FEEM
FONDAZIONE ENI ENRICO MATTEI

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Report

Which Future for Cities after COVID-19
An international Survey

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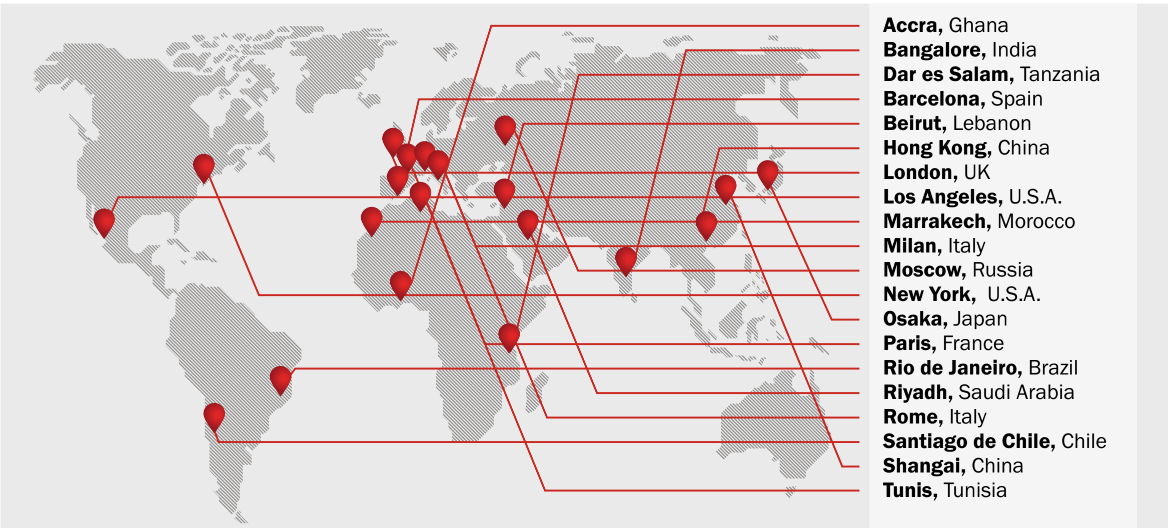

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01 The Survey

The COVID-19 crisis has had significant impacts on public health, on the lives of millions of people, and on economic development prospects at all levels, international, national, and local. All over the world, cities have been at the forefront of the crisis, as first responders to the needs of the population, as managers of the exceptional regulations needed to overcome the situation, and as promoters of the reopening and relaunching of economic and social life. The effects of the crisis will be felt for a long time, and this will require innovative responses that will see cities as protagonists.

To initiate a reflection on these trends, an **International Survey** has been proposed, to discuss the **short-term and medium-term impacts** of COVID-19 (2-3 years) in large cities/metropolitan areas.

The proponents of the Survey are:
Francesco Bandarin, Former UNESCO ADG Culture
Enrico Ciciotti, Former Dean, Faculty of Economics, Catholic University of Piacenza
Marco Cremaschi, Centre d'études européennes et de politique comparée, Sciences Po, Paris
Paolo Perulli, University of Eastern Piedmont.

FEEM has offered valuable staff support, including **Diana Shendrikova** and **Giovanna Madera**.

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Part 1: An International Survey

Methodology

The Survey was organised in 2 phases as follows:

- In the first phase, a questionnaire was sent by the authors to major experts in Urban and Environmental Planning, Economists, Sociologists from around the world, with open questions focused on 12 key topics playing a significant role in urban economies:
  - *access to services and goods*
  - *transportation*
  - *public spaces*
  - *tourism*
  - *culture*
  - *housing and social services*
  - *health services*
  - *work organisation*
  - *production systems*
  - *consumption*
  - *urbanisation*
  - *governance*

  25 respondents in the first phase provided qualitative answers, with short statements focused on the specific situation of their cities/urban contexts. Annex 1 of the Report contains the questionnaire with open questions which was sent by the authors to the 25 experts. During the first phase, the respondents were asked to provide qualitative answers, with short statements.
- During the second phase, a summary of the results (a set of answers to closed questions divided into 12 tables with a focus on “main issue”, “topic”, and “mark”) was resubmitted to the experts. Each participant was asked to validate the summary of the results of the first phase by giving a score from 1 (minimum) to 10 (maximum) according to the degree of agreement/disagreement with the statements listed in the “topic” section. The “Mark” section refers to the number of the first-phase survey respondents who agreed with each topic statement. Annex 2 of this Report contain a synthesis of the responses to the questionnaire. The synthetic results were elaborated by the research group and sent to the experts during the second phase for their agreement/disagreement score.
- The results were analysed by the research team, both from a qualitative and quantitative perspective, with generic outcomes presented in the executive summary.
- In the second phase, a full report with detailed analysis, focused on the 20 cities involved in the survey, was published by the authors.
- The full report is divided in two parts. The first consists of four chapters, each one dedicated to the four relevant macro topics incorporating the 12 above-mentioned topics of the Survey.

  The four chapters/macro topics are:
  1. The world of production
  2. Consumption patterns
  3. Basic urban services
  4. Patterns of urbanisation

- In the second part, the research team analysed reports and official papers from International Organizations, issued since the very beginning of the virus spreading and strictly related to it, in order to identify the main trends, point out similarities, and possible discrepancies with the results and key findings of the Survey.

Respondents

We would like to express our sincere gratitude to the experts that participated in the survey. Their contributions made this research possible.

- Abdelaali Benchekroun, Researcher in Economics and Development and Artist, Marrakesh
- Donatius Kamamba, Architectural conservator, Lecturer at the University of Dar es Salaam, College of Engineering and Technology, College of Humanities
- Hiroshi Okano, Former Vice-director of Urban Research Plaza, Professor of Graduate School of Business, Osaka City University.
- Jad Tabet, Expert Member of the UNESCO World Heritage Committee and Vice-President of Patrimoine Sans Frontières, an NGO based in Paris, president of the organisation of Arab architects
- Joan Clos, Former Secretary UN-Habitat and former Mayor of Barcelona
- Jonathan Aronson, Professor at USC University of Southern California, Department of Political Science and International Relations
- Mona Harb, Professor of Urban Studies and Politics at the American University of Beirut, co-leads the inclusive urban governance platform of the Beirut Urban Lab
- Wing Shing Tang, Professor at the Department of Geography at Hong Kong Baptist University
- Zhou Jian, Professor at College of Architecture and Urban Planning (CAUP), Tongji University
- Denis Leontiev, Architect, Co-founder and CEO of Strelka KB, consulting agency at the Institute for Media, Architecture and Design in Moscow
- Weiping Wu, professor of Urban Planning at Columbia GSAPP and Director of the M.S. Urban Planning programme.
- M.Vitor Serra and Teresa Serra, Rio de Janeiro, Urban Development Specialists (formerly World Bank).
- Julio D Dávila, Professor of Urban Policy and International Development and Director of the Development Planning Unit, UCL London
- Neema Kudva, Associate professor of City and Regional Planning at Cornell University, Ithaca New York
- Remy Prud'Homme, Professor emeritus at Paris XII University, visiting professor at the MIT, former deputy director of the Environment Directorate of the OECD
- Kais Samarrai, Senior vice president of the Public Investment Fund, Saudi Arabia, PIF main advisor for the master planning and urban design urban development programmes as part of the transformation plan of Saudi Arabia 2030.
- Alessandro Balducci, Full professor of Planning and Urban Policies at Politecnico di Milano
- Lorenzo Bellicini, Technical Director CRESME RICERCHE
- Nada Al Hassan, Head of the Sub-Regional Maghreb office UN-Habitat, Tunis
- Margarita Greene, Full Professor at the School of Architecture, Universidad Católica de Chile, and part of the Centre for Sustainable Urban Development, CEDEUS
- Michael Cohen, Director of the Ph.D. programme in Public and Urban Policy at the Milano School of Policy, Management, and Environment
- Eric Huybrechts, Senior Architect and Urban/Regional Planner, member of Isocarp (scientific council, France representative), Icomos (working group on Climate and Heritage), Société Française des Urbanistes (Scientific council) and Officer of the Royal Order of Sahametrey (Kingdom of Cambodia)
- George Owusu, Professor of the Institute of Statistical, Social and Economic Research (ISSER) and Director of the Centre for Urban Management Studies, University of Ghana.
- Saskia Sassen, Robert S. Lynd Professor of Sociology at Columbia University and Centennial visiting Professor at the London School of Economics
- Kala S. Sridhar, Professor at the Institute for Social and Economic Change (ISEC), Bengaluru, India.

Introduction: the "augmented" city

The research team developed and assessed over 200 statements, provided by the experts as answers to the dedicated questionnaires reflecting the situations in some 20 global cities both from the global North and from the global South, chosen to depict a representative picture of the world trends and regional specific aspects. These answers generated an intricate map of the impacts and priorities of the global urban world, analysed in this Report. The central message of this survey is that things have changed, these changes will be permanent, and cities are the answer, with their ability to connect people, being hubs and vital nodes of social and economic development and innovation and do not represent the problem in themselves.

In fact, respondents reached a consensus on a few elements.

The first dimension is related to cities' short-term reactions to Covid-19. Firstly, the crisis exposes the limited capacity of cities (and states) to manage epidemic prevention and control. Cities are not equipped to cope with the urban management issues posed by the pandemic. Secondly, the limits of governance systems suggest that 'mistakes were made' both on the governmental and local levels. And, finally, experts also expect that normalcy will gradually return in 2-3 years, whereas there is still a threat of pandemic's return.

The second dimension is related to long-term impacts and permanent changes in individual behaviour and collective organization of cities. There is agreement among the experts that consequences of the pandemic are likely to provoke major structural impacts:

- The recent, unexpected expansion of the public sector due to the need for prompt action and mediation between various actors (public and private);
- The acceleration of the ongoing integration between the urban (material infrastructures) and the digital (immaterial domain).

The increase of telework and smart work - its most commonly-used type, is paramount and will severely impact peoples' homes, transforming them in a sort of home-offices (for those who have one, with severe consequences for cities in the Global South,

1 See Annex 1 and 2.

where the population density is high and the quality of households leaves much to be desired). Artificial intelligence will increasingly affect urban logistics and communication networks that already operate some techno-infrastructural systems. Public spaces will also be involved in this transformation. In particular, it appears necessary to rethink the time and space allocated to working and learning.

Therefore, the main emphasis which the majority of experts agree on is the need to manage the transition of the cities and invest in building robustness and redundancy into the system. Post-Covid-19 cities will need to redesign public spaces and residential buildings in respect of the environment and social distancing requirements and improve technical networks to respond to the increased intensity of use.

Respondents agree that cities will, nevertheless, remain attractive. In this context, cities have the responsibility to build up a new alliance between territory and networks, hardware and software, urban space and underground infrastructure, offline and online. The recommendations of the experts vary among each other but are all aligned upon the need to enhance the public (social services), private (market-led activities) and infrastructural (material and immaterial) threefold domains of the city. The result of these processes would be an 'augmented' city that could either be fairer or more repressive, depending on the prevailing policies.

Each city is facing different impacts of the pandemic, shaped by structural issues such as social inequalities, wars, disease, and extreme climate events. In fact, the crisis is hitting harder those vulnerable populations living in informal settlements and slums, particularly in the Global South.

The world of production

Will the world of production be only temporarily affected by the pandemic, or will we see permanent changes? In case the changes are permanent, how will they look like? This major question is related to another important issue. Will cities in the North and South of the world experience different patterns of production giving rise to further polarisation in the world economy, or might the existing gap be reduced? And finally, a third question arises: will market forces drive the transition or will States regain a more significant role and momentum?

With regards to the first question (Will the world of production be only temporarily affected by the pandemic or will we see permanent changes, and if so, what will they look like?), the majority of respondents are convinced that major permanent changes will occur. Due to the pandemic, we have seen a world-scale experiment of online work in non-manual jobs (e.g. education, business, culture, services and even health, personal assistance, and delivery). The estimates, regarding telework, find broad agreement both among experts and official statistical data from different parts of the world, especially in developed countries. According to respondents, in Paris and its suburbs telework will rise from 4% to 40% of total non-manual jobs. This is consistent with the University of Chicago's estimates, claiming that 37% of US jobs could be performed entirely at home (Montgomery County Government, 2020b). Some advantages will derive from telework in terms of better choices for workers translated in a more equilibrated work-life balance, a reduction of travel time and environmentally beneficial outcomes. The main disadvantages will be a further polarisation between online and offline workers, and the possibility that pressure on wages will reduce workers' incomes. Moreover, according to our Chinese respondent, as online work expands, cyber security should become a priority (Shanghai).

An interesting response to the second question (Will cities in the North and South of the world experience different patterns of production giving rise to further polarisation in the world economy, or might the existing gap be reduced?) has emerged from the Survey and can be summarized in following terms: the South is already in the North, and the North is already within the South. Seen through this lens, precarious work in a neoliberal world is also part of the global South: for example, a low-income mother working 2 jobs as a caregiver and living in rental housing in a marginal neighbourhood in a US city suffers some of the same uncertainties and risks as a daily wage domestic helper living in a low-income settlement in an Indian city. In other words, internal polarisation within cities (between the rich and the poor) will be increased, and poorer parts of the cities of the Northern hemisphere will perform similarly to the Global South cities.

A third major trend and a possible side-effect of the pandemic will be the enforcement of a State-driven economy. In most developing countries the State already accounts for 75% of the economy, as in Marrakech (Morocco). Furthermore, according to our respondents, in the global North too, the pandemic will expand the role of the State in mitigating the impact of job and income losses and avoiding widespread social disruption. This will require new public institutional arrangements and investments in health, digital infrastructures, social services and housing, transport, and energy. Most economies will shrink in size, with massive job losses in the short term. Besides, there will be a lasting impact on manufacturing sector, changing the production of goods and services, while consumption will be reduced with the consumers assuming a more cautious behaviour, and the sector is likely to take years to recover. At the same time, we will also witness some structural changes: there will be an increasing trend towards re-internalizing activities, re-shoring production and orchestrating regional (instead of global) value chains. Many countries will take a path of restructuring their economies to be more self-sufficient.

1.1 Work organisation

In the opinion of many of the respondents, work organisation will be severely affected in the short/medium term, with massive job losses and unemployment due to the economies' contraction at the global level. The main trends identified are the following:

(i) The expansion of non-manual online work options and their extensive use is a global trend, observed both in the North and in the South of the world. While online transactions have experienced a real boom during pandemic not only in the developed, but also in the developing countries,

2 It means going beyond the concept of a Smart City, by increasing cities' capacity to serve their citizens through the use of innovative technologies and public-private partnerships, a spatial/cultural/social/economic device for enhancing our contemporary life, individual and collective, informal and institutional.

as our respondent from Ghana (Accra) testifies. Surely the crisis will accelerate the shift, but firms should prepare their internal structural organization for that. It will require a significant cultural change in the enterprises. To cope with the need for digitalization is a challenge both for local governments and State infrastructural policies. Hence more broadband infrastructures will be needed in geographical (less developed countries) and urban peripheries in different parts of the world. Incentives to reduce the digital divide should be supplied by state and local governments, IT companies should be driven to cover the areas still excluded by digitalization. Furthermore, the Survey shows that some unexpected consequences will probably arise, both positive and negative. As work can be done virtually, this will lead to creating less physical space for work provided by the employers in form of traditional offices and thus moving costs of services, infrastructures, and maintenance further onto workers' shoulders in certain sectors. It is useful to note, that along with essential services, there are additional and not less important ones (including healthcare and caregiving services) that need to be available at the neighbourhood level: nursing care, schooling, building and janitorial care, repair shops of various types.

(ii) Manual work will be profoundly affected as well as low skilled workers involved in it. Automation at the workplace will increase, scaling-up machines based on artificial intelligence and Internet of Things will gain more importance, robots and drones will be deployed at the expense of less qualified workers. Social distancing will remain impossible to apply for low skilled service jobs, like cleaning and maintenance leading to an increase of social polarisation. Even though many forms of manual work, usually done by unskilled workers and migrants, may be still possible with social distancing measures adopted, (e.g., construction, delivery of online shopping items), some of the forms will remain more problematic (cleaning, care-giving and so forth). Therefore, a push towards greater automation is envisaged, where applicable. It is interesting to note that in Bangalore (India), there were restaurants where robots were serving as waiters and waitresses even before the pandemic, therefore, where social distancing is not applicable, the substitution of workers with robots and drones is a possible way forward. The expert from Hong Kong underlines the city's particular situation: while collective bargaining is not allowed there, minimum wages have only been recently implemented. The Government continues to resist the introduction of unemployment benefits due to the pandemic. This raises a big problem, because after the creation of huge industrial production facilities in Mainland China, manufacturing activities have long been relocated away from Hong Kong. As a consequence, the city has shifted its focus on the financial sector and China has started to increase its control over industry in the city. Unfortunately, after the 2019 protests and the 2020 pandemic the financial sector has experienced a deep crisis, the number of professional jobs available to locals has not increased. What was left after all these transformations is a growing number of low-skilled service workers, such as janitors, waiters and home caregivers. In many ways a dramatic change in the very concept of being a worker has been around for several years also in a city like New York, where many manual workers are afraid of losing their jobs. Still, if we consider an organizational set up of a huge company, like Amazon, we see both vast numbers of manual workers and vast numbers of machines that need to be operated and mobilized. Thus, two vectors seem to emerge: on the one hand the "scaling up" of manual work, with the probable deployment of many machines and, on the other hand, an expansion of non-manual work and a job transformation from manual to automatized. According to our respondents, interesting changes are likely to occur in some cities of advanced economies (e.g. in Los Angeles). The switch from traditional manual factory and warehouse jobs to non-manual jobs will continue, accelerated by robots, Artificial Intelligence, and 3D printing. In the medium-term perspective, delivery jobs should inevitably increase, but self-driving vehicles will also take a toll on jobs since drones are more efficient as they don't get sick, and don't unionize. Uber and Lyft will remain operating, but taxis could be doomed in their present form in many places with more training needed for manufacturing and driving jobs to be competitive in the future. To sum up, manual work will be deeply affected in developed cities of the world and will change towards increased automation and more social uncertainty.

(iii) In developing countries, for example India, the challenge is quite different – the bulk of employment is characterized by low-skilled workers in the informal sector, especially in smaller cities that are not regional nodes. According to our respondent from Rio (Brazil), a large pool of workers in the service sector commute daily from metropolitan slum areas to central and wealthier neighbourhoods where they provide labour in the formal sector as drivers, cleaners, cooks, caregivers for the young, old and sick, or in the informal sector. Once the crisis comes under a relative control, implementing a large programme of slum clearance and minor urban improvement works in the poorer areas of the metropolitan cities would provide an opportunity to absorb the segment of the workforce mentioned above. Some processes of de-location of both manual and non-manual jobs from the inner city to suburbs will occur (Dar Es Salaam). According to other respondents, the intensity of commuting patterns into the core cities is likely to fall, but a possible decrease in rents in more central areas may represent an incentive for smaller companies not to move out to poorly connected peripheral areas and to avoid depopulation and crisis of service businesses and restaurants in the central areas. Local policies could use this dynamic to attract small and agile start-ups that need proximity.

1.2 Production systems

To sum up, the emerging scenario will be characterised by:

(i) A crisis of the globalization model, with the strengthening of national strategic production and in general a greater reliance on local firms and the possible reshoring of production to increase domestic control over the production chains in strategic industrial sectors. Production chains will be shorter, logistics and the delivery of food and services will combine new and traditional models.

(ii) At the same time, new international supply chains and new commercial alliances will appear (for instance as a consequence of Brexit) but their direction is difficult to predict at this phase.

(iii) Teleworking (any kind of work made remotely, through digital devices, including smart working) will increase significantly. The new era will bring more possibilities of working from home, including small-scale production, with a substantial reduction of mass production. There will be less dependency on waged jobs as labour will shift to self-employment, and more towards enterprises and small businesses. There is a possibility of change to fewer working hours per day and less stress. In cities where infrastructure is not well developed (like Riyadh), working remotely will not be possible in the short-term. However, such infrastructure will be available in the medium and long-term out of sheer necessity.

(iv) The demand for logistics and delivery services will see a boost, and these sectors will become new strategic assets.

In this context, many respondents expressed a concern for food security and see this issue becoming more relevant in the future.

1.3 Tourism

We can make a clear-cut distinction between the impact on international and domestic tourism.

According to respondents, international tourism will experience a complete crisis worldwide. Normality will gradually return in 2-3 years-time, unless a major economic crisis will occur. The tourism sector will be greatly impacted, and air travel will be more expensive and affordable only for the upper-middle classes, according to some experts. Large investments planned in hot spots and designed to accommodate large numbers (for example the construction of Cuzco's new airport) may be postponed or cancelled. Loss of skilled labour for the tourism sector as a whole and visits to tourism attractions will affect mostly the less developed countries, often highly dependent on the tourism sector (Dar es Salaam).

There may be a shift towards internal tourism, more likely in case of big and/or developed countries. Still, extensive internal tourism may sometimes represent a serious challenge, especially in contexts, characterized by lack of physical space and high density of population. In this respect the expert from Japan notes: many people living in big cities reach the coasts near the city (Osaka) for recreation, becoming a problem that demands some restraint. In case of Hong Kong, after SARS (in 2003), mainland Chinese tourists have been visiting the city en masse, contributing to rapid growth in specific sectors of the local economy: the great demand for goods such as powdered-milk for children, cosmetics and branded products have led to the growth of pharmacies, cosmetics stores, expensive watch and clothing shops.

More generally, a geographical divide in the tourism sector can be observed worldwide. In the cities of the Global North and some big countries, like India and China (where an internal North-South division exists), domestic tourism can substitute international arrivals to a certain extent. Individual solutions and high-end tourism might be boosted by wealthy citizens. In the cities of the South, where efforts to promote domestic tourism have failed (Marrakech) and with GDP highly dependent on tourism sector, closed international borders brought the entire sector to a halt.

To overcome the current crisis, the introduction of health passports for residents of global cities could be promoted. Good personal health history might become the "new normal", something like one's credit history, as our expert from Moscow explains.

1.4 Culture

The lockdown marked a global shift – from people going to get experience, to experience coming to people by means of online tours and technology which nevertheless in the long run, cannot substitute live performances and personal cultural experiences. In cities, where cultural events are an important part of social and street life, like the traditional Rio de Janeiro carnival, where the gathering of people itself makes the event, a shift towards a virtual celebration is hard to imagine.

More in general, cultural events, museums and the heritage sector will hardly recover in the medium and long term. Extensive widespread state and private subsidies will be needed throughout the crisis to keep the sector alive. Virtual visits and performances have been boosted by the crisis, but gradually we will see cultural events using more and more open urban spaces. New forms of online art performances will be developed, but many experts agree that the return to direct museum visits is unavoidable and represent a model of cultural experience in itself (Rome). While others consider an integration of online tours and courses for museums, galleries, oceanariums, zoos and planetariums into public education programmes possible (Moscow).

Cultural industries, and the artisan and crafts sector in particularly, will be severely hit as consumption shrinks and tourism numbers fall. This situation requires new forms of support from public institutions at every level, from local governments to international organizations. Many cultural enterprises are already subsidized or government-owned and only need to be compensated for their loss of ticket income (Paris). Still, in many cases government support for the arts, art institutions and artists of all kinds will be necessary (Los Angeles). The pandemic may become an opportunity, if it helps encouraging public and private entities to hire artists, dancers, and musicians to perform in smaller, non-urban settings. However, given a persistent fiscal crisis and competition for government support from higher priority sectors in the post-crisis context, recovery will also depend on increased financial contributions from the broader public and local private corporations, some of which already play an important role in supporting cultural activities (Rio de Janeiro).

Some experts recommend to include cultural institutions in the financial programmes of international organizations and nongovernmental donors, to generate additional support and promotion (Moscow).

Consumption patterns

There is strong consensus among respondents on the main effects of the pandemic on consumption patterns and on access to goods and services.

1.5 Shopping

During the last decade, patterns of consumption have been transforming from a model where people flow towards goods and services (i.e. restaurants and grocery stores, museums and cinemas, schools and hospitals) to a model where goods and services come to people (delivery, online retail and services, remote control and digital twins, etc.). The pandemic has only accelerated this transformation. The importance of online channels and e-commerce will grow at an unprecedented pace (from single digits just a few years ago to over 20% in the coming years globally — 22% in 2023, forecasted without considering the effect of the crisis).

Thus, it is not surprising that the near future will be characterised by:

(i) an increase of online shopping, even after the end of the lockdown period.
(ii) At the same time, we will see the coexistence of new and old models of consumption. After the crisis of small businesses in the short term, there will still be enough market space for traditional and neighbourhood shops.
(iii) Online shopping will not completely replace traditional shopping, partly because people still want human interaction, perhaps even more after the confinement (Paris), and partly because even though online shopping was available before, people preferred window shopping (Hong Kong). In many cities of the global South, online transactions are still rare due to the lack of infrastructure and mistrust. The centres of commercial life are still represented by local markets (Accra). People pay more attention to what they consume (fresh organic food to build immunity in Dar es Salaam), and give priority to local products (Paris, Marrakech).

There is a growing idea in Milan and elsewhere that in order to make the city more resilient it is important to reinforce the provision of commercial and public services at the neighbourhood level. The 15 minutes community neighbourhood in Paris will be an example of new “city within the city” approach. This is an interesting perspective which will require specific policies to revitalise such contexts, undermined by both commercial delivery (logistics) and public service organisations in recent years.

There is general agreement on the likeliness of a strong reduction in consumption, given the generalised economic crisis, at least in the short term.

This will lead to:

(i) a possible increase in average consumer prices, a transition from consumption economics to an economics of necessity, reducing spontaneous and unnecessary spending;
(ii) changes in types of food consumption: fresh organic food to help build immunity.

On the other hand, it is important to note that a non-marginal share of respondents believe that the crisis will not determine a relevant general effect, and a return to business-as-usual scenario in the medium-long term is expected instead.

However, many respondents note that shopping malls were already on a crisis even before the pandemic, which is likely to continue given the above-mentioned push towards online shopping on the one hand, and the increased interest in urban local markets, selling locally produced farmers’ products as well as neighbourhood shops on the other. However, in places where traditional markets tend to be very crowded, have poor sanitation, and in general are seen as centres for the potential transmission of the disease by health experts (Accra), the middle and upper classes will likely continue to prefer shopping malls.

Cities will no longer be static but will become agile, mobile and highly adaptable, responding to the needs of customers, and able to satisfy different types of consumers, easily shifting from one type to another if the need arises. Cities should be imagined as “pop-up stores”, with the transformation of shopping malls and hypermarkets into storage and distribution facilities (Moscow).

1.6 Education

According to the majority of respondents, education represents the most affected sector by the pandemic. A general shift toward online education occurred in most institutions, both public and private and in almost all countries, of course with different results and issues related. These are the main trends:

(i) Students have access to online courses provided by the municipal authority, in an undifferentiated form without taking into account the characteristics of individual schools and students (Shanghai).
(ii) Even where online courses have been organised, the quality of education has been lower than before (Tunis).
(iii) Closed primary schools and child-care centres (kindergartens) caused a general systemic blocking due to the difficulty of returning to work for parents (Milan).
(iv) The tremendous and accelerated shift towards online learning will have an impact on education at all levels. A problem of equal access to broadband networks in poor communities or countries is envisaged. Moreover, many universities that thrive on attracting international students will suffer the biggest damage. Peer-to-peer learning and the cultural benefits of diverse student backgrounds and cross-class social interaction will be mostly lost (Riyadh).

A backward path can be envisaged for most cities. The concern for growing inequalities related to digitalization, which can compromise the learning process of children and most vulnerable groups with no access to the necessary technology, is underlined by the OECD (OECD Education and Skills Today, 2020). Furthermore, recent data from the United Nations highlights that the existing gender inequality in access to education risks to increase to critical during the current crisis (United Nations, 2020c)

Nevertheless, the innovative trends in education will be a possible outcome. Continued social distancing may lead to smaller class sizes, more teachers and better computer skills, both those of teachers and students. Teachers are expected to be more creative. Universities are likely to change more fundamentally. Online, distance learning, blended and flip classes will all increase. Large lectures with hundreds of people find themselves squeezed into a classroom will need to be replaced by combining online and in-presence teaching (Milan, Los Angeles).

In some cases, in order to make the re-opening of schools possible a rotation system of 3 days of school for two different groups of students has been implemented. Such solutions can result useful to allow social distancing and keep the education system going (Santiago de Chile).

More generally, the pandemic may reinforce the need to rethink the entire education-training system, particularly in contexts with high rates of illiteracy and school dropouts.

1.7 Internet facilities

In general, digital technology will dominate the near future as far as the access to services and goods is concerned. Obviously, secure payments and refunds appear to be critical to the robustness of online trade.

Furthermore, the need for virtual try-ons is becoming the new normal, so large retailers will need to develop apps using AR (augmented reality) and VR (virtual reality) to make the process as close as possible to the offline shopping experience. At the same time regulations for delivery of goods, consumer-oriented exchange, and return policies will be needed.

The internet will become an increasingly necessary service to ensure access to goods and services – a critical factor for emerging countries to either narrow the gap or fall further behind the more developed ones.

In fact, the risk of an increase in social and geographical inequalities in terms of access to services caused by a digital gap is real. The pandemic is not just amplifying inequality, it is widening it by driving people deeper into the informal sector (e.g. in Indian cities): necessity will drive this change.

1.8 Energy

Global carbon emissions will fall this year as a result of the major disruption to travel, trade and economic activity brought about by the pandemic. What happens next will be crucial for the future of energy sector.

Many calls from various stakeholders to include clean energy technologies as key part of stimulus packages to create jobs and boost economies were made. Stimulus goals align very well with wider clean energy goals, and investment in all fields of clean energy can offer great opportunities to increase employment and boost economic activity.

Energy efficiency offers many win-win opportunities – labour-intensive projects that start quickly and are rooted in local supply chains such as construction and manufacturing.

Service providers can support this process by developing new business models and offering attractive financing support to scale up the installation of energy-efficient solutions at low or zero cost for the consumer.

In this context, and more generally in the renewed interest in aspects related to energy-saving and measures to cope with climate change, the development of renewable energy communities is foreseeable. In the EU, the community energy movement has recently received a boost, in the form of improved legislation, which gives communities and individuals the right to generate, store, consume and sell their own energy (The new Clean Energy Package, agreed by the EU in 2018, starting with the revised Renewable Energy Directive).

The benefits of renewable energy communities are:

(i) Through a renewable energy community people, local authorities and SMEs can set up a legal entity in order to collaborate in the production of renewable energy.
(ii) Thanks to an energy community, citizens can now generate financial resources in order to provide services or to meet local needs. The directive also gives the option for companies to install renewable energy technologies for private homes.

To set up a Local Energy Community, therefore, means the ability of a territory to use its resources in order to acquire a very specific energy autonomy, transforming customers from simple consumers to “prosumers”, that is producers and consumers at the same time. The creation of prosumers means less waste for the distribution network, lower energy prices, a decisive cut in emissions and greater energy autonomy.

Recovery Fund resources can be usefully directed towards these forms of production/use of energy in the logic of the European Green New Deal. It should be emphasised that such communities find their ideal location in cities, both within them, for example, self-organising condominiums, or becoming themselves a renewable energy community. Furthermore, there are also numerous cases of entire industrial districts that are moving towards this approach, in a logic of place-based development based on bottom-up models.

Basic urban services

1.9 Transport

Urban transport was already undergoing important transformations before the COVID-19 crisis, due to the steady increase of telework, the rising cost of private transport and the development of alternative individual urban transport systems.

Although many respondents admit that this transition is generally slow and subject to changes imposed by regulations and pricing, they agree that the COVID-19 crisis has accelerated existing trends:

(i) Public transport, especially in developed countries, has suffered a reduction in demand, due to the increase of telework and the fear of the pandemic (New York). Some of these factors will persist in the medium and long term, especially if telework becomes a more widespread practice. This may also impact the daily and weekly scheduling of transport services.
(ii) These changes may increase the financial deficits of public transit systems and may in the long run limit new investments in construction and technology. Some observers fear that this situation will impact on lower-income livelihoods as it will reduce their ability to reach centrally located jobs.
(iii) The increased use of private transport that has been observed during the crisis could continue in the medium term, but in most situations, it carries a higher cost that may not be affordable by lower income workers. Furthermore, it may increase air pollution and prompt stricter circulation regulations and limitations.
(iv) In developed countries demand could

be partially met by new forms of shared transportation, facilitated by technology. In developing countries this may be more difficult due to the higher levels of congestion.

(v) Individual transport systems (pedestrian, bicycles, scooters and others) had seen a boost before the crisis and we can expect further expansion. In many cities, both in advanced and emerging countries, individual 'green' mobility has been promoted, with significant impacts on the use of urban spaces and infrastructure (Paris, Milan). However, this mostly concerns inner city mobility, younger age groups and is more frequent in developed countries. Individual transport systems are not viable for long commutes on a daily basis and are likely to be of interest only in middle-upper class neighbourhoods (Rio de Janeiro). Therefore, increased support for public transport will be necessary to cope with the potential fall in demand. This will require the introduction of higher health standards and regulations for mass transit, as well as an increased use of technology to optimise flows and transport services.

1.10 Housing

The COVID-19 crisis has brought to the surface existing serious tensions and inequalities in housing provision in cities in both advanced and emerging countries.

In rich countries the middle-upper classes were able to meet the challenges of the confinement, while the situation proved much more serious for lower income groups.

In particular:

(i) Overcrowding became a significant factor in the rapid spread of the virus and forced groups and families to share limited spaces and basic services in ways that prevented full access to work and education (New York).

(ii) The situation was significantly worse in emerging countries, where informal settlements still represent a large share of the housing stock for the lower income population, and especially of migrant workers, a category that was particularly exposed during the pandemic (Bangalore). Social distancing in these areas is almost impossible to maintain, with higher risks for residents during and after the peak of the pandemic.

(iii) Informal workers are likely to suffer more as they do not benefit from the safety nets of regular wage earners (Paris, New York) and are subject to higher risk of eviction.

(iv) Should the economic recovery lag in the medium-term, there would be an increase in the number of homeless or families in distress and in need of social housing assistance.

In spite of the crisis, many respondents expect that the housing demand will continue to grow, while construction programmes will likely slow down and be either delayed or postponed. This will generate additional market tensions.

As for the housing demand the following trends have been identified:

(i) The crisis in the tourism sector (Airbnb) may have a positive effect as a number of apartments could enter the rental market, especially in larger cities.

(ii) Some observers estimate that it is likely that real estate prices will increase, due to a boost of investment linked to high liquidity of the banks (driven by quantitative easing) and stock market uncertainties (Paris). This may further increase the number of unused housing units especially in central urban areas.

(iii) Some respondents noticed that in many countries the migrant population has been severely penalised by the crisis (lack of jobs, housing etc.) and has in part returned home (Bangalore). However, in other countries no effects have been observed so far (Shanghai).

(iv) While it is too early to detect impacts on the urban structure, many observed that it is likely that the COVID-19 crisis will accelerate the trends of displacement of the lower middle-class toward areas where housing is more affordable (New York). This will increase housing demand in peripheral areas and/or in smaller cities.

(v) In developed and emerging countries the key issue will be the provision of affordable housing for the poor, through improvements to informal settlements by reducing density and increasing services (Medellin), and by granting inhabitants legal titles to land and properties, as housing is often the main/sole financial asset available to the poor (Rio de Janeiro).

However, some fear that the coming financial crisis will limit cities' ability to implement social housing and slum upgrading schemes.

In general, it is feared that the economic crisis will have a greater proportional impact on poorer groups, in terms of income, education, and health, increasing already serious inequalities.

The crisis has also exposed the limits of high-density housing design schemes and pushed cities to reflect on possible innovative architectural models, able to respond to the need of groups and families that have to use the living space also for work and education.

While it is too early to detect trends, some think that future housing projects should include collective areas for education (Santiago de Chile) and should also foresee small private individual cells for work purposes (Hong Kong).

Finally, as the crisis has exposed the weakness of the care home systems, where some of the highest numbers of casualties have been recorded, some of the respondents think that this will encourage keeping the elderly at home and exploring new assistance formulas (Milan).

1.11 Health

The COVID-19 crisis has dramatically exposed the limits of health systems largely oriented to address individual needs and oblivious of public health policies, that have consistently suffered budget reductions.

In particular, the shift, in many countries, from public to private health systems has weakened the capacity to prevent the epidemic and provide early responses to the crisis (Milan). This is confirmed by the fact that countries with strong universal health systems, such as South Korea or the Indian State of Kerala have been able to respond better to the crisis (New York, Accra).

The main implications on health systems:

(i) The crisis shows that health planning is much more important than health management and the excessive bureaucratisation of the health system is a major problem that needs to be addressed (Paris).

(ii) Most health systems have been under stress and have required emergency interventions to cope with the surge of demand. Health operators have also been subject to extreme stress, often with severe psychological impacts.

(iii) The crisis has also shown the great inequalities existing in health systems aimed at protecting the population. In many cases, the response has been erratic, with a lack of common policies and protocols on the part of governments, and a lack of data transparency on the spread of the pandemic. In both developed and emerging countries, the poorer part of the population has been left unprotected and has suffered more from the pandemic. Many places have also reported an increase in domestic violence.

(iv) Furthermore, many patients of other diseases have not received due attention during this period (Hong Kong), increasing mortality indirectly linked to the pandemic. This has been confirmed by several reports issued by UN Agencies, that have pointed to the increase in health risks resulting from the diversion of resources to the COVID-19 pandemic.

(v) The crisis has also shown the need to ensure that production and storage of medical supplies is under the control of national authorities. At the national level, ensuring availability of medical supplies (e.g., primary inputs to medications, equipment) will become a national security concern, and will require the design and implementation of a broad programme of research and incentives for local production (Rio de Janeiro).

As pandemics are likely to return, there is a need to invest to improve robustness and reduce redundancy in health systems, as well as improving public information and education, and extending protective measured. New regulations and practices for public health security need to be introduced, to help reduce the spread of epidemics.

There is a need to reform existing systems to address the issues and provide broader coverage to the more vulnerable population. This includes improvements in sanitation in informal settlements (Rio de Janeiro, New York).

The crisis calls in general for new approaches of public health policies, ranging from investments in prevention and response, to the more efficient management of information systems related to epidemics and public health.

Some innovative measures could be introduced in the future to strengthen prevention, such as global monitoring and database systems, health passports, new diagnostic systems (Moscow).

Patterns of urbanisation
The structural determinants of city development will affect how cities develop more than the Covid-19 crisis. The pandemic will reduce, but not eliminate, the need for direct (offline) communication, and cities will remain the main nodes of direct interactions. Although the uses of public space will evolve, respondents are positive that cities will remain attractive.

1.12 Urbanisation

The main trend is stable: patterns and trends of urbanisation are unlikely to change and the COVID-19 crisis is not expected to affect structural trends. The major threats for cities remain social inequalities, war, diseases and extreme climate events, even the growing tension between international blocs (USA-China).

In particular, the respondents underline:

(i) The urbanisation of green areas and urban sprawl will continue through and after the COVID-19 epidemic (Barcelona). The pandemic is unlikely to alter the factors accounting for the movement of people to cities (Accra). In India "social, political and economic conditions in rural areas remain dire, which drives people away and towards safer cities where some jobs and some services are still possible". A sort of a 'business as usual' scenario, where patterns of urbanisation are unaffected and land consumption may even increase. However, cities will remain attractive for most respondents (with the notable exceptions of Beirut, Osaka, Rio de Janeiro and India).

(ii) The media and critics have often accused urban density as the main cause of the spread of COVID-19. However, overcrowding seems the main culprit, and this largely depends on poverty, poor housing or commuting patterns. In many countries, the density of informal settlements makes social distancing impossible. High-density developments are the norm in Hong Kong, Singapore and Seoul, which have not been at the heart of the pandemic. In recent years, most cities have seen an increase of density, like Milan; a reverse trend "could happen only if the need for physical and social distancing will last for a very long period" (Milan).

(iii) As an immediate outcome of the pandemic, affluent people fled cities for lower density places (New York). As a result, rental markets outside metropolitan areas are booming (Los Angeles, Paris, Milan). Higher and middle-income families are more likely to move to the suburbs or second homes (Rio de Janeiro), intensifying the pattern of gated communities in Latin American cities, a less convincing dynamic in Riyadh, Dar es Salaam and Beirut.

(iv) Decentralisation may lead to conflicting outcomes, however, that differ in each city. Families in search of new accommodation may turn to suburban locations (Paris); and smaller towns with "great broadband and decent healthcare" (Los Angeles) have a big opportunity. There could be a trend to transfer the location of workplaces to less populated areas, with impacts on the job market and large opportunities for the revitalisation of small cities, although with a risk of growing inequality (Los Angeles, Milan, Tunis). Though appropriate, revitalisation "for now … is a bit of a challenge" (New York). The development of evenly distributed city nodes may spread opportunities and help "democratise" urban life (Moscow) or nurture a trend for 'hipsturbia' and quality urban suburbs.

(v) However, the income divide between cities and suburbs may polarise political orientations and intensify the conflict on immigration and race (Los Angeles). Increasing sprawl will also reduce the capacity of cities to deliver public services in a negative cycle that may affect public transport in particular (Paris). It might also lead to the isolation of suburbs, in the case of poor and badly serviced areas (Tunis).

(vi) Moreover, decentralisation faces structural limits in several countries with even more diverging outcomes. For instance, Japan has already reached a high population density and extensive urbanisation (Osaka). In China urban areas are far less attractive than metropolises in terms of public services (Shanghai). India tends to enforce restrictive planning regulations (Bangalore). Even more important, economic activity continues to be concentrated in the cities, drawing in populations in the global South (India).

Respondents made several suggestions that are likely reflect local conditions. Governments should try to guide these processes by enhancing the development of metropolitan sub-centres, reducing commuting and devising urban partitions for future lockdowns (Santiago de Chile). Creating new opportunities for the revitalisation of small cities and developing policies to encourage small-scale business centres in the suburbs (Dar es Salaam). Providing better management of urban density areas with more parks, larger sidewalks, less space for cars, more for bicycles and 2 wheel-vehicles (Paris). Adopting the "15-minute" neighbourhood (Shanghai). In the longer term, some functions of central city-metropolitan/urban region area relations may also be redefined (densities of the core and the wide metropolitan area, relations between rural and urban areas, etc.) (Riyadh).

1.13 Public space

A majority of the respondents have clearly stated that public events will decrease, in the short term, and may resume later; however, London will differ from New York, Rome or Milan (New York). The use of public space will necessarily resume rapidly, but the timing will depend on the research on the vaccine (India). If not, new regulations on public space design will emerge (Barcelona).

The use of public spaces has seen significant changes:

(i) Most of the respondents agree that social interaction on the internet will increase permanently (Osaka; Los Angeles); however, this trend is less certain In Moscow, and Hong Kong. In Ghana, for instance, social media platforms have already started to screen live funerals and church services (Accra); even Indian weddings are held online (Bangalore). The internet will be vital to know where there is a meeting and where the area is not overcrowded (Santiago de Chile). Impacts will vary in each city, however (Rome, Tunis).

(ii) In some cases, restrictions on access to public spaces have been used by the authorities to avoid gatherings (Hong Kong). In dense Global South cities with a mild climate, people usually gather in public spaces all year round: the forced lockdown is particularly pressing on the population in over-crowded settlements. In India, where cold weather is not a deterrent to living life in the open, the lockdown has driven people indoors, often into over-crowded homes and settlements.

(iii) Potential restrictions on the movement of people, however, will weaken the tourism and cultural economy and jeopardise large events, like the 2020 Olympics in Tokyo (postponed to 2021) and 2024 in Paris. This, with time, will change the culture of communities (Dar es Salaam).

(iv) Respondents point to the emergence of new uses of open space, the need for new design regulations for both buildings and open spaces, and new patterns of activities affecting different age groups (Rio de Janeiro). The new regulations will address design standards, such as central air conditioning, the specifications of toilets and drainage systems, and regulations on indoor natural ventilation (Shanghai)

Volunteer work and informal group activities have increased and provided support to lower-income groups living in high-risk environments, slums or informal settlements (Rio de Janeiro). There is strong agreement that public events will move to media platforms; also, easier access to the internet will disseminate jobs affecting commuting patterns, jeopardising commerce and office space in some central areas (Rome, Moscow).

The appeal of open public spaces has become apparent during the pandemic: densely populated cities often lack public parks (Marrakesh); semi-public spaces (yards, pocket parks, green roofs open to residents) will become even more important (Moscow). The use of open space and parks will increase because it allows for social interaction while maintaining social distancing (Santiago de Chile, Milan, Tunis). The uses of open spaces will change with adequate policing and security (Latin America, Dar es Salaam).

Green infrastructure has to balance grey infrastructure (roads, buildings, etc.) in order to make cities more resilient to future challenges (e.g. global warming, CO2 emissions, pandemics etc.). It is likely, however, that there will be less spontaneous use and programming, scheduling and agendas, as well as the adaptation of open space infrastructure (for instance, new disinfection devices: Moscow).

1.14 Governance

The respondents have not expressed a single, common trend. Coordination among different levels of government and the redesign of emergency response infrastructures rank high among the governance priorities.

These are some important highlights:

(i) Respondents in cities in the global North agree on a contradictory trend: the pandemic caused an increase in the role of central governments (less approving Dar es Salaam, Barcelona, Moscow, China, Rio, India and Rome). Mayors, local communities and neighbourhoods took on major responsibilities (although so far decentralisation has not been efficient) and deserve more responsibilities (Barcelona, Hong Kong, Osaka, Moscow, Rio, India).

In France, the national government, lost ground compared with local governments and private enterprises (Paris). The US Federal government made states compete. The Indian government's abrupt lockdown decision left "millions of people stranded" (India). Inefficiency, errors and unreadiness (Rome) hindered national responses, while conflicts spread at all levels of governance (Milan). A decentralised form of governance will facilitate the transition (Bangalore, Shanghai). Japan is late in this regard (Osaka); the region of Paris lacks a coherent governance model, notwithstanding recent reforms (Paris). However, governance tensions abound. Multi-stakeholder negotiations would yield the best results, but they are cumbersome and slow (Los Angeles).

(ii) Respondents from the Global South and the Brics talked about more nuanced trends: emergency and financial needs strengthened the role of national governments but expectations underlie an increase in deregulation and the digitalization of public data, to map and predict outbreaks. The capacity of deploying debt to sustain economies strengthened the institutional role of national states at the expense of local governments, or even the private sector (Latin America). National states managing the crisis showed that “the state is needed” also in the search for sustainable development (Marrakesh). In Ghana, the government adopted policies that local authorities had implemented (Accra). The strong involvement of central governments is sought after (Tunis, Marrakesh, Libya) in health, energy and water provision, security, and for the socio-economic response (Tunis).

In any case, there cannot be a single workable holistic solution for all cities (Dar es Salaam), and local authorities need more resources and autonomy. All cities are different, but the pandemic has highlighted the importance of recognising specific realities and differences (Latin America). Local authorities are more agile and efficient in managing the emergency. However, privatisation may still seem an alternative to corruption and bloated government agencies, notwithstanding questionable tests in the public transport sector (Rio de Janeiro).

In conclusion, coordination among different levels of government and the redesign of emergency response protocols rank high among the governance priorities. The COVID-19 crisis highlighted a significant number of solidarity initiatives on the part of households, self-help and informal groups (Rio de Janeiro).

Despite many concerns, the exploitation of big data will expand in the medium term, though this shift is prone to misuse by totalitarian systems (Riyadh), and will however increase privacy concerns and fears for democracy (Hong Kong).

Conclusion

Our Survey is not an outline of the future, as the short-term dimension of 2-3 years has been privileged and explored. However, the nature of the major impacts of the pandemic has driven the authors to conclude with some considerations of a more general character.

First of all, the current crisis of globalisation emerges as a future trend. In the past, global cities were included in the command and control system of global markets and global value chains. This is no longer true. The nature of globalisation is changing fast, starting from the evidence that connectivity and mobility are now opposed and not allied. Physical presence in many spheres and contexts will be reduced, and remote contacts will be the rule in many sectors of economic and social life.

This raises a first analytical question: how will personal and collective modes of behaviour change due to the pandemic? We are not able to give a definitive response, but exploring changes that are affecting work, transport, energy consumption, leisure, housing is aimed to provide an initial basis for discussion and future research.

A second crucial point is the reaction of cities and collective action. How cities react to the crisis is due not only to the pandemic but also to previous contradictions and imbalances in global value chains and interrelations. A change of the acquired model of neoliberal market competition between cities could be the outcome, and new forms of urban resilience and inter-urban cooperation could be the result.

Cities will need to elaborate plans for prompt action around the nodal points of sustainability, security and health: these are primary functions of urban life, even more urgent and important than the economic imperatives of market competition.

But how can this shift be addressed? The necessary reference point is the Sustainable Development Goals (SDGs) adopted by United Nations Member States in 2015. In particular Goal 11: Make cities inclusive, safe, resilient and sustainable, and its specific objectives. This very Goal implies precise connections to the new trends mentioned in the Survey, such as: adequate, safe and affordable housing and basic services; sustainable transport systems; inclusive and sustainable urbanisation and participatory, integrated and sustainable human settlement planning; the protection and safeguard of cultural and natural heritage; attention to air quality and municipal waste management; integrated policies and plans towards inclusion, resource efficiency, mitigation of and adaptation to climate change, and resilience to disasters.

In order to address a strategic approach centred upon cities and urban governance we need to consider a longer time span: 10-20 years.. It goes without saying, that cities are the main collective actors of the living, working, consumption conditions of the world population, they also allow for “last mile” implementation of environmental, social, structural policies elaborated centrally by national governments. That is why, cities need more autonomy and direct governance. A global call for cities is to overcome the divide between developed and developing nations, which has been exacerbated by the pandemic.

Global inequalities are growing in many respects and cities are a mirror of such an unequal world. How to respond to the risks of a new divergence is the main objective of the following policy recommendations that emerge from the Survey.

Starting from the foregoing analysis, it is possible to identify the elements characterising a new urban global policy for recovering from Covid-19 with a sustainable development approach. They can be summarised as follows:

a. Greater orientation towards internal markets and the new needs of citizens.

Housing, culture, health, energy, mobility are the principal sectors on which new investments must be focused. Some of these has been heavily affected by Covid-19, both in negative terms (e.g. job losses in retail, culture, leisure, construction, tourism, transport) as well as in positive terms, with the development of new markets in health and social assistance, sustainable mobility and urban logistics, digitalisation. An important innovative aspect of the new policy is the need to overcome the exclusively technological and sectorial approach adopted by previous “smart city” policies, favouring the matching of demand and supply of new technologies and the diffusion of strategic integrated planning, also thanks to the circulation of good practices.

b. Integrated urban strategic planning policy at the local level.

The legitimacy of policies, which also focus on the internal market, requires the involvement of end users and beneficiaries of innovation policies. This marks the passage from the production of goods and services led by a top-down model, to different forms and levels of co-production with consumers, customers, and citizens.

This approach implies integrated, strategic urban planning in order to promote systemic innovation, both in developed and developing cities. In both cases, citizens' needs and voices should be included and creative solutions to the informal growth of cities should be encouraged. The pivotal role of universities in producing and spreading innovation and the network of knowledge producers that connect cities in the North and South of the world are key components of the policy.

c. A governance model based on a centrally integrated bottom-up approach.

The use of bottom-up approaches must be central in the case of complex initiatives. It is essential to aggregate local demand at regional and national levels to achieve the appropriate economies of scale in the production of new goods and services. From an economic, social, and environmental point of view, cities must operate according to the logic of sustainable development centred on bottom-up governance models, framed in national and continental strategic frameworks. In this way it is possible to select the markets/sectors that are considered strategic; to facilitate the design and financing phases, and to integrate individual projects according to a logic of world cooperation and international synergy networks.

These elements of the long-term scenario can cut across current policies of city resilience, recovery and reaction to provide a significant external impetus to such efforts.

03

Part 2: International Organizations. Response analysis

After spending months monitoring the situation on the spread of the pandemic around the globe in real time and trying to quantify the damages to the public health and the economy, various International Organizations focused in their reports on the aftermath of the first wave of the pandemic, including the global lockdown, confirming or correcting previous forecasts. Now that everyone is eager to restart, despite the continuous spread of the virus, the International Organizations suggest numerous scenarios, from the most pessimistic to relatively optimistic, that vary depending on the possibility of a second wave of lockdowns (already in place in some countries), the speed of economic recovery, and progress on a COVID-19 vaccine. Fundamental uncertainty around the evolution of the pandemic is a key factor shaping the economic outlook and hinders a clear characterisation of the balance of risks.

Following the logic of the Survey "Which future for the Cities after COVID-19", we organised the key points of the reports and official papers by International Organizations in four relevant macro areas:

1. The world of production
2. Consumption patterns
3. Basic urban services
4. Patterns of urbanisations

The world of production

The pandemic has had a significant impact on all spheres of life, but the world of production, both material and immaterial was one of the most profoundly and immediately affected. The organization of work and supply chains, tourism and culture, everything that constitutes the backbone of the world economy, and in different proportions national economies, had to adapt rapidly to a "new normal", that revolutionised some sectors and left irreparable scars (at least in the very short term) on others.

1.1 The organisation of work

The International Labour Organization in its first report dedicated to the pandemic focused on the increase in working poverty. The strain on incomes resulting from the decline in economic activity will devastate workers close to or below the poverty line. In the mid and high scenarios, there will be between 20.1 million and 35.0 million more people in working poverty than before pre-COVID-19 estimates for 2020. (International Labour Organization, 2020a) The second ILO report was dedicated to employment contraction and risks in the workplace. Through massive economic disruption, the COVID-19 crisis is affecting the world's workforce of 3.3 billion. (International Labour Organization, 2020b)

From the employment point of view the ILO defines the pandemic as "The most severe crisis since the Second World War". Job losses are rising rapidly around the world. In terms of regional differences, the share of employment in at-risk sectors varies from 26.4 per cent in Africa to 43.2 per cent in the Americas. These regions have higher shares of informality, particularly Africa, with lower levels of social protection. (International Labour Organization, 2020b) Globally, there are 136 million workers in human health and social work activities, including nurses, doctors and other health workers, workers in residential care facilities and social workers, as well as support workers, such as laundry and cleaning staff, who face a serious risk of contracting COVID-19 in the workplace. Approximately 70 per cent of jobs in the sector are held by women.

The third report tackled the issue of unprecedented working hour losses and the informal economy. According to the ILO, global working hours declined in the first quarter of 2020 by an estimated 4.5 per cent (equivalent to approximately 130 million full-time jobs, assuming a 48-hour working week), compared to the pre-crisis situation (fourth quarter of 2019). Global working hours in the second quarter are expected to be 10.5 per cent lower than in the last pre-crisis quarter. This is equivalent to 305 million full-time jobs, which represents a significant deterioration on the ILO's previous estimate of 195 million for the second quarter. This has been driven mainly by the prolongation and extension of containment measures. (International Labour Organization, 2020c)

Another serious issue that developed countries had to face is the lack of seasonal labour, usually immigrant workers, especially in the agricultural sector. This has caused a serious problem and pushed many countries to take urgent measures to facilitate employment and to legalise some illegal immigrants. In most cases, this has enabled people with limited work permits – in terms of rights or duration – to remain in their host country to work. Notably, this is the case for the seasonal worker programme and Pacific labour scheme participants in Australia, and for seasonal workers in agriculture in Greece, Israel (until end May), as well as in Italy, Norway, the Czech Republic and the United States. In some countries, facilitations are mostly administrative, allowing employers to delay the recruitment or to offer longer contracts (e.g. Canada, Belgium). (OECD, 2020c)

An April 2020 study by the University of Chicago found that 37 per cent of jobs in the U.S. can be performed entirely at home. Workers in occupations that can be performed at home typically earn more than workers in occupations that cannot, so an even larger portion of wages are earned in such jobs (Montgomery County Government, 2020b). The same study suggests that if, during the pandemic, employers find that employees can be productive when working remotely, it could accelerate the recent push towards decentralized workforces.

Consequently, an important lesson from the COVID-19 crisis, largely driven by a combination of the "Zoom" and "Greta" effects, is that teleworking is compatible with productivity and contributes to reducing negative environmental externalities. (OECD, 2020a). More telework options can also offer certain workers more choices about where to live and whether to commute. At the same time, more options to work from anywhere may stimulate downward pressure on wages and put full-time remote workers at a disadvantage for job advancement and security compared with in-office workers who develop stronger interpersonal working relationships with their co-workers and supervisors.(Montgomery County Government, 2020a)

It is important to note, that many other workers in jobs that could not be done remotely were either furloughed or laid off by their employers or (if in a job deemed essential) continued working at the risk of infection. Workers in jobs that could not be done remotely faced two big risks: economic hardship and/or infection. (Montgomery County Government, 2020a)

The pandemic has demonstrated the advantages of telework, both for employers and employees, but at the same time may have some hidden threats. It also deepened existing inequalities between those who can work from home and those who cannot, those who have stable jobs and those who do not.

1.2 Production systems

COVID-19 has re-ignited an old debate about the supply chain risks associated with international production, but there is no evidence that economies would have fared better in the absence of global value chains, as government lockdowns have also affected the supply of domestic inputs (OECD, 2020b). COVID-19 has highlighted both the strengths and weaknesses of GVCs, including for the supply of essential products. Past experience suggests that international production networks can be disrupted and play a role in the propagation of economic shocks across countries and industries. But they also help firms and countries to recover faster. According to the OECD, governments can support the efforts of firms to build more resilient GVCs by collecting and sharing information on potential concentration and bottlenecks upstream, by developing stress tests for essential supply chains and by creating a conducive regulatory environment which is not a source of additional, policy-related, uncertainty (OECD, 2020b).

The World Bank gives general instructions to governments and decision makers on how to face the crisis Given the negative outlook of the pandemic after addressing the immediate health crisis, countries need to make productivity-enhancing reforms a priority. This includes facilitating investment in human and physical capital, as well as research and development; encouraging the reallocation of resources toward more productive sectors; fostering technology adoption and innovation; and promoting a growth-friendly macroeconomic and institutional environment (World Bank Group, 2020).

The fall in productivity significantly affected economic growth forecasts throughout the world. According to the latest report by the International Monetary Fund, growth in the advanced economy group is projected at -8.0 per cent in 2020, 1.9 percentage points lower than in the April 2020 WEO. In 2021, the advanced economy growth rate is projected to strengthen to 4.8 per cent, leaving 2021 GDP for the group (US, Japan, UK, Germany, France, Italy, Spain) about 4 per cent below its 2019 level (International Monetary Fund, 2020a).

For the first time, all regions are projected to experience negative growth in 2020. There are, however, substantial differences across individual economies, reflecting the evolution of the pandemic and the effectiveness of containment strategies; variation in economic structure (for example, dependence on severely affected sectors, such as tourism and oil);

reliance on external financial flows, including remittances; and pre-crisis growth trends (International Monetary Fund, 2020a).

1.3 Tourism

Tourism is one of the sectors that has been very heavily hit since the very beginning of the crisis and for which the recovery time is hardest to predict with long-lasting consequences expected for years to come from both an economic and psychological perspective, both for those operating in the sector and for potential tourists, de-motivated by the economic recession and risks of contagion. The coronavirus pandemic is “the worst crisis that international tourism has faced since records began (1950),” according to the UNWTO (World Economic Forum, 2020). The latest (July 2020) edition of the UNWTO World Tourism Barometer shows that the near-complete lockdown imposed in response to the pandemic led to a 98 per cent fall in international tourist numbers in May, when compared to 2019 (International Monetary Fund, 2020a).

By mid-April, the OECD estimated that spending on “recreation, culture, hotels and restaurants” had declined by 75% in G7 countries (UNESCO, 2020d).

The OECD report says that the sector will have a hard time throughout 2020 and beyond, even in the case of positive epidemiological developments. In March, Tourism Economics (a consultancy agency, specialised in global travel data gathering) estimated a fall of global arrivals in 2020 of between 10.5% and 17.9% compared with 2019 (263 million fewer arrivals), the World Travel & Tourism Council (WTTC) has also published a study indicating that global travel will be down by 25% throughout the year, reducing jobs in the industry by 12-14%, which means 40-50 million jobs globally. This figure was subsequently corrected by the UNWTO, that predicts between 100 and 120 million jobs in tourism are at risk as a result of the collapse in demand for international travel.

In the near term, the expectation is that domestic tourism offers the main opportunity for driving recovery and supporting the tourism sector. The domestic tourism economy is significant and accounts for around 75% of the total tourism economy in OECD countries (OECD, 2020d). At the same time developing countries and island economies, highly dependent on international tourism and where the possibilities for domestic tourism development are very limited, risk an even deeper crisis. In 2018, tourism earnings exceeded 50% of GDP in Cook Islands, Maldives and Palau and accounted for approximately 30% of GDP in Samoa and Vanuatu. 30% of total employment in Cook Islands, Fiji, Niue, Palau and Vanuatu (UN Economic and Social Commission for Asia and the Pacific). (UNESCO, 2020b).

Nevertheless, since the “improving the sustainability of tourism” is one of the UN’s Sustainable Development Goals, some are now wondering if COVID-19 could present an opportunity for a more responsible and sustainable way of travelling.

1.4 Culture

The cultural and creative sectors, in tandem with tourism, are among the most severely impacted by the pandemic crisis, with cultural tourism making up nearly 40% of world tourism revenues (UNWTO). According to preliminary estimates by Eurostat the COVID-19 crisis may affect about 7.3 million cultural and creative jobs across the EU. Over 30% of the people affected are self-employed and lack adequate social protection (EUROSTAT, 2020). This is a significant economic sector globally worth US$2.250bn annually and accounting for nearly 30 million jobs worldwide, according to the 2015 “Cultural Times” report (UNESCO, 2020c).

The pandemic has also changed our perception of cultural and entertainment activities, the process of digitalization in the cultural sector, already underway, has seen an incredible acceleration, rapidly changing our digital media consumption habits. According to a survey by the World Economic Forum on media consumption, a greater percentage of people say that they are more likely to be willing to pay for subscriptions to access online cultural platforms than before the pandemic. For example, 53% of French internet users placed the consumption of cultural goods at the top of their list of essential activities during the time of confinement (UNESCO, 2020d). According to the International Council of Museums, 95% of countries around the world have closed or partially closed their museums to the public during lockdowns, but many of them have opened their virtual doors to visitors. Indeed, the ICOM has registered a 200% increase in museum website usage. However, according to UNESCO, this process also has a negative side, since it may send the wrong message that cultural content should be free in the long term as well as raising the problem of inclusion, since cultural content is not always adapted to different audiences. (UNESCO, 2020a)

Consumption patterns

The COVID-19 pandemic has changed our perspectives on consumption methods and access to goods and services. On the one hand it has accelerated and facilitated existing processes, such as digitalization and e-commerce, making some services more accessible, incentivising public offices and businesses to digitalize their services. But, on the other hand, it has created a deeper divide and left those slow to adapt (both consumers and businesses) behind and uncertainty about the future evolution of the crisis, along with economic concerns, has made consumers’ behaviour more cautious.

2.1 Access to goods and services

COVID -19 has led to a drastic change in access to goods and services, characterized by a significant trend which has been accelerated by the pandemic: the rise of e-commerce and online shopping; a phenomenon which is here to stay. According to the Morning Consult study, conducted in the USA, almost a quarter of respondents said they don’t think they’ll be comfortable at a mall for at least six months, while a roughly equal share (26 percent) said they weren’t sure when they’d feel comfortable or offered no opinion (Morning Consult, 2020).

In many parts of the world, cities are making sure people remain connected to basic services, such as the water supply, even in situations where supply is not continuous for structural and contingent reasons. Many cities and utilities have agreed to suspend utility shutoffs for residents who are unable to pay their bills, as local leaders scramble to tackle the complex public health threats posed by the COVID-19 pandemic (OECD, 2020a).

Access to education is characterised by two major tendencies: unprecedented digitalization and e-learning and growing inequalities related to it, compromising the learning process of children with learning difficulties and belonging to the most vulnerable groups with no access to the necessary technology. The OECD warns that in this moment of crisis, digital technology holds great promise to provide learners with access to high quality learning. However, most education systems need to pay close attention to ensure that technology does not amplify existing inequalities in access and quality of learning. This is not just a matter of providing access to technology and open learning resources. It will also require maintaining effective social relationships between families, teachers and students – particularly for those students who lack the resilience, learning strategies or engagement to learn on their own (OECD Education and Skills Today, 2020).

Recent United Nations data highlights the existing gender inequality in access to education, and this risk becoming critical during the current crisis since adolescent girls spend significantly more hours on chores compared to their male counterparts. School closures do not just mean that girls are taking on more chores at home, it could also lead to millions more girls dropping out of school before they complete their education, especially girls living in poverty, those with disabilities or living in rural, isolated locations (United Nations, 2020c).

2.2 Consumption

During periods of uncertainty, like the one we are living in now, precautionary savings generally increase, because families and companies do not invest. Much of the money that households and businesses are receiving in the form of grants or aid risks remaining in bank accounts, partly because of anxiety about the future and partly because the opportunities to spend it have generally been reduced.

The UNDP warns that only well-targeted aid programmes can prevent the effects of the crisis on human development. Throwing resources at the economy might not suffice. As discussed, during the lockdown, the priority is not to stimulate demand, as in a standard recession with a shortfall in aggregate demand. The key objective is to design policies that deal with the current compound crisis and promote inclusive human development in the coming years and for future generations. An equity lens is essential because existing inequalities mediate the impacts of the crisis on human development (United Nations Development Programme, 2020).

In early April, the World Trade Organization (WTO) estimated a contraction in world trade of between 13% (optimistic scenario) and 32% (pessimistic scenario). This is strictly related to the drastic drop in production. The halt in global production and transportation also caused a significant decrease in energy consumption. According to an IEA report that analyses daily data through mid-April, countries in full lockdown experienced an average 25% decline in energy demand per week and countries in partial lockdown an average 18% decline. Daily data collected for 30 countries until 14 April, representing over two-thirds of global energy demand, show that demand depression depends on the duration and stringency of lockdowns. Global energy demand declined by 3.8% in the first quarter of 2020, with most of the impact felt in March as confinement measures were enforced in Europe, North America and elsewhere (International Energy Agency, 2020a).

The World Trade Organization points out that digitalization of consumption behaviour has been one of the main outcomes of the pandemic and quarantines put in place. The enforcement of social distancing, lockdowns and other measures in response to the COVID-19 pandemic has led consumers to ramp up online shopping, social media use, internet telephony and teleconferencing, and the streaming of videos and films. This has resulted in spikes in business-to-consumer (B2C) sales and an increase in business-to-business (B2B) e-commerce. The increase in B2C sales is particularly evident in the online sale of medical supplies, household essentials and food products. Demand has also increased for internet and mobile data services. The network capacity and spectrum to accommodate the shift to online activities has had to be urgently adapted by both operators and governments. Demand has fallen, however, for certain services with a large online component, such as tourism services. E-commerce for goods and services has been adversely impacted by the same factors that have caused disruption in supply and demand overall. Such disruptions have resulted in delivery delays or the outright cancellation of orders. Several other e-commerce-related challenges have arisen or been further amplified during this pandemic. These include price gouging (i.e. increasing prices to unreasonably high levels), product safety concerns, deceptive practices, cybersecurity concerns, the need for increased bandwidth, and development-related concerns (World Trade Organization, 2020).

Basic urban services

Cities and their citizens had to absorb the hardest blow from the pandemic with 95% of the COVID-19 patients being city dwellers, while city administrations had to maintain a fragile balance between continuing to guarantee basic services to citizens and keeping the epidemiological situation under control. Many cities choose to reconsider transport systems, giving preference to green options and private transport solutions. Health services focused entirely on facing the pandemic, which in many cases led to the neglect of other medical problems. Existing issues in the housing sector were accentuated, especially in slum areas or for the most vulnerable population categories.

3.1 Transport

The crisis also marked an important shift in perspective for the development of urban transport systems, changing the priorities of both governors and citizens of the cities of the world, and promoting individual green mobility. Across the globe, cities have responded to the need and opportunity to expand cycling and pedestrian infrastructure with astounding speed. Trailblazers include Bogotá and Berlin's temporary bike lanes, Seattle and San Francisco's open streets, and Milan and Barcelona's ambitious plans for road space reallocation. In cities including Lisbon and Mexico City, public and private shared bike schemes are also supporting essential workers to travel safely, with many offering free or subsidised rides. (C40 Cities Climate Leadership Group, 2020a).

The International Energy Agency underlines that the longer-term impact on how people get around in cities will depend on both how successful societies are at managing the spread of the virus and how much cities value the wider social benefits that high-quality public transport (and also micro-mobility and active modes, i.e. walking and cycling) provide (International Energy Agency, 2020b). The IEA insists that support for public transit systems is essential not only to preserve jobs in the sector, but to help avoid service degradation and fare hikes. Poor service could prompt users to shift to private car use, exacerbating local air pollution, GHG emissions, noise, safety and congestion issues (International Energy Agency, 2020b).

Similarly, the C40 Cities Climate Leadership Group pays special attention to public transport which, on the one hand, should be preferred to private cars and, on the other hand, should be more sustainable and safer while guaranteeing on board social distancing. Many cities started to rapidly install temporary transit priority lanes, add additional buses to busy routes, and change traffic signal priorities to favour transit and improve efficiency and overall capacity. Many cities have put temporary transit priority lanes in place by repurposing road space or kerbside parking space, and have altered signalling, to improve service efficiency, frequency and reliability (C40 Cities Climate Leadership Group, 2020b).

Technology will be the key to managing demand and crowding as far as public transport is concerned. Using mobile phone technology, cities and transit providers can collect data about passengers and the demand for services, to help manage this demand and keep passengers safe. In Auckland, the transport operator has released an app which informs passengers whether an approaching bus or train has space for the recommended 2m of physical distancing. Once a bus is at capacity for safe physical distancing, the app will show that the bus is no longer taking passengers, and the driver will only do drop-offs until it is safe to resume pickups (C40 Cities Climate Leadership Group, 2020b).

3.2 Housing and social services

The pandemic has further brought to the fore existing inequalities and made rights violations more visible. The most vulnerable categories before the crisis became even more vulnerable with their housing becoming prisons for some (domestic violence) and with a high risk of being infected due to poor living conditions.

The International Organization for Migration focuses on those categories of the population that found themselves further marginalized by the pandemic. Migrants, including displaced persons, often fall outside of social safety nets, lack access to basic services to ensure their health and well-being, and experience situations of increased vulnerability. Migrants are furthermore likely to be employed in daily-wage, short-term, or precarious work in the informal economy, often with limited provision for, or fear of seeking access to, social protection, adequate food, housing, health and social services. Many face increasing situations of loss of employment and wages, health vulnerability and protection risks, exclusion and discrimination. Risks of tensions and conflict between migrants and the communities in which they reside could be further exacerbated due to the collapse or decline of livelihoods, as well as increased pressure on basic services (International Organization for Migration, 2020).

Mobile and displaced populations are more likely to reside in overcrowded households, informal dwellings, or even camps. Specifically, in humanitarian and crisis-impacted contexts specifically, including groups impacted by the adverse effects of climate change and environmental degradation, people in camps or camp-like settings – where capacity, resources and access to services are limited yet humanitarian needs remain – are highly vulnerable to contracting infectious diseases, and in conditions where viruses can more easily spread. Others may be some of the hardest populations to reach and monitor, yet most ill-equipped to protect themselves against infection (International Organization for Migration, 2020).

Violence against women and girls is increasing globally as the COVID-19 pandemic combines with economic and social stresses and measures to restrict contact and movement. Crowded homes, substance abuse, limited access to services and reduced peer support are exacerbating these conditions (United Nations, 2020c).

3.3 Health services

Inequality in human development affects countries' capacity to respond to COVID-19. Countries with lower human development have a fraction of the resources of developed economies to support their health systems. Their health expenditure is 4.5 percent of GDP, compared with 12.1 percent for very high human development countries (with GDP per capita that is 15 times larger) (United Nations Development Programme, 2020). Inequality of access to healthcare is evident also within developed countries. In order to address this problem, and In line with WHO guidance on the prevention and control of coronavirus for refugees and migrants, most OECD countries offer access to COVID-19 treatment for all categories of migrants. Some countries, like France or Belgium, already offered free universal access to healthcare (OECD, 2020c).

Moreover, specific population groups are showing high levels of COVID-19-related psychological distress. Frontline healthcare workers and first responders have been exposed to numerous stressors and ensuring the mental health of healthcare workers is a critical factor in sustaining COVID-19 preparedness, response and recovery. In every community, there are numerous older adults and people with pre-existing health conditions who are terrified and lonely. Emotional difficulties among children and adolescents are exacerbated by family stress, social isolation, with some facing increased abuse, disrupted education and uncertainty about their futures, occurring at critical points in their emotional development (United Nations, 2020b).

According to the International Long-Term Care Policy Network approximately half of all COVID-19- related deaths in Australia, Belgium, Canada, France, Ireland, Norway and Singapore occur among residents of long-term care facilities, with mortality rates ranging from 14% to 64%. Many of these long-term facilities are homes catering for people with dementia (United Nations, 2020b).

While the effects of the COVID-19 pandemic have yet to be fully understood, it is already clear that, as of mid-May 2020, the number of daily deaths due to COVID-19 is greater than that due to common causes such as malaria, suicide, road traffic accidents and HIV/AIDS. In countries at the peak of the current wave of COVID-19, the virus can become the main cause of death, surpassing cancer and coronary disease. During April 2020 alone, COVID-19 caused almost 200,000 deaths.

In addition, the crisis is also having indirect health impacts. It could potentially lead to an additional 6,000 child deaths per day from preventable causes over the next 6 months across 118 low-income and middle-income countries, with reports of lower child vaccination uptake also in some developed countries. From a human development perspective and the need to expand people's capabilities, protecting public health and sustaining living standards are both absolutely essential (United Nations Development Programme, 2020).

One of the side effects of the pandemic is related to the reallocation of resources in the public health sector. One of the examples given by the UN relates to the provision of sexual and reproductive health services, including maternal health care and gender-based violence related services, which are central to the health, rights and well-being of women and girls. The diversion of attention and critical resources away from such provisions may result in exacerbated maternal mortality and morbidity, increased rates of adolescent pregnancies, as well as HIV and sexually transmitted diseases. In Latin America and the Caribbean it is estimated that an additional 18 million women will lose regular access to modern contraceptives, given the current context of the COVID-19 pandemic (United Nations, 2020c). Women are also the victims of increased cases of domestic violence around the globe. The UN refers to reports of increased violence against women, with surges being reported in many cases of upwards of 25% in countries with reporting systems in place. In some countries reported cases have doubled (United Nations, 2020c).

Patterns of urbanisation

Cities are facing major structural challenges as many are wondering if they will still be as attractive as before with telework being more widely used and rural areas proving more resilient in case of similar crises. The redesigning of public spaces, the "15-minutes city" concept and better coordinated governance seem to be necessary responses in order to maintain cities' competitiveness and attractiveness.

4.1 Public spaces

Public spaces are destined to play a crucial role in cultural, social and sport activities and initiatives, both at individual and collective levels. A creative approach to the use of public spaces has been already been applied during the lockdown. According to the UNESCO report public space is vital for a vibrant cultural life and several cities have modified the use of such space, sometimes in reaction to the initial confinement period but also as a way of reinvigorating cultural life post-confinement. In Rome (Italy), the #Cinemadacasa initiative has projected films on the facades of buildings throughout the city after nightfall (UNESCO, 2020d).

Public space gained a central role during the pandemic and accessibility became an issue of major importance and the way in which spaces were used acquired some new characteristics. A study conducted by Gehl on the use of public spaces in 4 Danish cities before and during lockdown showed 10 major trends:

- **(i)** A significant drop in city centre activities;
- **(ii)** The city is being used more for recreation, play and exercise;
- **(iii)** Use of public spaces has remained constant while movements from A to B decreased significantly;
- **(iv)** Local places that already offer a public activity are even more popular than before;
- **(v)** Popular places make physical distancing rules hard to follow;
- **(vi)** The search for essential outdoor and climatic human needs has become more valuable;
- **(vii)** New activities and forms of urban life are emerging in the cities;
- **(viii)** More children and older people are using the city's space than before;
- **(ix)** Different user groups have different experiences (women are usually seen in pairs, while men are alone or in groups of four);
- **(x)** Overall mobility has decreased but pedestrian movement is increasing outside of the city centre. (Gehl, 2020)

In its report, UN Habitat introduces the concept of a "walkable radius" describing accessibility of public spaces within cities. The walkable radius is defined as a circle centred around a selected public space. Ideally, pedestrians should be able to reach every public space or facility from their homes within five minutes (equivalent of around 400 metres), as this is considered the most practical and realistic threshold. The GPSP recommends evaluating the quality not only of a selected public space but also on its walkable radius as the catchment area identifies its daily users and their movement flow (United Nations Human Settlements Programme, 2020).

At the same time public spaces used for recreation and creativity may become places of criminal activity and danger. Fear and the experience of sexual violence impacts women's right to the city, in particular freedom of movement, freedom from violence, in terms of livelihood and access to services. During the COVID-19 crisis, sexual harassment and other forms of social violence against women continue to occur in public spaces: on streets, in parks, on transport and online. Current measures to respond to COVID-19, such as social distancing and curfews, have decreased the number of people on the street, resulting in a heightened risk of sexual violence and other forms of violence that women regularly experience when exercising outdoors, working in public work settings, living on the street, travelling to and from home and work (for example those performing essential services, or those working in the informal sector), (United Nations, 2020a).

4.2 Urbanisation

The COVID-19 crisis may provide opportunities for city dwellers and planners to rethink drastically, from the ground up, their consumption, production and travel paradigms. To a certain extent "life after COVID-19" will be "life with COVID-19", hence the need to rebuild cities long-term, based on a new approach to urban spaces that takes better account of different needs, and shifts from a logic of *mobility* to one of *accessibility* to basic amenities and services. Key concepts such as the "circular economy", the "localisation of the Sustainable Development Goals", "tactical urbanism" and "the 15-min city" can all help achieve better quality of life while preserving productivity, social inclusion and the environment (OECD, 2020a).

According to the United Nations Human Settlements Programme (UN Habitat), around 95 percent of people with COVID-19 live in urban areas. The pandemic has brought into sharp relief some of the fundamental inequalities in the heart of our towns and cities, and affecting the most vulnerable the hardest. Cultural life also ground to a halt as countries closed cultural institutions having a particular impact on cities, which are major hubs for creativity, as well as heritage (UNESCO, 2020d).

The Centre For Evidence-Based Medicine (CEBM) & the University of Oxford also underline problems related to the intrinsic inequalities of metropolitan areas and big cities. Around the world, disadvantaged urban dwellers, many of whom are citizens of colour and/or migrants, have been disproportionately affected by the impacts of COVID-19. The pandemic creates an opportunity to refocus attention on quality of life at the neighbourhood level. They suggest revisiting the idea of neighbourhoods as mixed-use, mixed-income and intergenerational spaces promoted in the 1960s by Jane Jacobs, updating it to reflect contemporary sustainability concerns (The Centre For Evidence-Based Medicine & the University of Oxford, 2020).

The discussion on the connection between air pollution, urbanisation and major risks of dying from certain viruses, including COVID-19, pushed many governments and governmental institutions to concentrate their efforts on more sustainable renewable sources of energy. The European Commission is releasing €750 million of funding for key European energy infrastructure projects, with major cross-border benefits. Supporting the construction of necessary infrastructure, contributes to the Commission's energy policy priorities of improving energy security, whilst giving consumers more choice, and spurring economic growth and jobs. These interconnections are also essential for renewable energy sources to thrive and making Europe the world leaders in renewable energy (European Commission, 2020).

4.3 Governance

Effective city governance became a key issue during the pandemic as many decisions are to be taken at local level. Cities' preparedness, response and recovery from future pandemics and crises will rest on robust governance systems. Conventional approaches to social and physical infrastructure development, basic service delivery and housing have to be re-configured to achieving a paradigm shift. A fundamental change and redefinition of city mandates, the roles and responsibilities of actors at central, state and local levels is mandatory for the required transformations. Furthermore, existing bottlenecks and barriers that have withheld the implementation of critical reforms must be removed. To this end, decentralisation and fiscal federalism that brings local governments and users closer to urban services and development must be enabled. Trust between communities and local leadership must be strengthened through transparency and accountability based on advocacy, data and evidence to monitor the progress towards the vision for the city. Local leadership must be encouraged to innovate and make the leap from business-as-usual tools and technologies. This really means that the role of central and state governments should be to support by creating conditions, enabling environment and necessary tools to encourage and incentivize cities to make local governments directly accountable to citizens, whereas, the role of cities should be focused on providing better services, while balancing fiscal and functional imperatives (United Nations Human Settlements Programme & National Institute of Urban Affairs, 2020).

The FAO recognises the leading role of local governments in facing the crisis and avoiding food supply shortages and identifies five key actions that can help local governments address food system issues in the COVID-19 era. Obviously, the context will differ between countries and localities; government actions in a rural area or low-income suburban community will differ from those in a capital city or a fast-growing secondary city in Asia and sub-Saharan Africa. Leadership is the common thread that links local government action – from prioritizing, planning and overseeing actions, to liaising with the private sector and civil society networks, to communicating clearly and regularly with the public.

One, prioritise food systems as an essential service that will continue to operate during periods of lockdown, emergency or other health containment measures.

Two, establish a local government food system coordination committee and functional governance mechanism to prioritise, plan and oversee operations.

Three, provide leadership to rapidly activate or develop a COVID-19 food system response plan.

Four, generate rapid diagnostic data and information to inform decision-making.

Five, find innovative ways for all essential food system channels to comply with virus containment measures and continue to serve their diverse clients (FAO, 2020).

As COVID-19 spread through cities around the world, with a devastating impact on local communities and the wellbeing of residents, many local governments were on the frontline of combating the outbreak. On the one hand, cities have acted as implementation vehicles of nation-wide measures, while on the other, cities have spearheaded more bottom-up, innovative responses.

Regardless of the levels of decentralisation, there is always a need for cities to work with national governments to ensure the effective implementation of nationwide measures or develop place-based responses in line with national frameworks and initiatives. City-to-city cooperation during the pandemic within countries and beyond national borders has been a key to success for cities in dealing with the pandemic. Peer-to-peer exchanges between cities create unity, solidarity and promote openness and transparency, while city networks are providing useful information on best practices to tackle the crisis and recover effectively, taking into account economic, social and environmental objectives (OECD, 2020a).

The International Monetary Fund raises the issue of corruption, an issue that became even more relevant with the pandemic. Corruption was a problem before the crisis, but the COVID-19 pandemic has heightened the importance of stronger governance for three reasons:

First, governments around the world are playing a bigger role in the economy in an effort to combat the pandemic and provide economic lifelines to people and companies. This expanded role is crucial, but it also increases opportunities for corruption.

Second, as public finances worsen, countries need to prevent tax evasion and the waste and loss of funds caused by corruption in public spending.

Third, crises test people's trust in government and institutions, and ethical behaviour becomes more salient when medical services are in such high demand. Evidence of corruption could undermine a country's ability to respond effectively to the crisis, deepening the economic impact, and threatening a loss of political and social cohesion (International Monetary Fund, 2020b).

04 Annex 1

Questionnaire 1 phase of the Survey (open questions)

1. ***ACCESS TO SERVICES AND GOODS.*** Which impact on the delivery of urban services and goods (garbage collection, security, education, food, power, internet etc.)? How public and private providers will adapt to the new patterns of demand? Is there a risk of disruption of the supply and distribution chains? Which policies and measures can support the transition?
2. ***TRANSPORTATION.*** Which impact on mobility can be foreseen: public transit vs private transport, safety, costs, work organisation? Which policies in support of the new patterns of demand in the medium-term can be envisaged?
3. ***PUBLIC SPACES.*** Which impact on social interaction, participation to events, interpersonal relationships (meetings, assemblies, social support groups, volunteering) is to be expected? Will the use of green areas (vs closed spaces) change? Which adaptation measures to new safety standards can be adopted?
4. ***TOURISM.*** Which impact on the tourist economy of the central/historic city is foreseeable (tourist flows, tourist service, accommodation? will new models emerge? Which new policies in support of tourism can be envisaged?
5. ***CULTURE.*** Which impact on culture (theatres, events, museums, heritage sites, etc.) is foreseeable? Are compensation measures and medium-term support policies necessary and possible? Which new forms of cultural consumption can be expected?
6. ***HOUSING AND SOCIAL SERVICES.*** Which impact on the delivery of social services concerning housing, social assistance and support to the weaker social groups? How will be the informal sector be affected? Which policies can be implemented to mitigate the crisis?
7. ***HEALTH SERVICES.*** Which impact on health services: hospitals, local health services, doctors and medical staff? Which health policies are envisaged for the transition? Will cities increase their engagement in health services provision?
8. ***WORK ORGANISATION.*** Which impact on the organisation of manual vs non-manual work is foreseeable?. Which spatial work models will prevail? Which new forms of organisation of manual work can be envisaged?
9. ***PRODUCTION SYSTEMS.*** Which impact on the organisation of manufacturing, logistical chains and delivery processes are foreseeable. Which changes in the logistic supply chains are envisaged and which processes of internalization can occur?
10. ***CONSUMPTION.*** Which impact on consumption, online shopping, large retail, producer markets etc? Which new distribution models could emerge?

11. ***URBANIZATION.*** Which trends are appearing in types of density? Will trends towards decentralization in housing and services emerge in the medium-term? Will this lead to the revitalization of suburbs and small towns?
12. ***GOVERNANCE.*** Which level and forms of governance could be more effective in managing the transition? Which combination of National , Local Governments and mixed forms of public/private actions? Which new tools will better sustain an effective recovery, concerning the impacts foreseen on the population, businesses, city infrastructure and services? Will the trend towards the privatisation of services continue?

05

Annex 12

Questionnaire 2 phase of the Survey

** The "Mark" section refers to the number of the first-phase survey respondents who agreed with each statement.*

1. ACCESS TO SERVICES AND GOODS			
MAIN ISSUE	**TOPIC**	**MARKS**	**INSERT YOUR AGREEMENT FROM 1 TO 10**
Emerging trends	General economic crisis	2	
	Increase of use of digital technology	6	
Delivery of public urban services in general	General minimal effects, back to routine	9	
	General large negative effects on service delivery	2	
	Size reduction of public sector	1	
Delivery of private service and goods	General minimal effects, back to routine	6	
	General large negative effects on service delivery	3	
	Increase of online shopping	3	
	Crisis of small business	2	
	Development of small-scale traders, small shopping logistics	2	
	Increase of social and geographical access inequalities	4	
	New types of packaging will be introduced	1	
	Increase of average consumer prices	1	
Education	Development of online teaching	12	
Internet provision problems	Digital divide and lack of multiple platforms	5	
Policy -regulation	Tax reduction, support of household income	2	
	Increase of public interventions in the economy	2	
	New investments in logistics and internet infrastructure	3	
	Increase of regularisation of illegal immigrants	1	
	No new intervention	1	
	New regulations for online shopping	2	
	Growth of food self-production	1	
	Increase of provision of commercial and public services at local level (neighbourhood)	1	

2. TRANSPORTATION			
MAIN ISSUE	**TOPIC**	**MARKS**	**INSERT YOUR AGREEMENT FROM 1 TO 10**
Emerging trends	Increase of telework, homework, Artificial Intelligence, need for new scheduling working/ learning time	14	
Public vs. Private transport	Increase of private transport	9	
	Decrease of public transport	8	
	Reorganization of Public transport	8	
	No medium-long term change	5	
Alternative Modes	Increase of individual mobility (Pedestrian/Cycles/ Scooters and others) with dedicated lanes	11	
	Increase of Rickshaws, tuk-tuks	2	
	Increase of Uber-like, car sharing	3	
	Increase of Self-Driving vehicles	1	
Commuting	Reduction of commuting	4	
	Increase of commuting from suburban areas	1	
Regulation	Accelerated transition to renewable energy	1	
	Increase of taxes/fees on private cars	1	
	New traffic regulation	1	

3. PUBLIC SPACES			
MAIN ISSUE	**TOPIC**	**MARKS**	**INSERT YOUR AGREEMENT FROM 1 TO 10**
Emerging trends	Decrease of public events, and increase of social interaction on the internet	14	
	Impacts will vary in each city	5	
	The decrease of public events is temporary, activities will soon resume	6	
Collateral effects	Increase of police control and authoritarian drift	1	
	New uses of open space	6	
Adaptation	Jobs will be permanently affected by the increased use of internet and decentralisation	2	
	Concern for economic activities in the public space	1	
	Preventing infections through movement restrictions of people	1	
Regulation and New Policies	Increase of Wi-Fi and bandwidth	2	
	New design regulation for open space and buildings	3	
	New patterns of activities in open space	1	

4. TOURISM			
MAIN ISSUE	**TOPIC**	**MARKS**	**INSERT YOUR AGREEMENT FROM 1 TO 10**
Impacts on tourism	International tourism will be in a complete crisis. Normalcy will gradually come back in 2-3 years-time.	15	
	In the long-term tourism will recover to previous levels	6	
	Tourism travel will become more expensive due to health concerns and measures	3	
	Health 'passports' could be introduced as a measure to prevent diseases	2	
	Cruise tourism will have a durable crisis and so the cruise harbour cities	1	
	Pilgrimage numbers will go down and there will be more interest for local community work	1	
	Small good hotels will better survive the crisis	2	
	AirBnB will lose attractivity as compared to small hotels. Longer stays will be privileged	3	
	Airline industry will undergo major bankruptcy and restructuring	2	
	Some groups seen as 'virus carriers will limit traveling in the short/medium term for fear of xenophobia	1	
	Congress tourism and Fairs will be hardly hit in the medium term and will not recover to previous levels in the long term. Format of events will substantially change	2	
	Cancellation of many tourism infrastructure projects	1	
New forms of tourism	Short distance/ domestic tourism will replace international tourism in the medium/long term	8	
	Individual/small groups customised travel forms will greatly expand	3	
	New health regulations will be established and become permanent for hotels, restaurants, museums, and attractions.	1	
	Urban tourism will be in crisis in the coming years while beach and natural areas tourism will do better	5	
	Camper industry will get a boost	1	
	Reconfiguration of cultural events, sport events, street life, shopping will be done in the short term and will become permanent feature	1	
	Part of the hotel capacity will be recycled for other purposes (students, senior citizens, offices etc)	1	
	Reconfiguration of the tourism sector toward 'quality visitors'	1	
Public Policies	Medium- and long-term Government support will be fundamental to support the entire chain: restaurants, hotels, travel agencies, artisans	1	
	Stimulus packages and bonuses will be needed to support holidays and the tourism sector in the medium term	3	
	Government should develop policies to better balance tourism and local economy and avoid excessive reliance on tourism	2	
	Pressures will develop to cancel debt of tourism sector	1	
	Governments will develop policies to innovate the tourism sector: greener and less carbon footprint	1	
	New health regulations standards and ratings will be introduced for tourist accommodation	4	

5. CULTURE			
MAIN ISSUE	**TOPIC**	**MARKS**	**INSERT YOUR AGREEMENT FROM 1 TO 10**
Impacts on culture	Cultural events, Museums and the heritage sector will have major problems in recovering in the medium and long term	12	
	Theatres and concerts will suffer more, Museums and art galleries and heritage sites will rebound earlier	2	
	Artists will be very badly hit. Many will not continue their carriers	4	
	Larger Institutions will become leaner but will survive	1	
	Cultural production in smaller tourism cities will suffer more	1	
	People will reduce participation to mass events	3	
	There will be a significant reduction in the offer of cultural events	1	
New forms of cultural consumption	Virtual visits and performances have been boosted by the crisis	9	
	Cultural events will use more open spaces and piazzas	5	
	New form of online art performances can develop	7	
	Cultural gatherings will be of smaller size	3	
	Social media will expand their role in cultural consumption	3	
	Large cultural buildings will be repurposed	1	
	Rebirth of neighbourhood galleries and art spaces, local performances	1	
Public Policies	Controls of visitors' density will become routine	1	
	Policies to diversify local economies will be promoted	1	
	Promotion of online cultural consumption as a way to support the sector	1	
	Subsidies will be maintained throughout the crisis to maintain the sector alive	7	
	Risk of more censorship on culture in authoritarian regimes	1	
	Need to increase private contributions to culture to compensate for the limits of the public sector	2	
	New Hygiene standards for mass cultural events will be established	2	
	Support to investments on digitalisations of collections to increase availability of content	1	

6. HOUSING AND SOCIAL SERVICES			
MAIN ISSUE	**TOPIC**	**MARKS**	**INSERT YOUR AGREEMENT FROM 1 TO 10**
Emerging trends	Housing was already a major issue before the crisis	5	
	Increasing inequalities and acute problem for informal workers	3	
	The housing sector will slow down	2	
	The housing sector will continue to grow, though with new problems	4	
	No impacts	1	
Collateral effects	Less work opportunities for people with disabilities and students	1	
	In informal areas, it is nearly impossible to observe social distancing	1	
	More attention to inequalities and public services	2	
	More homeless people	2	
	The collapse of Airbnb may have a positive impact and release a great number of apartments	1	
	New solution for the care of elderly people	1	
	Less business in the city centre due to unaffordable rent	1	
Adaptation	Informal city production will be reconsidered as a tool for developing cities	1	
	New ways of sharing housing, common spaces, services, internet, etc. will appear	1	
Regulation and New Policies	A need for deregulation and detaxation of land and properties	2	
	More social protection and unemployment benefits will be granted	1	
	Construction programs will be delayed or postponed	1	
	Increase of slum upgrading program as a public sector priority	4	
	New regulations and housing standards to include balconies or terraces and larger backyards	1	

7. HEALTH SERVICES			
MAIN ISSUE	TOPIC	MARKS	INSERT YOUR AGREEMENT FROM 1 TO 10
Impact on Health services	The crisis shows the limits of the system, not equipped for prevention and epidemiological control	9	
	It is becoming impossible to obtain normal medical appointments	1	
	Response of governments to the crisis has been too slow	3	
	Hospital bankruptcy is on the rise, especially in rural areas	1	
	City budgets are under great stress for social assistance	4	
	Vulnerable population has been badly hit by the crisis	3	
	Import of equipment has been delayed by competition with richer countries	1	
	There has been a lower capacity to address chronic diseases and maternal health	3	
New Health practices	Increased online consultation for CV patients and for other diseases	5	
	Increased demand for predictions: computer modelling	1	
	Massive increase of teleworking	1	
Public Policies	Need to promote medical education and to speed-up access to the profession	2	
	Increase the number of testing facilities by deregulating the system	3	
	Introduce new system of regulations for public health security at national level	4	
	Pandemics will return: need to invest in robustness and redundancy in the system	8	
	Reform completely the health system (US and Europe) to extend protection to the weaker population groups	3	
	Relocation/repatriation of essential equipment and medicines production	3	
	Increase Investment in epidemiological surveillance at international a national and local level	4	
	Decentralise health care system and give greater role to cities for prevention	3	
	Permanently increase compensation and bonuses for risk-exposed medical staff	1	
	Improve sanitation in informal settlements	2	
	Create national databanks on population health	3	

8. WORK ORGANIZATION			
MAIN ISSUE	TOPIC	MARKS	INSERT YOUR AGREEMENT FROM 1 TO 10
Emerging trends	Manual work will be deeply affected	12	
	Social distancing possible as in construction, delivery, agriculture, individual work, etc,	3	
	Social distancing impossible and pandemic risks for janitors, waiters, care, essential services, etc,	5	
	Increase of automation labour saving, AI, scaling up machines, robots, drones, Uber-like jobs, digitalization, local manufacturing, small scale capacity	5	
	Moving away from developing city will increase	2	
	Labour cost will increase	1	
Regulation and New Policies	New job creation policies will be required	2	
	Protocols, standards, hygienic rules will be needed	2	
	Subsidies, retraining, basic income will be needed	2	
	Next political crisis will emerge	2	
Emerging trends			
	Unemployment, fear of losing job Will grow	2	
	Anti-minorities politics will be used	1	
	Internalizing workers 'transport, slum upgrading will be needed	1	
	Non-manual online work will expand	16	
	Cyber security, control of work process and working time at home will be needed	4	
	Less physical space needs, less transport, more costs onto workers will emerge	2	
	More broadband infrastructures will be needed in developing countries and city peripheries	2	
	Retraining policies will be needed	1	
	Relocating outside cities will be possible	1	
	Attraction in core cities of agile start-ups will be possible	1	

9. PRODUCTION SYSTEMS			
MAIN ISSUE	TOPIC	MARKS	INSERT YOUR AGREEMENT FROM 1 TO 10
Emerging trends	No one	1	
	Crisis of globalization, self-reliance on local production, reinforcing national strategic production	6	
Supply chain	Internalisation of production	1	
	Logistic and delivery services are the new strategic asset	3	
	There will be a process of reshoring/relocation from abroad	4	
	Increase in short networking	4	
	Emerging of new international supply chain, new alliances	2	
Production	More orientation to internal market	1	
	Teleworking	1	
	Food safety	1	

10. CONSUMPTION			
MAIN ISSUE	TOPIC	MARKS	INSERT YOUR AGREEMENT FROM 1 TO 10
Emerging trends	Increase of online shopping	13	
	Reduction in consumption in the short period	3	
	Coexistence of new and old models	4	
	Increased attention to the origin of products	1	
	Transition from an economy of consumption to an economy of the necessary	1	
Small business	Positive effects possible for local market- store/ shops in the long run	4	
Shopping malls	Shut down and crisis	6	
	Transformation into collecting items from on-line shopping	1	
	Crisis of traditional markets (souks)	1	
Policy-regulation	New regulations for distribution modes	1	
	New regulations for safe payments and refunds	1	
	Support small-medium size supermarket in suburbs and strengthen neighbourhood retail	2	

11. URBANIZATION			
MAIN ISSUE	TOPIC	MARKS	INSERT YOUR AGREEMENT FROM 1 TO 10
Emerging trends	Increase of urbanisation processes in the South (after a while):	1	
	Urban decentralisation processes in the north (with some limits)	8	
	Continuous sprawl in Latin America	2	
	A rise of 'hipsturbia': quality urban suburbs	1	
	Business as usual, even an increase in land consumption	3	
	Inequalities, war, disease, extreme climate events will continue	1	
	Patterns of urbanisation are unlikely to be affected	2	
	The location of jobs becomes the critical issue	1	
	Urbanization trends depend on war, extreme climate events	1	
Collateral effects	Development of International retirement destinations	1	
	New opportunities for the revitalisation of small cities, with a risk for growing inequalities	4	
	The city is becoming unattractive	1	
	Lack of social distancing due to dense settlements	1	
Regulation and New Policies	Density should be better managed	2	
	Need of enhancing metropolitan sub centres	3	
	Need of introducing the "15 minute" neighbourhood	1	

12. GOVERNANCE			
MAIN ISSUE	TOPIC	MARKS	INSERT YOUR AGREEMENT FROM 1 TO 10
More Decentralized Governance	Local governments, mayors, communities, neighborhoods will take the lead in managing the crisis	11	
	More financial autonomy is needed	2	
	Decentralization has not been efficient	1	
	Coordination among different scales	3	
Public/Private	Enhance cooperation between governments and private sector	2	
	Increased digitalization of public data to map and predict	2	
	Increased Privatization of services	5	
	Promote deregulation of central government	1	
	Increased role of the private enterprise	1	
	Multiplicity of governance models	2	
	Privacy concerns will be relevant	2	
Central Government	Crisis of central government & bureaucracy	4	
	Stronger central government due to the pandemic	5	
	trends to centralization in totalitarian regimes	2	
	trends towards bigness, in the public and private sectors	1	
	Governance tension between blocs (US-CHINA)	2	
New forms	Increased role of social capital and civil society	3	
	Redesign of emergency response infrastructures	3	

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