Urbanization and Sustainability after the COVID-19 Pandemic

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Abstract

This article explores the current scenario of urban agglomerations, drawing attention to the growth of population and the process of unruled urbanization that endangers the delicate balance between human settlements and the surrounding environment. It focuses on the heritage values as fundamental elements for a correct urban development and highlights the impacts that metropolises and megacities have on climate change and the effects on them produced by COVID-19. It then looks at the role that minor cities and towns play and the coming opportunity to revamp them using new technologies and connectivity corridors and to mitigate urbanization. It concludes by observing how complex urban problems must be faced with a comprehensive vision that is driven by the social quality approach and an engagement with the BRICS countries.

Keywords: climate and pandemic impacts, connectivity corridors, heritage relevance, minor cities and towns, population growth, societal quality, uncontrolled urbanization.

This article aims to call attention to the urgent need to mitigate current urbanization processes and to what settlement models might look like in the future. It also considers the impact of the current corona-virus pandemic on large metropolitan agglomerations. Finally it examines the revitalization of minor cities and smaller settlements that have taken advantage of the opportunities represented by new technologies and large connectivity infrastructures.

First, I consider the exponential growth of the global population; the planetary population has doubled in the last 50 years, and has now reached 7.4 billion, and the forecasts for 2050 are for more than 70 percent of the world's population to be urbanized. In reality, 50 percent will be concentrated in urban areas and 25 percent will be living in slums or informal settlements (HABITAT III 2017). This problem requires a profound reflection on the urgent need to review the current model of urban development and the related uncontrolled urbanization processes, which have experienced exponential growth in recent decades. The inhabitants of cities in 2030 will represent, with 4 billion, some 60 percent of the global population.

This rising trend is especially visible in emerging countries with the greatest number of metropolises and megacities. It is also visible overall in uncontrolled

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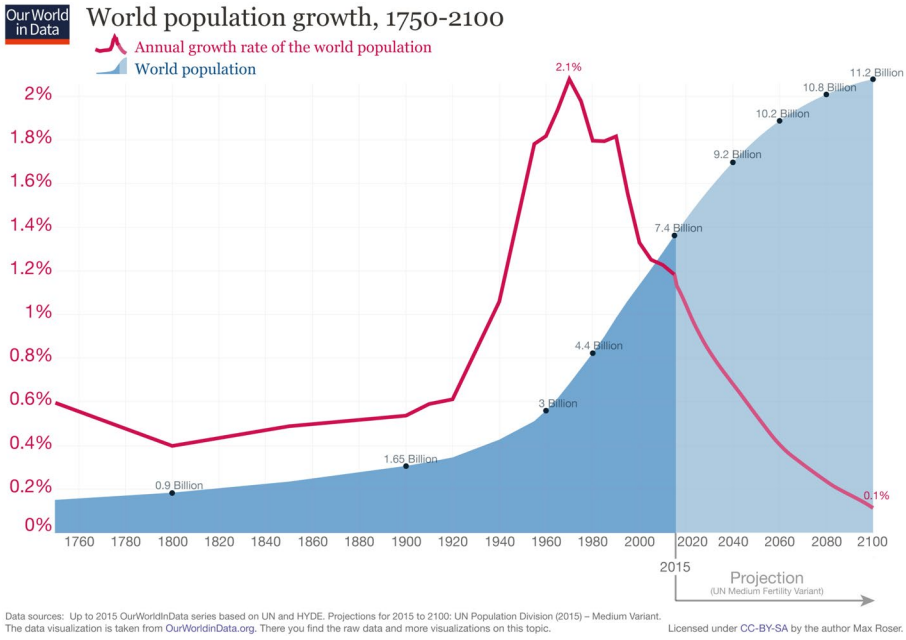

Figure 1: World Population Growth

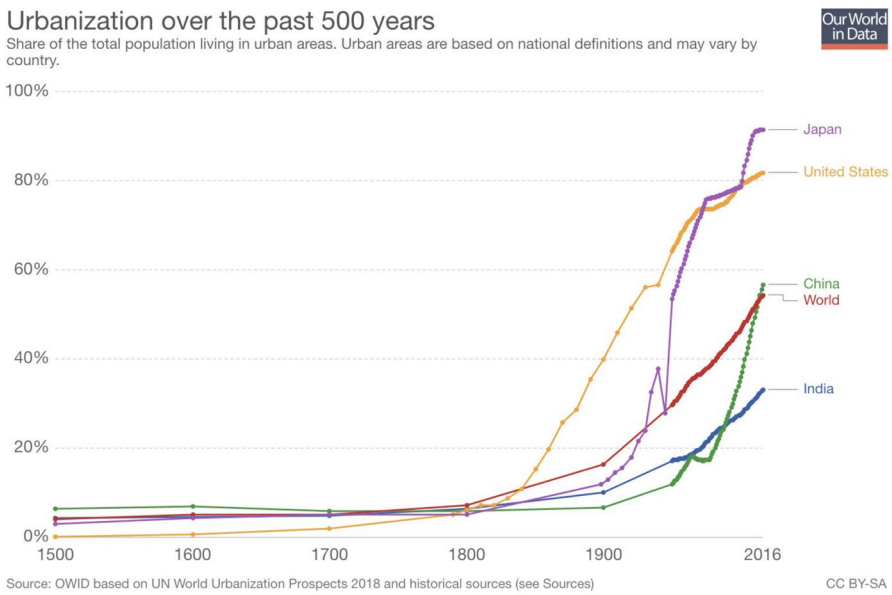

Figure 2: Urbanization

urbanization processes that have increased in intensity over the past few decades with the subsequent industrial revolutions that have progressively compromised the previous urban–rural balance by recalling relevant migratory flows from rural areas to urban agglomerations and their slums. These urban areas are burdened by overpopulation, which is evident in the failure of many jurisdictions to develop sufficient housing and maintain sufficient services for such large numbers of new citizens, and this naturally lowers the latter's quality of life. And one aspect of quality of life that needs protection is cultural heritage, whose importance has been highlighted as a fundamental part of our new urban reality that ought to be preserved. It captures communities' many immaterial values, which are indispensable elements of their collective identities. One value is underlined in the need to protect the environment and green spaces, and a need to live in better harmony with nature. Unbridled urbanization around the world has decreased and poisoned natural resources and has had deleterious effects on public health. The COVID-19 pandemic has shown just how vulnerable some of these dense urban areas are to contagion. To rebalance the urban–rural relationship, I will argue that so-called "smart corridors" are an opportunity to mitigate the urbanization process and reduce territorial inequalities, especially in emerging countries, by emphasizing the close interrelation between strategic infrastructures and urban settlements.

This article concludes with an urgent call to action: we most desperately need a comprehensive vision to face the complexity of urban agglomerations. And this vision must make efficient use the social quality approach as the proper tool to define strategic guidelines and support integrated urban and rural planning.

Increase of Global Urban and Slum Population

The growth in the world's urban and slum population, estimated to reach 8 billion in 2050 and later stabilize at around 10 billion thereafter, confirms that there is a profound need to substantially review the current schemes of urban development and the related uncontrolled urbanization trends, which have experienced exponential growth in recent decades. A recent United Nations Department of Economic and Social Affairs report states: "The urban population of the world has grown rapidly from 751 million in 1950 to 4.2 billion in 2018. Asia, despite its relatively lower level of urbanization, is home to 54 percent of the world's urban population, followed by Europe and Africa with 13 percent each" (UN-DESA 2018).

Since the end of the twentieth century, urbanization has grown without any real opposition from government authorities or planners. The dogma that humanity will soon be practically urbanized is considered inevitable; this trend is also accepted by international agencies such as the United Nations Conference on Housing and Sustainable Urban Development. In a recent report, it was mentioned that a decade ago the forecast was 70 percent urbanization for 2050, but now this estimate is already higher given the speed of the ongoing processes of urbanization (UN-Habitat 2015b).

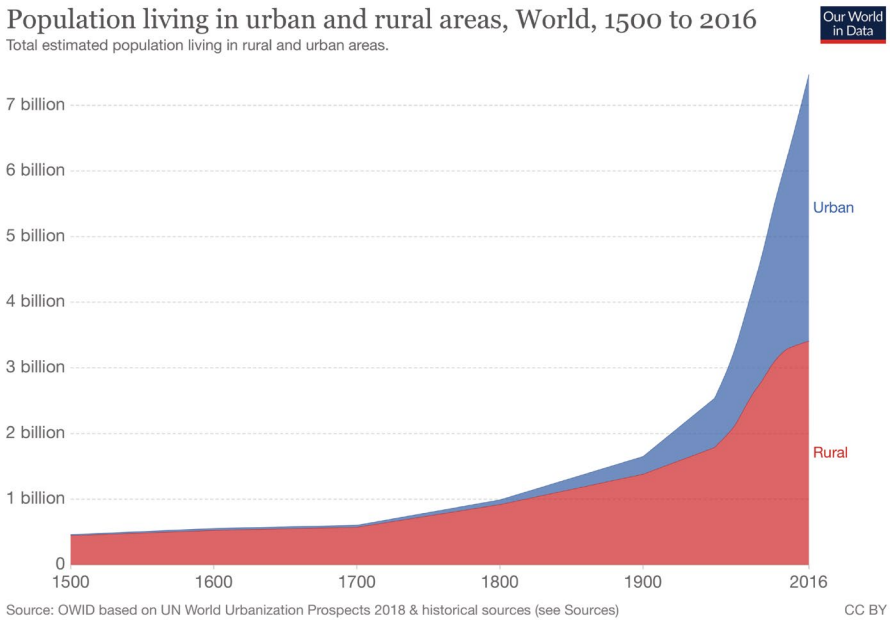

Figure 3: World Population Distribution, 1500–2016

This estimate, however, was inaccurate, according to various studies, because of the inconsistency of the measurement criteria adopted by each country in defining urban areas and in the often non-inclusion in the forecasts of informal agglomerations and close commuter settlements. Critics of current UN figures therefore contest that such varied definitions of "urban" lead to a significant underestimation of world's urban population. Researchers from the European Commission, for example, reported a few years ago that 85 percent of people will live in urban areas by the mid-twenty-first century (Pesaresi et al. 2016).

Reliable estimates are 10 percent higher, which would mean that in 2050 the world's urban population would probably exceed over 80 percent of the planet, if the current trend is not abated. Huge migration flows from rural territories to urban areas have increased exponentially since the mid-twentieth century, after World War II, on the push of more consumerist lifestyles and the search for greater opportunities offered by big cities on a global scale. Megacities, considered those with more than 10 million people, are projected to increase in number from 33 in 2018 to 43 in 2030, mostly in Asia and Africa, and in these cities are also located the largest informal agglomerations, where a relevant segment of the population lives in completely inadequate conditions (UN-DESA 2014). The internal migration flows of the past decades have created new metropolitan agglomerations. Based on global and theoretical models that, as it turns

Table 1: The Ten Largest Megacities, 2015 and 2030

Year	Country or Area	Urban Agglomeration	Population (millions)
2015	Japan	Tokyo	37
	India	Delhi	26
	China	Shanghai	23
	Mexico	Ciudad de México (Mexico City)	21
	Brazil	São Paulo	21
	India	Mumbai (Bombay)	19
	Japan	Kinki M.M.A. (Osaka)	19
	Egypt	Al-Qahirah (Cairo)	19
	United States of America	New York-Newark	19
	China	Beijing	18
2030	India	Delhi	39
	Japan	Tokyo	37
	China	Shanghai	33
	Bangladesh	Dhaka	28
	Egypt	Al-Qahirah (Cairo)	26
	India	Mumbai (Bombay)	25
	China	Beijing	24
	Mexico	Ciudad de México (Mexico City)	24
	Brazil	São Paulo	24
	Democratic Republic of the Congo	Kinshasa	22

Source: UN DESA 2018

out, gave inaccurate numbers, downtown cores and outlying neighborhoods expected hundreds of thousands. Instead, they received millions of residents, and, as a result, these well-planned areas were soon surrounded by slums and other overcrowded informal settlements.

The growth of informal settlements, slums, and poor residential neighborhoods is a global phenomenon accompanying the growth of urban populations and is modifying the entire structure of our cities. An estimated 25 percent of the world's urban population lived in 2016 in slums or informal settlements with 213 million residents (UN-HABITAT 2015a). For example, India's cities hosted, according to 2015 data, about a total of 13.8 million households, which translates to about 100 million people

living in slums across the country—that is, about 24 percent of all urban households, which account for roughly one-third of India's 1.2 billion people (UNSD 2015). Today in Africa there are about 297 million people living in urban areas, so 38 percent of the total population, and it is estimated that by 2030 this figure will be destined to reach more than 50 percent (UNARP 2012). Indeed, the continent has an annual urbanization rate of 3.5 percent, the highest in the world, and the number of African cities with a population of over one million inhabitants almost doubled, passing from 40 to 70, in 2015. This number is expected to be over 100 in 2030.

Why must this urbanization trend be accepted as inevitable? It is a process that unpredictable tragic events such as the current pandemic make necessary to reconsider. It highlights the negative aspects of having such large concentrations of people in close proximity to another from the point of view of sanitation in addition to those of the economy, culture, and the natural environment.

Despite several UN-HABITAT statements and declarations, the world is undergoing an irreversible process of urbanization. Insufficient attention has hitherto been given to this issue by most other international institutions, and there has therefore been a serious lack of debate about what to do about it. Neither of the BRICS member countries (Brazil, Russia, India, China, South Africa) have paid enough attention to this important issue, especially given the fact that all of them are seeing increased internal migration and high rates of urbanization. This issue is mentioned in almost every BRICS Summit Declaration, and a specific Urbanization Forum has been established in 2010, which was later widened to include Friendship Cities, but no specific practical initiatives have been set up to tackle this problem. Much is now being said now about how the urbanization of metropolitan areas could be solved by the advent of "smart and global cities," concepts that assume the widespread use of advanced

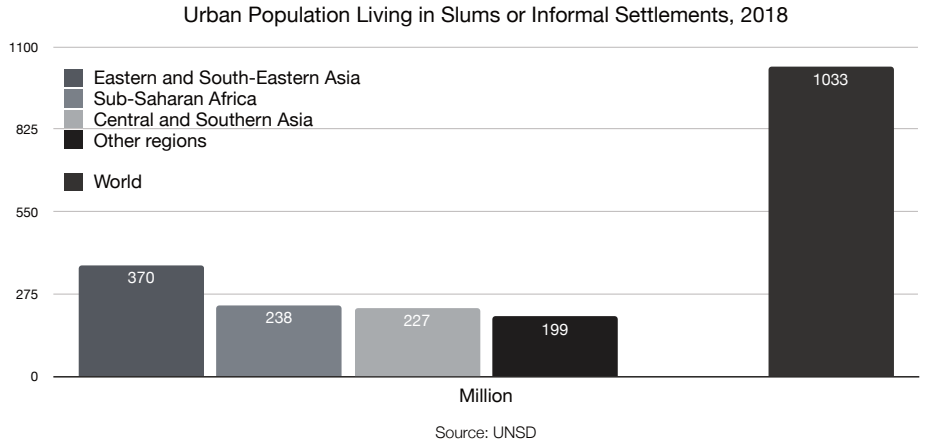

Figure 4: Slums, 2018

technologies, the availability of more green spaces, intelligent mobility, and many other important concepts. The problem is that such a solution does not properly consider the issue of urban development as a whole. The structure itself of our current development models and planning theories, which are based on obsolete paradigms, must be completely overhauled taking into account the most recent demographic trends. Globalization, increased mobility, the Fourth Industrial Revolution (4IR), ITC (Information and Communications Technology) networks, climate change, and a stubborn pandemic are all among the factors that suggest we out to modify in the short term the entire visions of existing urban scenarios.

Uncontrolled Urbanization

Urban settlements have previously grown for centuries in relative harmony with their surrounding natural environments; they have been compatible with the existing natural resources that surrounded them. The main cities of many countries have developed on the sites of ancient settlements by virtue of a continuous process of growth, substantially maintaining a mutually beneficial relationship with their surroundings, be they hills, rivers, forests, or mountains.

Pre-contemporary urbanization models have been modified in the last decades by an increasingly wild urbanization process in metropolises and megacities, mostly located in emerging countries, where relatively large sections of the local populations are living in marginal and deprived settlements. It is therefore necessary to reevaluate the role of traditional smaller cities and towns, where there is better integration and stronger social cohesion.

The belief that urban areas are the best place for people to settle, given the proximity between residences, workplaces, services, and everything else, has been the basis of the modern architecture movement, whose paradigms were first outlined in its manifesto, created by the Swiss-French architect-planner Le Corbusier (Charles Édouard Jeanneret), known as the "Athens Charter" of 1933 (CIAM 1933). These were based exclusively on a hierarchy of the intended use of soils; the zoning of the various residential, production, commercial and leisure structures; and separate mobility schemes for pedestrian and vehicular traffic. These considerations have proven to be completely insufficient due to the actual increase in private and commercial traffic that has occurred in large cities around the world as of late. One example, among many, is Brasilia in Brazil, which was designed and developed by Oscar Niemeyer, a disciple of Le Corbusier, in the 1960s. The ideal city plan was sized for 500,000 inhabitants, but the city grew well beyond that number, which caused serious mobility problems. The rigid functional separation of structures, a completely insufficient vehicular network, and the great distance between the various sectors prevented it from finding an adequate number of daily socializing spaces. The actual scheme of urban concentration, formulated about ninety years ago, is now criticized as being out dated given recent

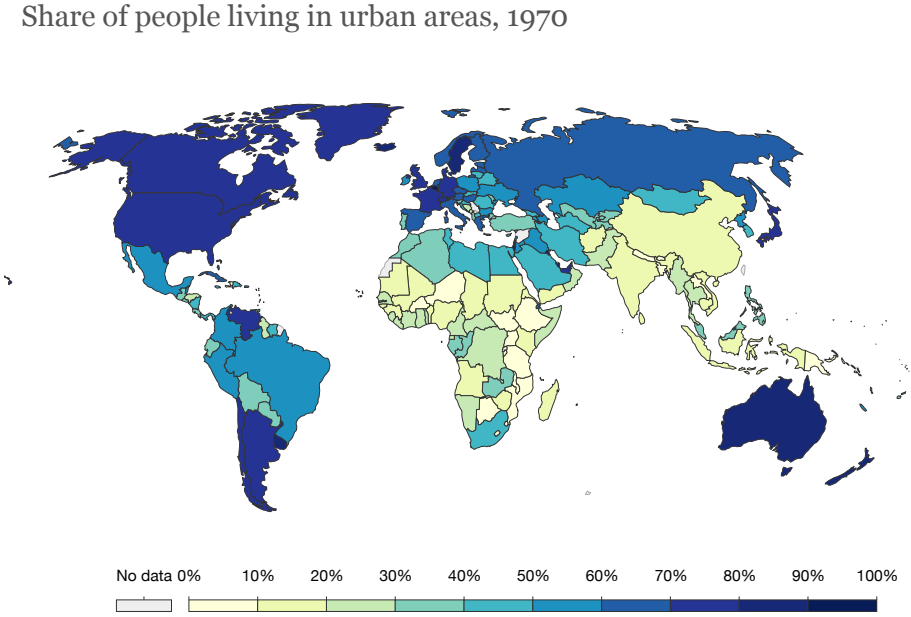

Figure 5: Urban Areas as Percentage of the World, 1970

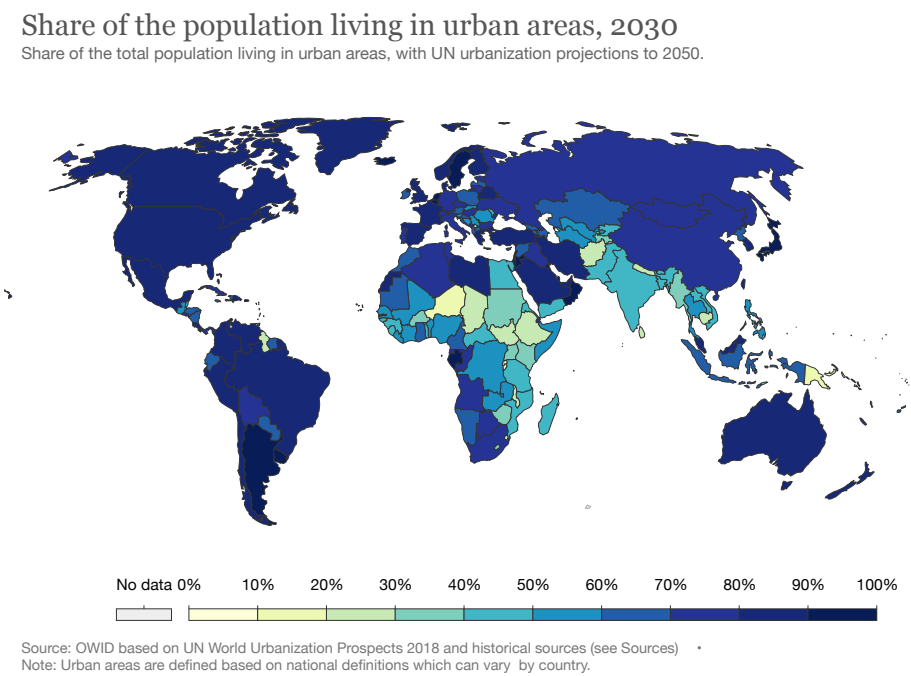

Figure 6: Urban Areas as Percentage of the World, 2030

technological advances, the ongoing social and economic processes of globalization, and numerous other factors, to which we now add the effects of the COVID-19 pandemic. One relatively recent critique was voiced by Christopher Alexander, whose pattern language theory provides formatted, humanist solutions to complex design problems in urban planning proposing a new city-design vision that evaluate[s] the urban context as a whole indivisible "unicum." But his approach is limited as considers only "patterns" related only to the physical issues at the different scales, from regional planning to house design details, not mentioning the relevant intangible values and aspects of residents (Alexander C. et al. 1977).

The implementation of the above-mentioned principles in the past few decades has favoured the progressive growth of large urban agglomerations, which in some cases have become metropolitan areas. In the global scenario, the growing urbanization trend is toward megacities, where the industrial boom is attracting huge migratory flows that mostly settle in peripheral and precarious settlements. Living conditions in these areas are unacceptable from any perspective, theoretical or otherwise. There is overcrowding, a lack of all basic services, and poor social and sanitary conditions. In fact, the new urban agglomerations in emerging countries are becoming allegories of contemporary Western metropolises, with similar problems and inadequacies, which are often higher due to the fact that the former started out in worse conditions and have seen a much faster increase in population. The model of urban development based on the massive dissemination of standardized schemes and imported lifestyles, which are similar all over the world, risks driving emerging countries and their megacities—along with their surrounding areas—toward socioeconomic disaster. This growth is simply unsustainable.

The experience of metropolises and megacities all around the globe, which are expected to grow in number and size in near future, especially in Asian and African countries, has mainly been negative due to poor environmental and social conditions. And the long-term impacts of these conditions is rather unpredictable; though rising atmospheric pollution and significant water shortages are already visible. These urban settlements have increased exponentially since the middle of the twentieth century, attracting large flows of rural immigrants, with peaks in Asia, as for example in industrialized eastern China, where agglomerations of around 50 million inhabitants have arisen, as the Pearl River Megacity, also known as the Pearl River Delta Metropolitan Region.

Negative returns are accruing on these urban inhabitants, who are lost in the stressful rhythms of daily life: poor commuting mobility, low-quality services, inadequate housing and public spaces, and a lack of socializing opportunities. Also, studies from the Italian Foundation Della Rocca of 2014 highlighted the incidence of diseases related to pollution as far over the main reason of yearly deaths in the urban areas (Beguinot 2012). To these effects have to be added the negative sanitary impacts of air and water pollution, which have already been responsible for the deaths of millions of urban inhabitants. As stated by the Italian Association of the Council of European

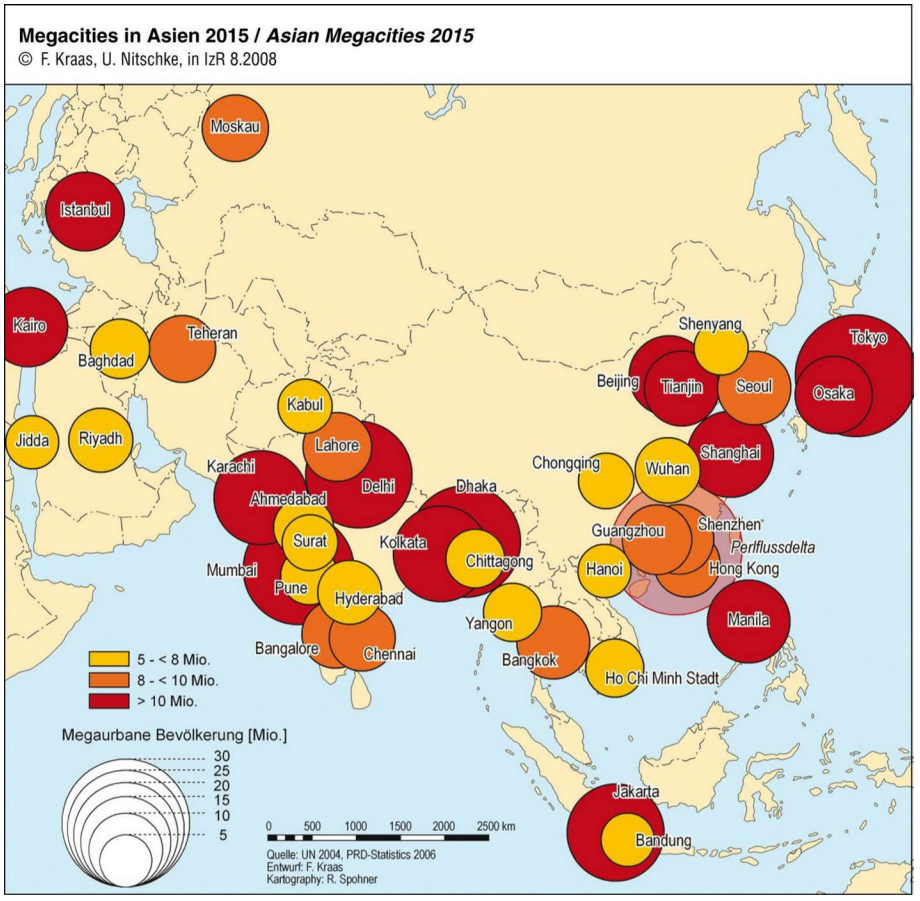

Figure 7: Megacities in Asia

Municipalities and Regions in 2015: "Air pollution is a risk factor of great importance for environmental health. In 2014, 9 out of 10 people living in cities breathed air that did not comply with the safety parameters imposed" (AICCRE 2015).

Development based on the massive dissemination of standardized products and consumerist lifestyles, which are similar all over the world, proves unable to assist and develop the traditional capacity and quality of local contexts, risks to drive emerging countries toward a mode of life unable to see sustainable socioeconomic growth, and currently endangers the long-term viability of surrounding natural environment.

To be successful, urban development must be based on the local contexts with a large bottom-up participation rate, as virtuous synergy between all stakeholders transformation (residents and users) put in value all the endogenous resources and manage them through the identification and implementation of shared rules regarding land use and care for the environment.

In this vein, UN HABITAT since 1992 has been criticizing the lack of attention for metropolises and cities in the debate on sustainability. This issue was finally addressed in 2009, but in the following Rio+20 Conference Declaration of 2012 the urban issues were , rather unfortunately, understated (UN-HABITAT 2012). A few steps forward were made with the New Urban Agenda 2030 (UN-HABITAT III 2017) of the III Conference in Quito in 2016 and its 17 sustainable development goals (SDGs) (AGENDA 2030 2016). As reported in the International Association on Social Quality (IASQ)'s Working Paper n. 14, an interesting 2013 UNDP China study on sustainable cities advanced proposals about urban monitoring based on the traditional distinction of dimensions according the current debate on sustainability, but in any case there was a lack of methodological framework and a lack of clear indicators. The experiments carried in Jiaxing to eradicate slums were insufficient, and the new neighborhoods there are just a physical agglomeration of various building types (IASQ 2015).

As previously stated, the accepted dogma that large urban areas are humanity's future and offer greater opportunities to people must be reviewed and questioned. Evaluation parameters should not be limited to income and economic indicators only, but ought to consider many other factors such as the suitability of housing, mobility, access to services, pollution, environmental impacts, and many others which, overall, determine the effective quality of people's daily circumstances. To all the above now we must add public health issues in general and the prevention of contagious diseases, as epidemics and pandemics have to be considered as probable returning events that surely can be better managed in smaller-sized urban areas: containment measures are easier to deploy and enforce, as we are now seeing with the COVID-19 crisis. Belief in this overall evaluation is supported by many analyses and reports, such as the one made on Latin America by the CAF, the Development Bank of Latin America, which states:

> Intermediate cities are gaining more and more prominence in the socioeconomic development of Latin America. [Some] 32 percent of Latin Americans live in them; some estimates indicate that they can concentrate up to 17 percent of GDP. They will be decisive in increasing productivity and national and regional competitiveness; and on the other, they are called to contribute significantly to closing the gaps between rural and urban areas. (CAF 2019)

While it has to be accepted that the urbanization process currently underway is probably now unstoppable, as much as the previous weak or late opposition has failed, we can at least take actions to mitigate the trend. We should assess and implement viable solutions as soon as possible to reduce the negative effects of pollution, improper land use, and progressive natural resource shortages. New urban settlements must and can be different. It is urgent, therefore, that we engage in a deep reflection on the entire urbanization process in order to support and reinforce the role of minor centres and towns, so they that have surely more internal value and resilience and can maintain their existing peculiarities, traditions, tangible and intangible patrimony,

and all necessary elements that assure integration, social cohesion, and permanent development.

The current urban development scheme has also been unsuccessful for one fundamental reason: its sector-based approach that is limited to a few strictly functional development aspects and that pays scant attention to the negative impacts on the environment and heritage preservation as well as to the resultant detrimental sociocultural consequences. Globalization, increased mobility, the 4IR, and ITC networks, are among the technologies that indicate that we are better off changing the entire vision of existing urban scenarios as well the principles and guidelines of intervention, especially through integrated urban planning, so that they take into account the close interconnections between economic, environmental, and societal factors. And this is exactly what social quality theory (SQT) argues.

The Importance of Heritage

The reevaluation of smaller cities and towns, especially those with a rich heritage patrimony where an important percentage of the global population still lives, is necessary to mitigate the migration trend toward metropolises and megacities.

In fact, the rapid increase of urbanization processes all over the globe in the last few decades have been posing new and unexpected problems, so previous declarations and recommendations related to single aspects,such as heritage preservation or patrimony enhancement, have been unable to face the great complexity of actual urban realities. In recent years, rising attention has focused on the close interconnections between urban heritage, urban territory, and natural resources, which comprise the unique peculiarities of each site and which are known as. "genius loci," or in the terminology of the International Council on Monuments and Sites (ICOMOS*),* "spirit of place." The 2008 Declaration by ICOMOS, drafted in Quebec City, states in the Preamble (paragraph 3) the latter term *"is defined as the tangible and the intangible elements, that is to say the physical and spiritual element that give meaning, value and emotion and mystery to a place."*

Heritage represented by minor cities and towns is in fact the living evidence of a past that formed them as a fundamental part of the everyday context of humanity, and their protection and integration into the contemporary scenario should be a basic factor in town planning, land development, and environmental protection. All human dwellings, from those in hamlets to those in larger cities, are formed by tangible and intangible elements representing their specific heritage. The *"genius loci"* is progressively losing its relevance in the fast-growing processes of urbanization and gentrification all around the world, and contemporary metropolitan agglomerations, built following standardized models and international patterns, are weakening those peculiarities that cities had before the various industrial revolutions. Given the above-mentioned considerations, the conservation of the heritage and the revival of

the role of the smaller cities and minor towns is not only possible but fundamental as one of the tools to reduce growing urbanization processes. In these smaller cities and towns, there remains a strong sense of social cohesion and community belonging, whose lack facilitates the downgrading of their intangible heritage. Unique and local values represent the necessary interaction between tangible orders and intangible elements of each city, which, with them, can experience an increase in its identity and an enhancement of residents' living standards. The sense of belonging in a specific place is certainly one of the main objectives to be achieved through the type of interventions, which I advocate here, aimed at improving inclusion and identity. The lack of adequate and qualified public spaces or meeting points in metropolitan areas also represents a serious disadvantage for socializing. Small towns have the old meeting point, the "forum" or "square," and this is what we need to foster in small and medium-sized cities.

The European Union for some years now has been considering the relevance of heritage as a necessary component of proper urban development, implementing through its cooperation programs various studies and projects, one of them being the 2004 RFO PAGUS (Programme of Assistance for Governance of Urban Sustainability) within the INTERREG III program, which was designed to foster economic and social cohesion among regions within and outside of Europe (PAGUS 2000–2006).

In 2009, the European Commission DG Research, at a conference on sustainability, concluded that urban research and policy are still highly sectoral and not adapted to handle the complexity of urban sustainability, and that the world needed "more creative management of the cultural heritage of cities and better engagement of citizens in local governance". These considerations have been included since 2011 in the UNESCO–ICOMOS *"Valletta Principles"* identified by CIVVIH, the International Committee on Historic Towns and Villages. They highlight the fact that human settlements for centuries have been based on an extended net of small and medium-sized communities, mostly located at short distance from each other, with homogeneous and traditionally settled populations, intense community life, social cohesion and identity. And these characteristics have been necessary for the preservation of their traditions and intangible heritage (ICOMOS 2011).

For these and other reasons, it is a priority to focus on the enhancement of heritage that includes all the local territorial assets (cultural, environmental, historical, etc.), with the aim of promoting a strategy for integrated urban and territorial growth that includes agriculture, craftsmanship, advanced technology, and every activity linked to local culture and tradition.

Actually, thousands of smaller urban realities with heritage value, located not only in marginal territories, face the progressive reduction of original inhabitants migrating to bigger cities, and they are therefore facing a loss of daily services and activities, and a rapid decay in their heritage. This heritage was attentively kept by the original dwellers and cannot be replaced by temporary second house residents or tourists: neither of these can support the local economy. In fact, even if the tangible patrimony can

be restored and reused with the necessary attention, the immaterial heritage that is represented by the original inhabitants' values cannot be recreated or replicated elsewhere, since other places lack the societal characteristics of the original place: therefore heritage is a fundamental ingredient when it comes to overall sustainability.

Climate Change and Pandemic Impacts

Minor cities, towns, and smaller settlements and their surrounding territories also cover a necessary function of providing human protection over the natural environment, which has been made increasingly necessary by climate change; this is particularly evident in rural and marginal territories. Any territory needs different levels of protection and enhancement so they might safely transform through quality measures that are undertaken by the local residents themselves. From the implementation of modern agricultural techniques in neglected and marginal territories, the environment will yield positive returns, which will also help develop the local economy and help the local residents permanently stay in their homes; the constant maintenance of the natural environment also reduces the risks of natural disasters such as floods, forest fires, and desertification.

Attention to these issues has increased around the world since the Rio 1992 Conference with its Millennium Development Goals, and hit a plateau at the 2016 UN-Habitat III Conference, where AGENDA 2030 was approved with the 17 SDG-Sustainable Development Goals to be achieved for the year 2030. But this last document provides only partial and (in some cases) doubtful recommendations on this issue, and these amount to just some general guidelines. In detail, no approach is found therein that can be said to be aimed at revamping priorities that focus specifically on the ecological quality, sustainability and resilience of cities. Little attention has been given to date by most other international institutions, including the European Union, who have not developed enough serious debates on this important topic.

Among the 17 SDGs are several important goals related to infrastructure, cities, and human settlements. The first is Goal 9: "Build resilient infrastructure, promote sustainable industrialization and foster innovation." It states that *"sustainable transport achieves better integration of the economy while respecting the environment, improving social equity, health, resilience of cities, urban-rural linkages and productivity of rural areas*." The second is Goal 11: "Make cities inclusive, safe, resilient and sustainable, stating *"Its objective is to provide positive economic support, [and] social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning*." But despite these noble intentions, there is no emerging approach capable of re-launching the priorities, mentioned above, that focus specifically on the ecological quality, sustainability, and resilience of cities. This is surprising in light of the most recent developments in the areas of the green economy, the economy of sustainable development, and the circular and bio-economies.

The fact that humankind and the environment are deeply interconnected is evident after some months of lockdown. It is clearly visible from the satellite photos relating to atmospheric pollution, which has fallen enormously everywhere due to the decrease in production activities and in vehicle and air traffic, which is almost permanent in many Asian megacities and which is present in many other cities on all continents. Urban settlements are the ones that highly contribute to the above-mentioned deleterious impacts on the climate, and all cities are in effect heat islands: also if their surface area covers only 2 percent of the entire planet, they are responsible for about 20 percent of global climate pollution, a tenfold increase. For example, due to wild urbanization and immense building development during the past few decades, the Indonesian capital Jakarta itself is slowly sinking and starting to flood. So the administrative function of the country will be moved to another city in order to reduce the actual immigration flows into the capital.

The huge informal settlements that surround many of the world's metropolises offer inhumane life conditions: overcrowding, lack of water and sanitary networks, waste, and air pollution. Significant examples of this situation are to be found in India, which hosts 13 of the world's 20 most polluted cities and where over 140 million people have to live in these conditions. This is according to data from a 2017 study, where pollution in the slums has increased to intolerable levels and is responsible for serious lung diseases (Rahaman and Das 2017). In relation to COVID-19, reports from almost all countries are showing that the pandemic spreads faster in areas with larger concentrations of people, so it is more difficult to reduce its spread in large urban agglomerations than in smaller settlements. Updated data arriving from: slums in India, "townships" in South Africa, "favelas" in Brazil, and from many other informal settlements is confirming how difficult it is to detect the contagious spread and to implement in those overcrowded contexts containment and social distancing measures—measures that work better in smaller settlements. This is not the only pandemic or epidemic that has occurred in recent years: in past years, we had Mad Cow, Ebola, SARS, MERS, West Nile, and the Bird Flu. COVID-19 will certainly not be the last, given that all forecasts agree that we will be faced with more and more such events caused by humankind, just like climate change is (at least insofar as the rapid warming of the planet is concerned). The forced lockdown, involving many countries globally with the halting of industrial production and traffic, in about two months, has had positive returns on the environment, restoring the natural scenario of many years ago.

This fact confirms that, if we are to apply the right territorial and urban development models, then the UN SDGS and climate change mitigation can be achieved in the medium term. The present pandemic is also highlighting the values of smaller agglomerations: on the one hand, it is easier to contain and monitor the contagious disease, and on the other hand, there is greater reciprocal cooperation and assistance among the inhabitants of these places, who already have stronger social bonds and cohesion. For these and the above-mentioned considerations, the revival of the role

of smaller cities and towns is not only possible but imperative, for it is one the tools we can use to reduce urbanization processes and keep the inhabitants of these smaller locales on their territory. We can also, as humans, fulfill our role as caretakers of the environment, something that climate change has been making increasingly necessary.

Rebalancing Guidelines

The interconnection between infrastructures and urban settlements has been emphasized in recent years by various organizations, including the United Nations, which again in 2012 again, at the Rio+20 Conference on sustainable development, declared: "*Sustainable transport achieves better economy while respecting the environment, improving social equity, health, resilience of cities, urban-rural linkages and productivity of rural areas"* (UN-HABITAT 2012).

Modern technologies can provide effective tools in achieving rural territorial reuse through compatible mobility infrastructures, communication networks, and renewable energies, and they have a relevant role in enhancing human scale settlements, local economies, environmental protection, patrimony preservation, and the social cohesion of inhabitants. This will help revitalize interconnected towns and rural settlements, making them big enough for inhabitants to prosper economically alongside one another, and it will hopefully stop them from seeking to improve their lot in life in megacities.

The ITC networks, further developed by the incoming Fourth Industrial Revolution, will provide new instruments that make it easier to work from home, have access to global knowledge and information, and access educational and medical services. This will therefore reduce people's need to take a daily commute to work and save them a lot of time, the daily commute being one of the more relevant problems of the busy life of people working in a metropolis. As the World Economic Forum states:

> The Fourth Industrial Revolution represents a fundamental change in the way we live, work and relate to one another. It is a new chapter in human development, enabled by extraordinary technology advances commensurate with those of the first, second and third industrial revolutions. The COVID-19 crisis has shown us that emerging technologies like the Internet and artificial intelligence are not just tools, they are essential to the functioning of our society and economy. Particularly in this time of instability, we need to think of them as critical infrastructure. (Schwab 2020)

Digital tools and the concept of "smart-working" are also allowing new forms of working from home to be developed and put into use. The question we must now ask is why this scenario (who could imagine the actual change in our lives just thirty years ago!) is not being accompanied by the revaluation of the assets that smaller cities still have that can assure people a better quality of life, ensure social cohesion, and provide permanent sustainable urban development. The network of smaller cities cannot be

replicated elsewhere, especially in large and scarcely populated countries, but this model can be successfully implemented in territories with already settled inhabitants in a short time. It is therefore necessary to assume a completely different perspective when evaluating the relevance of minor cities and rural settlements and defining the future of territorial development: we need more of these settlements so as to mitigate the actual rise of new metropolises and megalopolises, especially in the emerging countries of Asia, Africa, and Latin America. This new approach will change how we deal with urban and territorial planning because it highlights the inadequacy of the plans that are currently in existence, which mainly identify some areas to be constrained and others to be transformed but which only use quantitative tools to do the job. Zoning, for example, is looked at without any consideration (or very little consideration) of any necessary social quality parameters defined by the social quality approach (SQA) to urban planning—parameters that I will describe below. The identification of homogeneous intervention areas must be the result of their taking into account of such factors as patrimony, environment, heritage, and culture, all of which are closely interrelated. These are the parameters and the factors that will define the evolution of the territory and that should be included in the planning of urban areas.

For these and other reasons, it is a priority that we focus on the enhancement of the characteristic elements of local urban/territorial assets (cultural, environmental, historical, etc.), in order to promote a strategy of long-term growth that includes agriculture, craftsmanship, advanced technology and activities linked to local traditions (which ought to be shared with all town stakeholders). Such a holistic approach to integrated planning not only is necessary but also adds value to territories surrounding cities, which ought to be considered as a complementary asset to be protected and enhanced. In this way, we can overcome the old traditional division between centre and periphery, and reduce the inequalities between and urban and rural areas. In this comprehensive vision, we must recognize, in addition to the economic and environmental dimensions, two other important dimensions of development: the sociopolitical dimension and the sociocultural dimension (IASQ 2013). This concept differs from the "three dimensions of sustainability" (the economic, social, and environmental dimensions) as presented in the famous Brundtland Report (UN 1987), which was widely accepted by scholars and politicians at the time and which was endorsed in a monumental report about social progress published by Joseph Stiglitz and colleagues in 2009.

Smart Corridors

Similarly to the many "smart cities" projects that are being developed in many countries, the new intercontinental networks of terrestrial communication and connectivity can be transformed into "smart corridors" that feature the attractions and the integrated development functions of the territories crossed, which will have a settle-

ment pattern no longer concentrated in a few punctual locations but scattered along the physical mobility and connectivity infrastructures. Along these corridors, there will also be energy, water, data transmission, and other networks through attraction poles represented by medium-sized (existing or new) urban settlements that will also serve as industrial, commercial, and/or innovation centers. The ongoing implementation worldwide of these international corridors represents an opportunity to enhance human dwellings located along their paths; but up to now they are considered mainly as a transport, energy, and communication networks, with all the attention focused on the infrastructural aspects. Throughout the centuries, important cities and urban settlements have risen and grown along the main commercial and trading routes and were not only the final destinations of the diverse trails, but represented the attraction poles of the surrounding territories, especially in landlocked countries (Motta 2019a). Urban settlements should now be the area of focus for smart corridors.

A wide and efficient net of public transport and logistics systems spread over the territories will then allow residents to stay in smaller cities and settlements with a more human size. In these cities people can once again live in a genuine spirit of community: just like people have for millennia. In European countries, most of the corridors belonging to the TEN-T network connect cities that in many cases are historic settlements and heritage sites. In fact, the net runs often on the ancient Roman roads, which are thousands of years old and represent real connectivity: they were not simply the military or commercial backbone of the Roman Empire, but at the same time they were also the purveyors of social exchange and culture.

Therefore, these new international corridors can—if their planning and implementation take into account not just infrastructural issues but social, environmental, and procedural issues—become the instrument to revamp marginal or landlocked territories, and, to reduce the rural–urban divide, promote local economies, and help enhance heritage and patrimony assets located along their corridors.

All the BRICS countries are engaged in strategic infrastructure projects at different stages of planning and implementation: Brazil is working on bi-oceanic connections, Russia on the Razvitie and Trans-Siberian corridors, India on the North–South and BCIM connectivity corridors, China on the BRI and Global Silk Road initiatives, and, finally, South Africa on the Maputo Corridor. These infrastructure projects can then represent the main drivers for the economic growth of their and other neighboring emerging economies and become the backbone of a wide and integrated territorial development process. The same can be said for the world's maritime routes, where the city/ports, excluding the recent modern terminals, have been playing an important trading and commercial role for centuries on every continent.

The objective is for planners and officials to exploit the presence of these mobility, energy, and communication infrastructures for the enhancement of the vast territories that they cross. These projects cover swathes of territory of variable width, which, depending on their environmental and socioeconomic characteristics, can be easily accessible and serviced: they can support new agricultural, productive and commer-

cial activities with the help of advanced technologies. This is where the growth and development needs to happen.

It is therefore important to develop the integrated territorial planning of each homogeneous territory intersected by the corridor trails, including the existing or new urban settlements, so as to facilitate their rehabilitation and reuse as development poles. In this way, we can avoid such mobility infrastructures instead being used as escape routes to already overpopulated metropolitan agglomerations. Such an integrated infrastructural system is conceived as a "smart corridor" network and goes beyond the current definition of infrastructure, which is based essentially on economic considerations. It is oriented to produce synergies between the components in a reciprocal dynamic (Motta 2019b).

The "smart corridor" network will constitute on the one hand a tool to support the environment, through the renewed human presence in the territory with a better use of specific environmental resources, and on the other hand a means to mitigate urbanization trend toward large metropolises. It will favor the repopulation of marginalized areas through the diffusion of smaller urban settlements, which will be attractive due to their environmental and social characteristics that favor a safe and

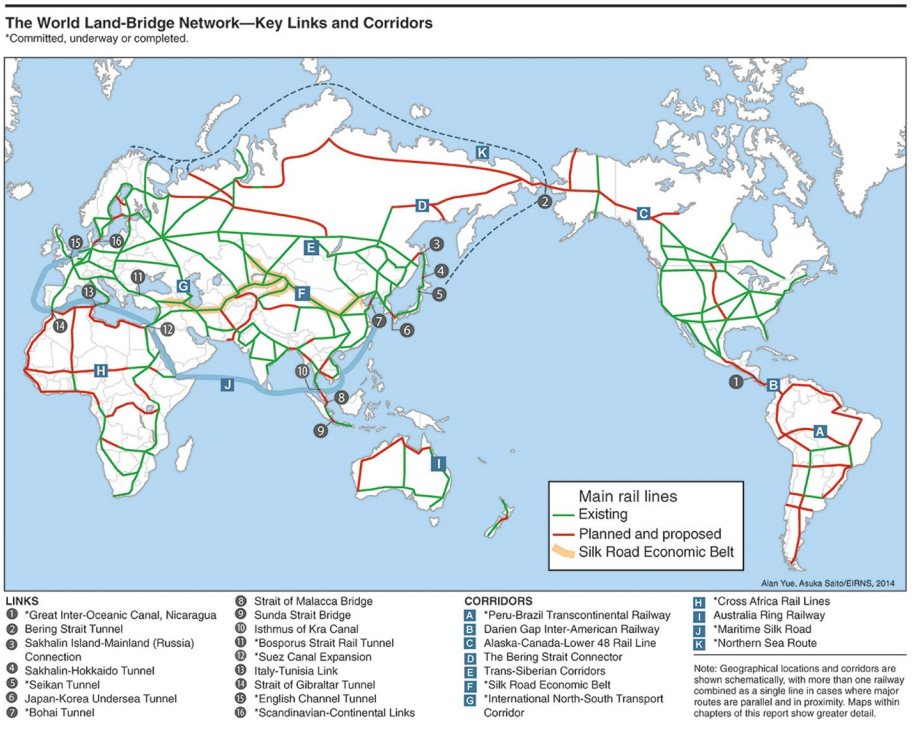

Figure 8: Land Bridge Network

sustainable quality of life for a significant number of inhabitants. Similar concepts have been presented since the 1990s, with one of them being by the La Rouche Movement, which proposed a global network of strategic mobility infrastructures by the implementation of huge projects connecting all the continents. In many ways, this was a preclude to and a preview of the Chinese Global Silk Road initiative (Larouche and Zepp 1997).

Of course, it is important to verify that proposed corridor trails are environmentally friendly and do not involve sensitive and/or risky areas (or else they would defeat their very purpose). And equally important is the respect of all the intangible values, which are represented by societal and cultural habits, and identify the safeguards and mitigation interventions that need to be implemented to reduce environmental and socio-cultural impacts on the concerned territories by their resident populations.

With such an integrated vision of these corridors, they will be transformed from simple transport and communication infrastructures—as they have generally been conceived—into regional and national axes of territorial development, becoming, as "smart corridors," the backbone of the intercontinental/global networks of exchange, not only of goods and services, but also of different cultures, contacts, and experiences. A comprehensive approach such as that of SQT, aimed at overcoming the fragmentation of current scientific strategies, can contribute to territorial and urban development and the achievement of overall sustainability. Therefore, the development of "smart corridors," in particular those whose trails interest the BRICS countries and emerging economies, can become a practical application of the SQA principles through the implementation of suitable planning, procedural, and regulatory tools.

Social Quality Approach

All the main issues, discussed above, related to uncontrolled urbanization processes, climate change, and negative impacts on the environment and heritage, urban settlement patterns, urban–rural rebalancing are deeply interconnected. The best way to achieve results in this regard has to be developed with a holistic vision. Actual urban constructions are a consequence of a one-dimensional type of planning, a model that is concentrated on the physical aspects and especially the socioeconomic and financial aspects (or dimensions) of the city, and that neglects the socio-environmental, the sociopolitical, and the socio-cultural (welfare) dimensions of daily circumstances in the urban context. In the late 1990s, a movement began in Europe that aimed to overcome the current fragmentation of scientific strategies in order to achieve urban and territorial development within a framework of environmental sustainability. This movement continues to this day. It promotes the social quality approach (SQA), which is focused on the reciprocity between three main fields of societal and environmental circumstances, namely, the (1) field of societal complexities, (2) the field of rural–urban circumstances, and (3) the field of ecosystems.

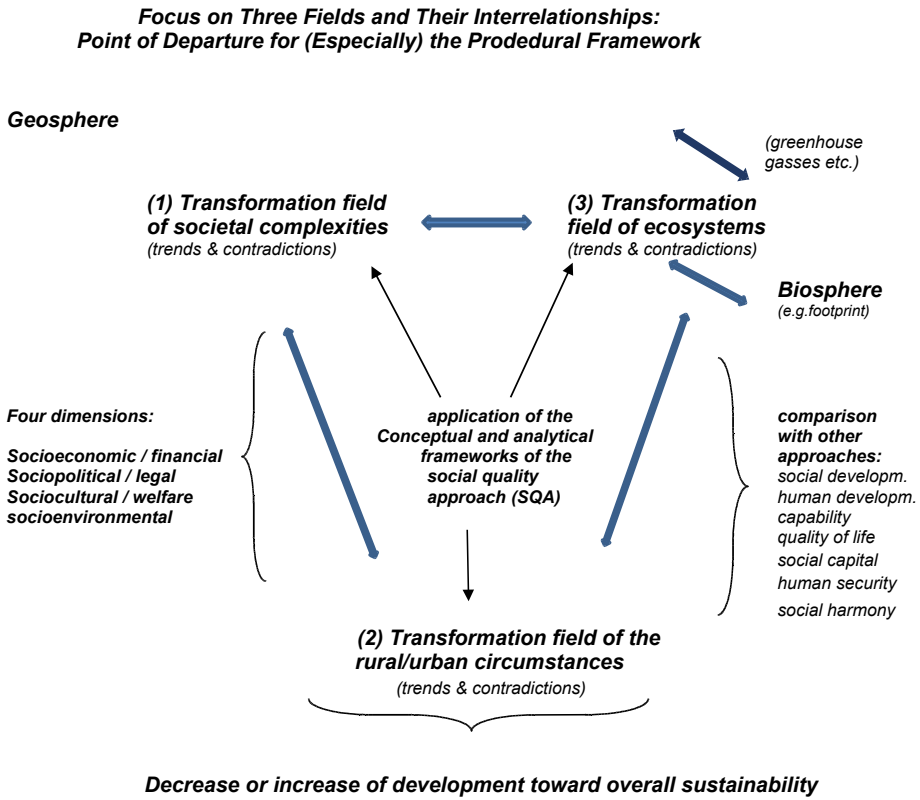

Figure 9: IASQ Framework

Figure 9 is derived from the IASQ's Working Paper no. 17 (IASQ 2019). It is the result of the collective theorizing about the outcomes of different social quality projects that were implemented in the Hague during the past decade (IASQ 2009, 2010, 2012). These projects resulted in the generation of ideas about connecting the pursuit of overall sustainability and urban development. Of course, the latter can be said to be a part of the former. It has no meaning in itself,unless it is understood as being dependent for its functionality on the first concept. The above figure suggests, or hypothesizes, that in each field all four main dimensions are relevant: the economic, the environmental, socio-political and the socio-cultural. We can speak about the functionality of this model if the outcomes of the relationships of processes between these four dimensions in the rural–urban context remain within the boundaries of a resilient system. An IASQ study about social quality indicators and sustainable urban development had this to say about the issue:

> Past European-wide research in sixty cities demonstrated the lack of consensus of what sustainable urban development is and which urban methodological framework should be applied to support it. Often, local professionals of urban development feel a trade-off between sustainable infrastructures and achieving more sustainable societies. Tensions between the two may arise when infrastructural projects are designed to meet certain environmental protection or resource efficiency criteria without, however, sufficiently taking into action societal criteria, both in terms of how these projects may affect the lives of individuals, groups and communities and in terms of the needs and behaviour of the people using related services. (IASQ 2015: 24)

With regard to the IASQ framework, we may first suppose that it is model that takes into account the changes in the field of the rural–urban circumstances in the context of societal complexities and the field of ecosystems, because in every field the four dimensions are in force. Second, thanks to the SQA, we can make use of an analytical framework applicable to dimensions in all three fields, namely the so-called "social quality architecture" of the constitutional, the conditional, and the normative factors of urban development. The changes in the four dimensions of each field can be measured by their respective profiles, indicators, and criteria (Walker and Van der Maesen 2012). This overcomes the current methods of assessing the quality of life, which are based on parameters such as per capita income, available services, housing surfaces, and so on, leaving out those fundamental elements such as environmental, political, economic, and socio-cultural considerations that allow us to identify shared indicators like effective social cohesion and impacts on natural resources. For this reason, it is certainly appropriate to face the issue of urban settlement with a new perspective, one that is not purely market-based or consumerist, which re-evaluates the values of inclusion, participation, and solidarity that still exist in minor centers with living conditions that, thanks to modern technologies, can reach much higher standards than in the past in a widespread context of social quality. Various SQA studies move in this direction, both in the European Union and in other jurisdictions such as China and Ukraine, and they are aimed at defining social quality through new parameters that evaluate different factors that affect people's daily lives, and analyze the relationships between economic and social development, so as to promote sustainable and environmentally compatible urban development. There are also various national planning tools that are moving in this direction as well, for they are promoting the integrated socio-economic development of homogeneous areas by consulting all relevant stakeholders and looking at the issue from an integrated standpoint.

In this regard, I want to stress that the SQA considers the social element, or "the social," not simply as a simple set of mutual values and relationships, but an integral part of its model:

> An outcome of the interaction between people (constituted as actors) and their constructed and natural environment. Its subject matter refers to people's interrelated productive and reproductive relationships. In other words, the constitutive interdependency between

> processes of self-realization and processes governing the formation of collective identities is a condition for the social and its progress or decline. (IASQ 2013)

The main objective of the SQA is to overcome the existing fragmentation in the evaluation of societal phenomena and to evaluate its processes of continuous modification through five main parameters: social justice, solidarity, equality of values, human dignity, and environmental sustainability. It seeks to look at these parameters as a unitary whole that is indivisible and necessary to define correct social policies at different levels. They are known as the normative factors of social quality.

Specifically, on the topic of sustainability in an urban context, there is a need for finding a more comprehensive meaning of sustainability, that encompasses issues of finances and economic development, nature and maintaining the natural foundation of life and the societal conditions in their togetherness.

The main objective is to reduce migratory flows toward large urban agglomerations, with alienating living conditions, through the maintenance of inhabitants in urban contexts with dimension and characteristics that favor the overall social quality of the residents. And it is not only the economic context that matters, but all the different regulatory elements identified by the SQA for evaluation. As stated in the IASQ Working Paper no. 17 of 2019 on Eastern Europe and on Ukraine more specifically:

> Its objective is to judge the extent of the "quality" of "the social." The ongoing digital revolution, the growth of economic-financial inequalities, the unmistakable climate change, the multitude forms of water, ground and air pollutions . . . the increase of the global population, and the growth of megacities are decisive aspects in contemporary societal processes." (IASQ 2019)

A specific motive for this attention to the social is that the SQA should contribute to the development of the overall sustainability of cities as a comprehensive result of processes in the four societal dimensions, which will be realized in the field of societal complexities, the field of rural–urban circumstances, and the field of ecosystems, as presented in Figure 9 above.

It is an opportunity to experiment with the three operational tools of the SQA—profiles, indicators, and criteria—within an interdisciplinary regulation capable of judging the outcomes of "what happens." The results of this continuous assessment should pave the way for societal oriented rules and tools adequate for contemporary production and reproduction relationships involving all the actors of each territory in the various phases, the first of which involves all the local communities. It is a matter of harmonizing the tensions between social development in a broad sense and social development in the merely economic one: "Saying that these are dialectical tensions means highlighting the productive force of the relationship between the poles." Importantly this setting is composed by three sets of factors, namely conditional, constitutional and normative factors.

For this reason, it is certainly appropriate to face the issue of human settlements with a new perspective, one that is not only market-oriented and based on consumerist models. We need one that re-evaluates the values of inclusion, participation, social exchanges, and solidarity that still exist in minor centers with living conditions that, also thanks to modern technologies, can reach much higher standards than in the past in a context of social quality.

This widespread settlement model and the enhancement of smaller urban centers and rural settlements is in harmony with the principles set out by the SQA, because it too addresses urban issues with an integrated vision, not limited to economic factors, for sustainable development of the territory, environmental protection, and the enhancement of not only physical assets but also intangible traditions and societal values.

Conclusion

As stated above, the COVID-19 pandemic has highlighted the inadequacy of the current urban settlement model, which has accepted as the inevitable urbanization trend for much of humanity in the coming decades. Hence, there is a need to identify alternative models, which are now even more likely to be realized thanks to new technologies. This difficult situation, in which the whole planet finds itself, when it finally ends, will certainly have significant consequences in many sectors, not only the economy, whose recovery will certainly not be fast. Forecasts from diverse sources all agree that the impact of the pandemic will be higher that of the Great Depression of 1929 and that the entire process will take some years. Hopefully, we can also expect positive impacts from a review of the current globalized consumerist model, which will help think more in terms of global solidarity and in terms of improving everyone's public health and quality of life on a permanent basis.

The COVID-19 crisis clearly put in evidence the possible reduction of daily commuting, the availability of learning and working from home, the efficiency of e-shopping, e-medicine, and many other issues that can bring about radical changes in transport, mobility, and logistics with a visible reduction, in just a few weeks, of atmospheric and other types of pollution in the big metropolitan areas of the world. It has also brought about the reduction, for a time still not foreseeable, of the national GDP of most countries worldwide accompanied by a reduction of incomes for large categories of the population, will which lead to a cut in the consumption of so many items that, so far considered essential, will prove to be superfluous. This "new normal" and the accelerated epochal change based on the widespread use of technologies in all sectors can favour a desirable modification of the current global financial and economic rules, which are still based on concepts dating back over seventy years and established in a profoundly different context by Western countries at the end of World War II. For some decades now, in those urban settlements, atmospheric pollution and water shortages have been on the rise with no clearly defined intervention strategies

in sight. This has been accompanied by unrestricted land use without any respect for the existing peculiarities of of territories and cities or their natural environments. The uncontrolled use of urban land and the growth of informal settlements both go against the principles, fields, and dimensions of the SQA. Accepting, then, that the urbanization process is now unavoidable, in as much as weak or late attempts to stop it have failed, there are still measures we can take to mitigate the ongoing trend that must be evaluated and implemented as soon as possible to reduce negative effects of pollution, environmental damage, disruptive land-use, and natural resource shortages by taking actions oriented toward revamping the rural territories and retaining or resettling their inhabitants.

BRICS member countries, in particular, have, since their creation and in the declarations at every yearly summit from 2013 to 2019, declared their intention to play an active role in the implementation of a new overall development, which will include tackling the issues related to urbanization, and for this purpose they created in 2010 a specific "BRICS Urbanisation Forum."

Also, the New Development Bank, the BRICS countries' operational instrument, among the points of its strategy 2017–2021 (NDB n.d.), includes the urban sector. To date, these statements have not found relevant application; instead the BRICS states can make their the declared principles a reality and become the promoters of an innovative vision of urban development on their respective continents, striving to accurately assess problems and creatively find solutions.

It is urgent, therefore, to reflect upon urbanization processes and how to mitigate them and rebalance the unequal rural–urban equation in any way and wherever possible. We must do this in order to save local heritage, specific peculiarities of place, tangible and intangible patrimony, and other necessary elements to assure smaller cities and towns can undergo permanent, integrated development. Modern technologies can provide effective tools in favoring territorial reuse through compatible mobility infrastructures, communication networks, renewable energies, together conceived of as "smart corridors," as a way to enhance human settlements and the social cohesion of their inhabitants, and to protect the environment, heritage, patrimony, and local economies.

A comprehensive approach, as is currently being argued for by SQT, is still not only the best way to manage complex urbanization issues and to assure a urban–rural territorial rebalance, but it also the best tool we have to fight climate change and other future emergency events.

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