction (UNISDR), $6 trillion a year will be invested globally in infrastructure by 2030, but almost $415 billion will be lost to disasters annually. A transition to low-carbon, climate-resilient cities requires investing more in urban infrastructure as well as shifting the resources are allocated in order to reduce climate related risks. Furthermore, cities should link their land use planning decisions to their climate action (Colenbrander, et al. 2018).

Finally, informed decision-making and risk assessments about hazards and vulnerabilities should be used in planning decisions regarding local development. The continuous systematization of information in platforms for Geographic Information Systems provide a means through which the nature and degree of risk of disasters can be determined.

Case Study Resilient AGBA (Greater Buenos Aires Metropolitan area)

Since late 2017, CIPPEC´s project "Resilient AGBA", comprising greater Buenos Aires metropolitan area is underway. The project's goal is to generate evidence and raise awareness about urban resilience in AGBA, identifying actors, plans, budget, and vulnerability to climate change. Therefore, the project developed an index for identifying degrees of structural social vulnerability to climate change for AGBA. It also uncovered tools and projects for mitigating the risks of climate change in the municipalities of AGBA. The project also seeks to raise awareness about climate change not only in me greater metropolitan area of Buenos Aires but for another Argentinean metropolitan areas and serve as a pilot case.

The UNISDR (2013), considers the following aspects for achieving resilience in a city: • The population resides in dwellings and neighborhoods that have adequate services and infrastructure that comply with reasonable building codes; • local government is inclusive, competent and responsible for ensuring sustainable urbanization; • local government allocates the necessary resources to develop response capacities that ensure the management and organization of the city before, during and after a danger materializes; • local authorities and the population understand their hazards and create a shared local information base on the losses associated with the occurrence of events, hazards and risks, including information about who is exposed and vulnerable to such risks; • people are empowered to participate, decide, and plan their city together with local authorities, valuing local knowledge, capacities and local resources; • measures are taken to anticipate disasters and mitigate their impact through the use of monitoring and early warning technologies to protect infrastructure, assets, and community members; • response and implementation of immediate recovery strategies and rapid restoration of basic services needed to resume social, institutional, and economic activity after a disaster; • the above points are also acknowledged as essential to developing greater resilience to other events, including climate change.

2.2.1 Early Warning Systems

An example of the interdependence of the aforementioned axes is the implementation of early warning systems. These systems monitor risks faced by cities and advance information that assists threatened communities in acting to reduce the loss of lives as well as material, social, and environmental damage. Participation and commitment of the entire community is fundamental if early warning systems are to work properly. Communities must identify their vulnerabilities, including the needs that different groups in society have based on their situation. This early diagnosis helps communities prepare for risks as well as recover losses. According to UNISDR (2015) forecasting in developed countries of tropical cyclones, storms, floods, droughts, tsunamis and other hazards has been greatly improved due to growing sophistication of monitoring. In low-income countries monitoring should be enhanced. Difficulties arisen are related to the maintenance of technical and institutional infrastructure. Communities levels of awareness and preparedness are still very despair.

Accurate, consistent and timely data on global trends in urbanization and city growth are critical for assessing current and future needs with respect to urban growth and for setting policy priorities to promote inclusive and equitable urban and rural development.

Key elements of an Early Warning Systems (EWS):

The objective is to empower communities threatened by hazards to act in sufficient time and in an appropriate manner to reduce the possibility of personal injury, loss of life and damage to property and the environment.

An effective early warning system comprises four inter-related elements:

1. Monitoring and Warning Service: operate on a scientific basis for predicting and forecasting hazards and providing a reliable forecasting and warning system that operates 24 hours a day.

2. Risk Knowledge: systematic collection and analysis of data and should consider the dynamic nature of hazards and vulnerabilities; assessment and risks maps;

3. Dissemination and Communication: warnings must reach those at risk. Clear messages containing simple, useful information are critical to enable proper responses that will help safeguard lives and livelihoods. Regional, national and community level communication systems must be pre-identified and appropriate authoritative voices established.

4. Response Capability: It is essential that communities understand their risks; respect the warning service and know how to react. Education and preparedness programmes play a key role. It is also essential that disaster management plans are in place, well practiced and tested.

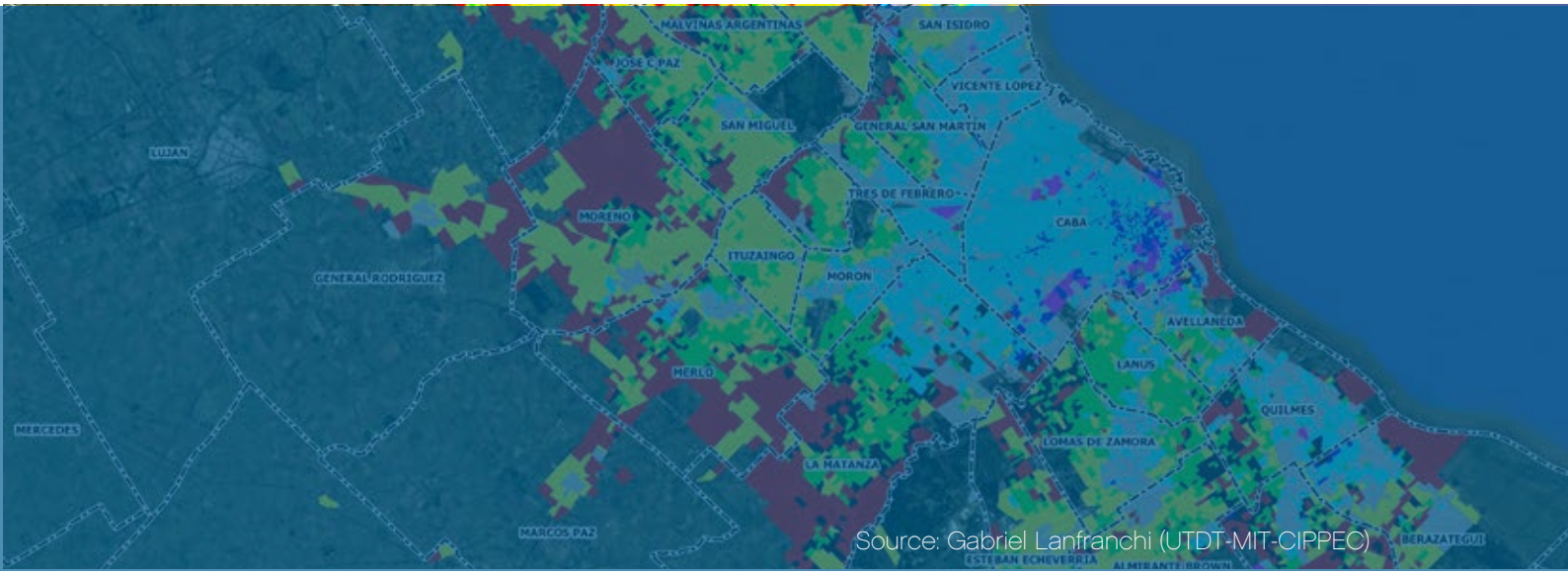
2.2.2 The Case of Cape Town, South Africa [5]

After a three-year drought, Cape Town's water supply is running dry and approaching to "Day Zero" in 2019. Government stated that the city is in danger to inevitably lose piped water to homes and businesses during 2019. The water crisis, due to physical, social, and political factors has revealed the need to take seriously into account the impacts of climate change not in the near future but today.

Cape Town Water crisis reveals the need to combine a series of political, social and economic factors adequately in order to achieve successful adaptation policies.

[5] http://www.eesi.org.

First, local government needs to gather scientific evidence. The decision-making process should be based on participatory exchange between scientists, decision-makers and the urban population. Given that the water supply policies must be agreed upon by the community, community awareness is critical. People also need to be informed about the implications of implementing such policies to avoid unanticipated consequences. To implement policies, adequate budgets that foresee the contingencies that could arise in the face of water-related threats are necessary. Relying on the national budget for local plans could hinder successful implementation given the administrative and political challenges that such budgets may entail. Early warning systems must be continuously monitored so that they meet the objective of informing the current state of the situation. Also, local government must anticipate the situation of the most vulnerable in the community. The government needs to work on instilling new habits. Continual awareness is important, even if it seems that risks are no longer imminent. Ultimately, strategies implemented must take into account the economic and social challenges arising from the crisis.



Source: Gabriel Lanfranchi (UTDT-MIT-CIPPEC)

2.3 Digitalization in cities

Competition due to the growing importance of technology in cities worldwide impacts local economic production, human capital, and innovation. To respond and adapt to this trend, cities must attract and generate capital necessary for creating innovative initiatives and paying for skilled labor (Moretti in Muzzini et al, 2017).

Current challenges that growing urban agglomerations -understood as complex systems- face, require a comprehensive approach to urban planning, namely, one that allows for agile decision-making and the participation of all actors in the system (Bouskela, et al. 2016). Digital technology applied to cities takes us to the smart city concept which requires the creative use of new information technologies, communication, and citizen participation.

> "The concept of smart city is not reduced to a purely technological issue, rather, it implies that each city is capable of taking advantage of its own resources and potential".

The smart city is the one that is developed in an integrative way. It understands its talents and it exploits interrelations across its ecosystem of actors. These actors include: companies, educational institutions, civil society organizations, and community in general playing the government a leading role. This interrelation brings demands, needs, and priorities into sharp relief, promoting innovation and the production of capital.

A smart city deals with the environmental and social risks of climate change. With respect to economic development, not only should cities strive to be productive, they should also redistribute wealth, thereby reducing economic inequality and social inequity.

> "Smart cities' decision-making and planning involves relevant stakeholders, takes advantage of technology to improve the capacity and quality of public management processes, promotes citizen participation, and provides a forum for integrating values of dialogue and innovation".

Smart cities promote open government and analyze information in real time as they seek efficient solutions to current and future problems. Ninety per cent of the data in the world today has been created in the last two years[6]. It comes from many sources such as shopper information, social media, digital pictures or videos, cell phones, GPS; it comprises any type of data in any format: this is big data. The ability to analyze large volumes of data to understand urban phenomena, emerges as a key challenge for the development of smart cities. Likewise, big data analysis can be applied to better understand the risks of climate change and also to develop collaborative economies that foster social, environmental, and economic development.

On the other hand, given the complexity of the urban system and the diverse dimensions with which it interacts and that impact it, a smart city also entails an analysis of the interdependence of their impacts. Although technological advances, including sensors and devices that generate information, do not make a city smart, per se, they do aid in the analysis of impacts that have occurred in a given area since their installation. In addition, to offer better responses to citizenship, it becomes possible to identify the measures that can be triggered from each subsystem.

Smart urban planning (SUP) seeks to respond to the challenges people living in the city face, with the goal of improving their quality of life and build an urban space that allows for social growth and transformation. In line with this, governments should boost the creation of a Digital Identity and genetic map for each citizen to enable them to access to governmental policies and services. A Digital Identity together with Artificial Intelligence, Machine Learning and Deep Learning will enhance citizen participation, education, development and health policies. Although it is not the only solution, the SUP offers a participatory and sustainable approach to responding to different local contexts of a community enhancing the communication channels among it and the local government.

[6] https://www.ibm.com/blogs/insights-on-business/consumer-products/2-5-quintillion-bytes-of-data-created-every-day-how-does-cpg-retail-manage-it/

2.3.1 Sharing economy

The sharing economy refers to organized interactions in which individuals or entities exchange with others the untapped "surplus" or "idle" capacity of their assets, typically for some type of payment or service (World Economic Forum 2017). Such exchanges grow out of technological advances and can lead to unprecedented economic growth that drives social, environmental, and economic development. Moreover, the sharing economy promotes the development of integrative urban planning through the incorporation of models for collaborative economy that strengthen the capacity of local leaders from various sectors linked to regional planning and urban governance.

The introduction of technology in cities facilitates collaborative dynamics, which are the base for a sharing economy. From a social perspective, the sharing economy promotes a sense of community among stakeholders. Sharing-economy platforms have experienced rapid growth. According to a global survey in 2016, platform companies have a total market value of $4.3 trillion and directly employ 1.3 million people (World Economic Forum 2017). The sharing economy has entered nearly all urban spheres.

The use of Information and Communication Technologies (ICTs) helps cities employ such business models by converting traditional urban development strategies into integral management models where TICs promote equitable as well as socially and environmentally sustainable cities.

To develop collaborative cities, local and regional governments should:

- Promote exchange of ideas between urban and metropolitan leaders to analyze the benefits and public innovation of the use of TICs for city management.
- Improve knowledge regarding technological solutions for the efficient use of urban resources,
- Promote good government and citizen interaction.
- Promote comprehensive urban management by linking the use of ICTs with the public policy agenda of cities, particularly with issues of habitat and urban resilience.
- Analyze the challenges that cities face in order to achieve comprehensive development
- Identify solutions that can be achieved through the implementation of sharing economy models.
- Support municipal governments and public and private entities in the development of regulatory frameworks and public policies that promote the sharing economy.

2.4 Multi-level governance

Currently, we are facing a remarkable expansion of cities, being inequality and climate change great challenges for our communities. It remains very difficult to solve these problems at the local level without improving metropolitan governance, as neither climate change or poverty respects jurisdictional boundaries between municipalities (Lanfranchi and Contin 2017).

> "Metropolitan governance is determined by the nature of the governance structures with relation to the levels of fragmentation or consolidation, the degree and level of control over urban functions, and the degree of formality or informality in the coordination of metropolitan area units (Gómez-Álvarez, et al. 2017)".

Where a lack of urban planning has led urban agglomerates to expand past their original territorial and jurisdictional limits, strategies that promote coordination across regions, institutions, and policies themselves are essential. Daily interactions across these cities require measures at the metropolitan level to reduce inequality, increase resilience and strengthen their social capital. Metropolitanism is therefore understood as a knowledge capability: the ability to give a comprehensive, transversal response (and not a sectoral one) to the problems related to managing large metropolitan areas (Lanfranchi and Contin 2017).

Metropolitan governance should not only involve a committee of local governments, but also urban and peri-urban inhabitants. Citizen participation needs to be re-invented within metropolitan governance schemes. New information and communication technologies present an opportunity to improve citizen engagement and participation in these "meso" or intermediate governance instances that are emerging between local and regional authorities (Gómez Álvarez and Lanfranchi 2017).

Even though 85% of urban agglomerations above 100,000 inhabitants are already metropolitan (UN-Habitat 2016) such metropolitan approaches are unusual. The challenge of finding the adequate, or tailored model of metropolitan governance for each area is hindered by old rules, political inertia, and traps in path dependency. A new framework needs to be developed in order to understand the metro gaps (Lanfranchi, 2015). Also, to be responsive to global threats such as climate change requires changing the rules of the game by rethinking the institutional arrangements (Gómez Álvarez and Lanfranchi 2017). Effective metropolitan governance can improve the productivity of agglomerates, or at least mitigate the loss of productivity caused by administrative fragmentation by up to 50% (OECD 2015). Of the 64 most populous agglomerates in Latin America, 50% have some instance of metropolitan governance (G. Lanfranchi 2017).

Some national constitutions do not consider metropolitan governments as they tend to organize governance schemes in local, regional (provinces, states, or departments), and national levels. Citizen participation needs to be reinvented within metropolitan governance schemes as does the relationship between local governments and entrepreneurs and the business community at large (Buchoud, et al. 2017). Increasing social participation and collecting feedback from residents and community members leverages local knowledge useful for development planning. This can also help to ensure that development plans address local needs and residents' concerns. At the same time, it has a great potential to create legitimate, effective response strategies. Also, new information and communication technologies present an opportunity to improve citizen engagement and participation in the intermediate governance instances that are emerging between local and regional authorities (Gómez Álvarez and Lanfranchi 2017).

Moreover, many cities are beginning to develop metropolitan governance bodies by applying integral development approaches (Lanfranchi and Contin 2017), which work mainly on regional

development, transport and spatial planning. In this context, countries should consider how much policy coordination can the metropolitan governance body achieve; what budget and staff does the metropolitan governance body have; and to what extent do citizens understand the metropolitan governance body.

Nevertheless, the creation of new metropolitan entities does not mean to take away functions from the municipalities or the national government, but to complement them: improving efficiency and equity in the performance of metropolitan resilience projects (Lanfranchi and Bidart 2016). It is critical to overcome the silo thinking by bearing in mind the interdependence of modern urban infrastructure systems, such as energy, transport, telecommunications water, etc. across all discipline layers in an integrated manner to get multiple benefits.

2.4.1 PlanificACCION – Planning in action

CIPPEC's Comprehensive Development of Cities Approach promotes planning for action by prioritizing work with social actors whose proposals are rooted in evidence.

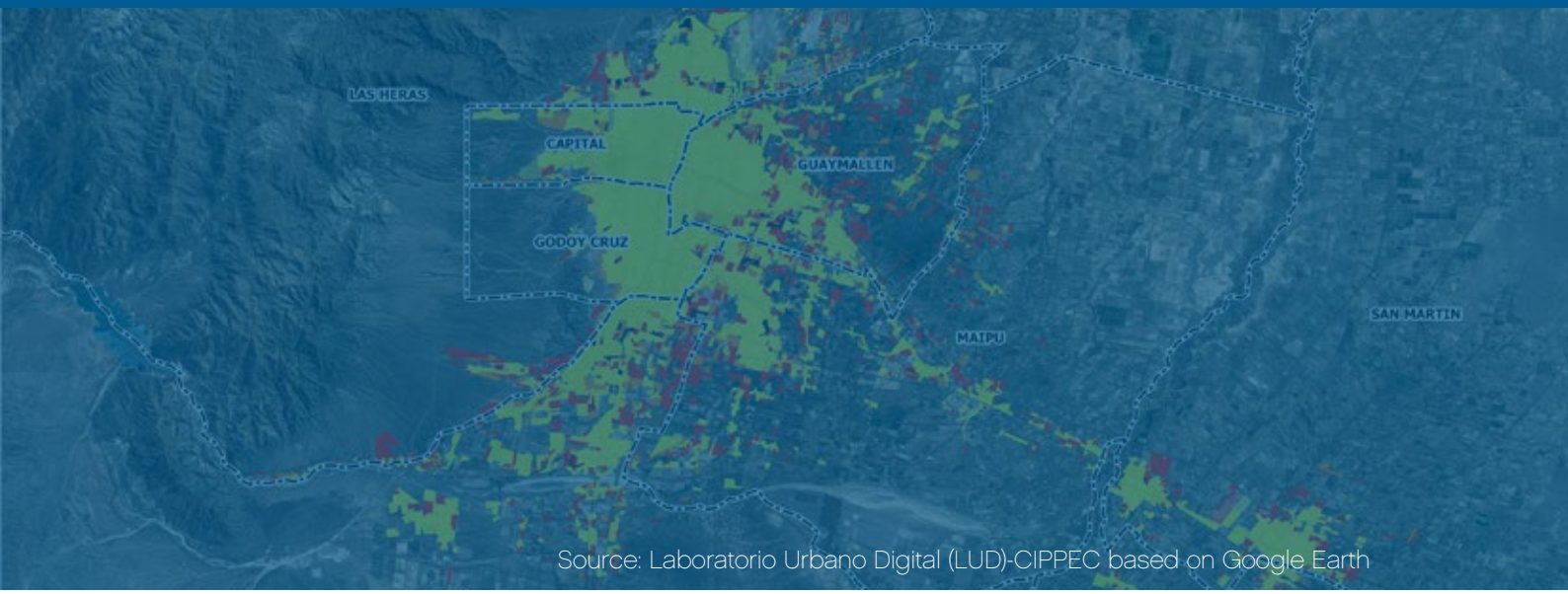
> "The methodology, called PlanificACCION[7], simultaneously targets planning and action to address a double challenge: on the one hand, it seeks to contribute to the general definition and direction of the planning and development of cities, while on the other, it plays an essential role, together with other social and community forces, in the evolution of the city by taking action".

PlanificACCION also combines the use of participatory management strategies and design thinking throughout the methodological process. These strategies include sharing information with stakeholders, collaborating over desired outcomes, and coordinating participatory workshops.

The principal limitations of traditional approaches to urban planning arise from difficulties in implementing the proposed policy interventions that these planning processes target. A typical planning model dedicates 60% of the total time allotted to the diagnostic process, during which time recommendations for projects and interventions are developed. The next stage absorbs around 30% of the total time allotted in the development of strategies around different scenarios. These strategies then lead to a series of programs and policy interventions, leaving only 10% of the planning process to implementation by the executive branch. In most cases, financing is obtained for the implementation of just one or two projects and within the span of two years the other proposed projects have still not been unimplemented. These challenges are a consequence of a lack of coordination between intervening actors, a lack of information, difficulties in obtaining the economic resources necessary for implementation, and difficulties arising out of short-term governance.

In this context, the strategy proposed by the Cities Program at CIPPEC promotes the development of cities through the implementation of concrete policy interventions in the short and medium term that seek to overcome the traditional challenges of urban planning. The diagnostic process, carried out more swiftly, utilizes 25% of the total allotted time and leads directly

[7] PlanificACCIÓN: the union of two word in Spanish: planning (planificación) and action (acción).



Source: Laboratorio Urbano Digital (LUD)-CIPPEC based on Google Earth

to the implementation of two projects. These projects draw together leaders from the city or municipality, generating social capital and linkages between key urban actors across different sectors as they develop realistic solutions and strategies that lead to consensus among the stakeholders involved. In this scenario, around 50% of the time is invested in the development of programs. By empowering social actors, promoting coordination, and building consensus based on existing knowledge and skills, the planning process not only lends itself to immediate policy implementation, it also promotes long-range strategic planning and goals. The remaining 25% of the time is invested in the strategy development, and complementary programs and projects.

CIPPEC's planning methodology is made up of four stages: I. Diagnosis of the current situation based on interviews and surveys that uncover perceptions about risk, resilience, and governing capacity as well as the analysis of existing documentation and data on urban expansion and territorial growth; II. Selection of two priority projects that target the most relevant problems identified through the participation of local actors who contribute knowledge and resources to the planning process; III. Implementation of a well-defined project by local leaders convened to work together in groups; IV. Development by CIPPEC of a comprehensive development strategy for the agglomerate.

This methodology encourages the role of actors across the social ecosystem, favoring their empowerment as a key element for continuity and sustainability in public policies. The methodology hones the expertise of local leaders by drawing on participative management strategies and existing scholarly literature while also incorporating metrics developed by CIPPEC's Urban Digital Lab, the area of the Cities Program dedicated to systematic quantitative and qualitative data analysis. By allowing actors to contribute their point of view, prioritize goals, and build projects, Planning-in-Action promotes participation, sheds light on the local political context, and strengthens institutions by promoting legitimacy and trust among the public and the local leaders involved taking profit of the collective intelligence developed by its leaders.

Currently, CIPPEC's planning methodology is being implemented in five Argentine metropolitan areas that were selected through a contest with a criterion of regional representation: Puerto Madryn (Patagonia), the metropolitan area of Mendoza (Cuyo), the Great Catamarca (NOA), the area Metropolitan Resistance in the Northeast (NEA) and Córdoba (Center)[8].

Local experiences in the implementation of this methodology across heterogeneous Argentine cities highlights the importance of putting ideas into practice within the framework of local planning. The five cases analyzed show how local actors are willing to commit themselves, share their knowledge, and participate in public decision-making.

[8] This project is implemented with the support of MIF IADB and the National Ministry of Production.

Decalogue of CIPPEC Cities' Program

A Smart city:

1. Recognizes its talents and exploits interrelations across its ecosystem of actors.
2. Takes advantage of its natural resources to survive and optimizes their cycle.
3. Takes into account its main risks it faces and is prepares to manage them.
4. Generates wealth and redistributes it reducing social inequity and economic inequality. It also assures the universal access to basic services and public goods.
5. Plans its development and decisions-making by consensus among relevant stakeholders and in a participative way, based on evidence.
6. Takes advantage of new technology to modernize managements processes and seek solutions to current and future problems.
7. Offers high quality of life to its citizens, integrates values and promotes ongoing dialogue.
8. Promotes innovation and recognizes traditions.

3. Mechanisms to implement the Integral Development of Cities in a metropolitan context and in conditions of resilience to climate change

To promote effective metropolitan governance that meets today's global challenges it is essential to bolster technology and communication. To thrive, it is necessary to emphasize on the local implementation of the NUA, to empower the cities and, ultimately, to raise the profile of urban issues in the G20 agenda, enhancing the role of cities in the G20 process. The current challenges that cities are facing and the proposals to tackle them were developed under the T20 Climate Action & Infrastructure for Development Task Force (TF2)[9]. TF2 highlighted the need for empowering local governments in order to address those issues, having into account that cities are key actors for implementing the required actions. More than 80 researchers from all over the world participated in the discussions and forums of the TF2.

These challenges require a new approach to global governance that includes the commitments of national governments as well as the participation of subnational governments. The G20 is one of the main forums where these issues, along with comprehensive implementation, are addressed. However, to enhance local capacity for action, the voices of local governments need to be incorporated.

3.1 Implementation of the NUA

As national governments cope with urban expansion, it is essential that they promote policies for social equality and environmental sustainability. In developing countries, where cities are

[9] The Task Force was co-chaired by Gabriel Lanfranchi (CIPPEC), Amar Bhattacharya (Brookings Institution), Ottmar Edenhofer (MCC), Naoyuki Yoshino (ADBI) and Mariano Gendra (CARI).

expected to grow more considerably by 2050, specially in Asia and Africa –as mentioned before-, it is critical that national and local governments work together over guidelines proposed in the NUA in order to create a framework for implementing those guidelines on a local level, within cities' comprehensive urban strategy.

While the NUA provides an approach for development planning in cities, it does not stipulate technical, technological, regulatory, economic, financial, organizational, institutional or educational instruments necessary for achieving the objectives established in it. Access to decent housing, basic services, and climate-resilient infrastructure are essential if societies are willing to address social inequality. Social fragmentation and unequal access to services are exacerbated by unplanned sprawl urban expansion. To address these challenges, national governments should decide on minimum standards so that local governments have the resources they need to address the NUA goals. Moreover, a shift to a new urban paradigm should be fostered in order to promote a new ecologically-based urban model to achieve sustainable urban development: compact in its morphology, complex in its organization, metabolically efficient and socially cohesive.

The compact city model targets sustainability in the digital age. Cities offer an extraordinary opportunity to implement cleaner energy and transport systems as well as refurbish and create new climate-resilient infrastructure. Complexity of cities need to be account to promote a cohesive social life and competitive economic productivity. It also promotes the preservation of agricultural and natural systems by conserving soil, energy, and material resources.

Finally, the co-benefits from policies rooted in the NAU include greater efficiency of resources if we apply an urban metabolism approach. These benefits are reflected in the reduction of greenhouse gases and the mitigation of risks to climatic change.

3.2 Empowerment of Cities: their role in the implementation of the Paris Agreement and the SDGs

Cities are key actors in advancing the achievement of the goals laid out in the SDGs and PA, which establish general objectives on which national, sub-national and local development strategies should be built. To this end, greater coordination is needed between local governments and national governments to meet the commitments made at the international level. Cities are mainly responsible for implementing policies to honor those commitments. In this sense, national low GHG emission strategies will not be successful if local governments are not part of their design and implementation.

> "Climate-city-focused initiatives are a strong signal of the critical role cities play to address climate change. Given relentless urban expansion, and the investment in infrastructure that this entails, local actors are critical for designing these strategies".

Notwithstanding, funding necessary for achieving these objectives remains a challenge. Marshalling adequate resources is a key component in urban development that deserves special attention. Six hundred cities generated 60% of global GDP in 2007 (Seto, et al. 2014); However, they do not have the financial return they need to address the urban challenges of the 21st century (Rueda 2018a). The lack of adequate financing hinders investment in low carbon and climate-resilient infrastructure.

Local budgets are crucial to building local government capacity and facilitating access to different sources of funding. Multi-sectoral measures that are comprehensive and include long-term urban development plans are more likely to be approved by financing entities. Not only are such measures more likely to attract private investment, they may also result in public funding that raises contributions from other public or private stakeholders.

> "SDGs targets and Nationally Determined Contributions (NDCs) can only be succesfully achieved if they are implemented in cooperation with local actors".

The role of cities in the international arena and in the decision-making process must be elevated if issues of global consensus such as climate change are to be implemented successfully. A new model of government, one where cities assume a role consistent with their contributions and vulnerabilities, is required (Rueda, 2018b). Failing to involve local communities could hinder the efforts of national governments to create more sustainable and resilient societies.

According to Hale (2016) climate actions by non-state and sub-national actors are increasingly recognized under the United Nations Framework Convention on Climate Change (UNFCCC) (Chan, Ellinger and Widerberg 2018). The participation of subnational actors as well as civil society organizations, companies, among others, has been increasing throughout the past 10 years. Particularly, during COP 21 there was an increase in participation and attention in the international climate regime (Hale 2016). The decision adopted by the PA "welcomes the efforts of all non-stakeholders to address and respond to climate change, including those of civil society, the private sector, financial institutions, cities and other subnational authorities (1/ CP.21)".

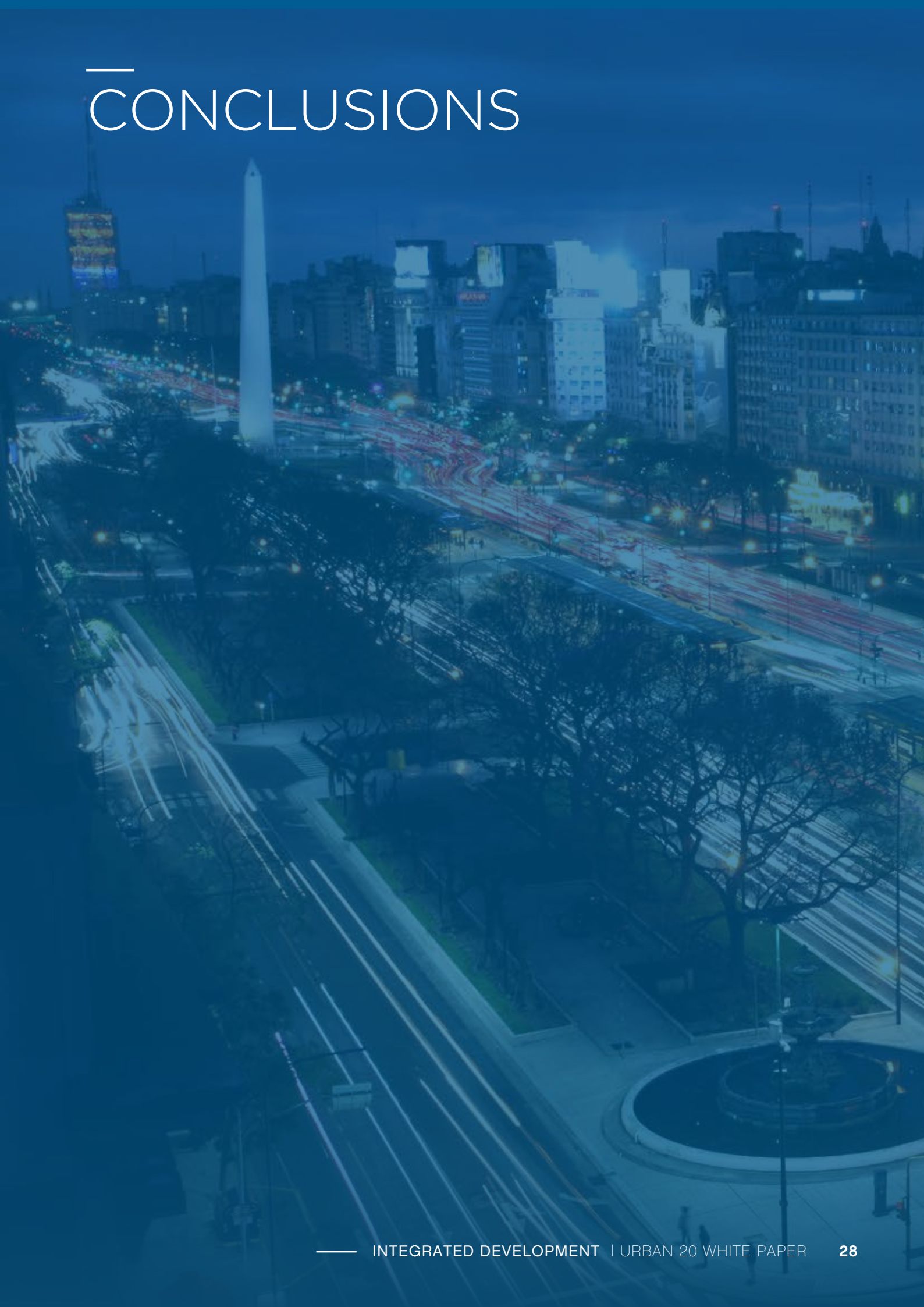
SDG's and PA Agendas need to be implemented in an integrated manner (Brandi 2018). It is clear that the achievement of one Agenda depends on the success of implementing the other one, as demonstrated by SDG 11: "Make cities and human settlements inclusive, safe, resilient and sustainable" (UN 2015).

3.3 G20: Mayors have a voice

In order to enrich the discussion related to this field in the G20, an urban related affinity group should be considered as formal engagement group in the G20 system. Cities are key non-state actors that play a relevant role in achieving international pledges related to issues such as climate change, sustainable development, and urbanization. A joint position developed by cities would address important achievements that will lead to inclusive, low-carbon, resilient cities. In its statement, the U20 affirms that cities should be part of the table in order to promote the positive impacts of "transformations generated by globalization, urbanization and digital innovation"[10]. The U20 statement also highlights the commitment of cities, for example, delivering ambitious climate-related strategies, to mitigate and adapt to climate change while driving economic growth, competitiveness, innovation and job creation (U20, 2018). The G20´s Development working group is also supporting urban relates issues by focusing in habitat and urban-rural linkages as one of their main priorities.

[10] U20 Joint Statement available at http://www.buenosaires.gob.ar/sites/gcaba/files/joint_statement_u20_english.pdf

CONCLUSIONS



An innovative approach is essential for managing the risks stemming from current patterns of social and spatial change in cities. Unplanned and irregular expansion, socio-spatial inequality, and climate change present greater and new risks for the more vulnerable sectors of society. Added to these challenges is the evolving role of citizens who, given their access to information and communication technologies, are becoming increasingly involved in urban politics and the production of urban space.

In the wake of multilateral agreements, such as the New Urban Agenda, the Sustainable Development Goals and the Paris Agreement, that set out guidelines for addressing these challenges, it is essential to promote and enhance the role of local governments in decision-making leading to the development of national strategies. Involvement on this scale reaches beyond the government sector to include all relevant actors in society.

The Comprehensive Development of Cities Approach presented provides a framework for tackling challenges that stem from dynamic and changing cities. Aimed at providing concrete and evidence-based proposals, the CDCA is designed to be applied to problems for quick solutions as well incorporate long-term goals. The CDCA is rooted in diagnostic work that integrates qualitative-quantitative methodologies geared toward territorial analysis. It promotes the involvement of the ecosystem of social actors, knowledge transfer, and consensus, making way for sustainable public policies.

Through the CDCA, the Cities Program seeks to overcome restrictions imposed by traditional management and planning of cities. While traditional models tend to be sectoral and system based, the CDCA empowers actors across sectors and levels of government to take advantage of the co-benefits of policy implementation. An essential part of this process is the participation of city leaders in the preparation of an agenda that includes the economic-productive, social, and environmental dimensions involved in the production of urban space. By empowering the ecosystem of social actors, the CDCA strengthens the capacity of leaders to promote public policies that extend beyond the term of local government.

It is essential to recognize, the role that local governments can play in achieving sustainable cities narrowing the gap between citizens and government, and empowering people as protagonists of positive change. This should be achieved by implementing sustainable urban development strategies aligned to the great challenges our societies currently faced.

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