

Urban Planning and Pandemia

Bianca Petrella

(Engineering Department, Università della Campania Luigi Vanvitelli, Italy)

Abstract: The paper addresses the effects of the COVID-SARS19 pandemic on the near future of urban places, also in the light of the forecasts of experts, who expect new viruses and increasingly frequent pandemics (IPBES 2020). The recent pandemic, unlike the past ones, has spread to a world where almost eight billion people live, of which more than half in urban areas, ranging from small villages to megalopolises of over ten million inhabitants.

Poëte (1929) stated that the essence of the city must be sought in the roads structure, in the communication routes, and on the fact that (in the twenties of the last century) people "live more united to enjoy the advantages of progress, and waiting for the progress itself will allow them to live further away without losing the benefits". Beguinot (1989) theorizing the cabled city, stated that technological innovation should not be the driving force of further useless consumption but should contribute to raising the quality of life and urban life.

What will happen after the current global pandemic that has forced us to change lifestyles, ways of working and social relations? Both democratic governments and those of authoritarian regimes have, with few differences, established the same rules: distancing, isolation, tele or smart working and closure of activities deemed non-essential. Essential for what, for what purpose?

The effects of the imposed limitation to the welfare state are evident and the urban organizations will different, depending on whether society is based on welfare systems or it is left to the so-called self-regulation of the market.

Cities, after the pandemic, risk continuing the crisis they have been in for decades. Responsibility is also to be found in territorial government regulations, marked by the utmost liberalism; they allow for generic and smoky objectives while, on the contrary, they should clearly represent the interests at stake and the social advantages and disadvantages that each of the possible choices produces.

The current pandemic also brings back the traditional city-countryside relationship, with dynamics quite similar to those that had characterized it at the advent of the city produced by the industrial revolution; the need for sustainable development also requires an innovative conception of urban spaces, both public and private.

Key words: pandemic, urban planning, development, challenges

JEL codes: I0, I3

1. Introduction

The relationship between urban planning and pandemic needs to clarify what is meant by urban planning,

Bianca Petrella, Full Professor, Engineering Department, Università della Campania Luigi Vanvitelli; research areas: urban and regional planning. E-mail: bianca.petrella@unicampania.it, bianca1petrella@gmail.com.

what is meant by pandemic and what relations exist between the two entities. Although there is no scientific definition of a pandemic (Morens et al., 2020), it assumes the same meaning in every place of the planet and can be defined as the rapid spread of a pathogen over vast territories, which can also involve the entire globe.

Conversely, urban and/or territorial planning is combined in different ways in different countries. Although having the same theoretical purpose (organizing the transformations of the territorial structure to make it suitable for human activities) the ways in which it operates in urban planning are quite varied. Essentially, urban planning depends on the different regulatory systems that regulate matter, the historical stratifications that have led to the various territorial configurations, the relationship (greater or lesser trust) between citizens and public institutions, the role of administrators and that of private actors who intervene in decision-making and operational processes and, finally, the political system on which the whole is based.

Obviously, the urban discipline has evolved with the evolution of society and technical and technological availability, in the effort to give effective answers to an increasing complexity. Instead, the pandemic keeps its definition intact even if scientific progress has developed different techniques and ways to limit its spread and, above all, to mitigate the consequences on the health of people and the economy.

2. Pandemics in Social and Urban History

2.1 Characters of Pandemics

Even in the distant past there have been pandemic phenomena. With few exceptions, the great epidemics occurred in civilizations in which people moved to large territories and the populations most affected were those of the cities with higher density of population. Today, the question arises as to whether and how cities should change, given that scientific research warns us that, in the near future, we must expect the arrival of new, unknown viruses.

But in the past, what measures were used to curb the contagion? Were the cities reorganized as a result of what had happened?

Before looking for possible answers to these questions, it is necessary to take into account how the different types of virus are transmitted from man to man, that is if the propagation takes place through respiratory, intestinal, sexual, blood or parenteral because, in some of these cases, the urban organization can make a minimum contribution in other cases even that.

The greatest contagion is that which happens by air through the droplets, of which we are all now aware; In addition to Sars19, the contagion of influenza and pulmonary plague also occur in this way, but, in Europe, the plague can be considered eradicated while the viruses of influenza must be reckoned with today. Cholera, typhoid, hepatitis A, and other diseases, on the other hand, are transmitted through fecal-gold pathways and, in this case, the urban attention should be directed mainly to the sewage system and the water distribution network that can be contaminated by the presence of vibrions, bacteria or viruses. For the HIV virus, which is transmitted through blood, through sexual intercourse or from mother to newborn, the city cannot make any contribution; for the pathogens of malaria, tetanus, various hepatitis and other diseases whose contagion occurs by blood or parenteral the contribution of the city is that of its hygiene and maintenance of common areas and peri-urban areas (Kucharski, Peri, 2020)

2.2 Epidemics and Cities in the Classical World

The first epidemic of which we have news is the one that killed Athens between 430 and 427 B.C. during the

Peloponnesian War; it probably originated in Ethiopia, spread throughout the eastern Mediterranean and arrived in the Polis through ships carrying supplies and by moving troops. Although known as the Great Plague, historians still have no certainty about the type of disease that may have been bubonic plague, typhoid fever, salmonellosis or other. The news comes to us from Thucydides (The Peloponnesian War, II Book) and later from Lucretius (De rerum natura, VI Book) who in their writings describe the situation in the polis and in the campaigns together with the overcrowding that was determined in the city-was due to the Spartan siege. A third of the population died (Kagan, 2003) and the disease also killed Pericles and most of the doctors who, not knowing how to deal with the disease, were the most exposed to the infection. Thucydides, also affected by the disease, describes the symptoms of the disease and explains how many infected people bathed in water tanks to relieve pain, ignoring that this helped to further spread the disease. The dead bodies were buried, and they renounced the funeral rites, and many were left exposed and forsaken, even in the sacred precincts; those who isolated themselves did so spontaneously and the text does not contain any provisions given to the population to contain the epidemic spread. In addition to Athens, other cities were also affected, especially the most populous along the coast, but there is no news about urban transformation measures, we only know that the proposal to raze the city to the ground was not accepted, the inhabitants continued to gather in the agora and to go to the temples of the acropolis. Certainly Athens lost the role of cultural and political hegemony that had had in the Aegean, but the main cause was not the plague but the defeat in the war against Sparta.

More documented is the so-called plague of Galen (or plague Antonina or Aureliana) that involved much of the empire in the second century. and that, from some sources (Marcone, 2002; Alfani G., Melegaro A. 2010), lasted from 165 to 190 AD, with periods in which the epidemic seemed to be extinguished, but then resume with the same virulence. In any case, the deaths were estimated at about 7-10% of the population, a percentage that increased to 13-15% in cities and among soldiers (Littman, 1973), in Rome there were even 2000 deaths in a single day (Bergdolt, 2020). Given the spread of contagion between Asia Minor, Egypt, Greece, Italy, Gaul and Germanic regions, this tragic event can be called a real pandemic. As is well known, Imperial health care was basically aimed at armies for which field hospitals were set up to treat wounded in battle. In Rome there were no real hospitals, but only the temple dedicated to Aesculapius, built on the Tiber island at the end of the third century BC. and where there is still the same health function, provided by the Fatebenefratelli. Even with accurate descriptions of the symptoms and deaths caused by the disease, historians do not provide information on any provisions aimed at regulating social behavior nor for the purpose of containment of contagion, let alone for preventive purposes, but the chronicle tells of religious ceremonies to demand the favor of the gods.

A further epidemic occurred during the Eastern Roman Empire of Justinian between 542 and 546 AD; it claimed millions of lives in the territories surrounding the Mediterranean and the Black Sea. The pandemic appeared again in 558 A.D. (Lester, 2006) and remained endemic, though less violent, until the mid-7th century; This time, probably, it was bubonic plague and the hypotheses indicate the development of the first outbreak in Arabia, in central Africa or in lower Egypt and, through the trade routes, over decades, it reached China (Bishop, 2003).

Historians tell us that in Constantinople alone, the capital of the Byzantine Empire, there were 5 to 10 thousand deaths a day (Marcone, 2002; Alfani, Melegaro, 2010). As always, the greatest incidence occurred in the most densely populated cities and especially in the port cities, where trade in goods and mainly wheat were concentrated, but, to a lesser extent, The countryside was also affected where some of the crops were abandoned, aggravating the urban situation and in many monasteries the religious were decimated (Stathakopoulos, 2004).

The provisions given by Justinian, concerned (without success) mainly the collection and burial of corpses, the calming of prices, the reduction of public wages and taxes on agricultural land that could not produce income (Rich, 1992). The reduced tax revenue led to a sharp slowdown in public housing, while in some areas of the empire flourished religious housing, which relied on the legacies of private individuals who viewed the plague as a divine punishment. The decimated population, the shortage of soldiers (Russell, 1968) and the flight from the cities favored the Longobard invasion and the consequent decline of the urban civilization, beginning the medieval age during which the Longobards also cancel the legal concept of city (Phythian-Adams, 1979). It should be noted that some scholars do not agree on the central role that the pandemic would play in the collapse of the Roman Empire; Although they have no definite demographic sources, but based on similarities with later pandemics, they conclude that the loss of population was not such as to explain the success of the invasions of the northern peoples (Whittow, 1996). Although the demographic sources are few and labile, the population of Constantinople in 542 A. D. is estimated by 250 thousand to 570 thousand inhabitants.

2.3 Epidemics and Cities in the Middle Ages

Whether or not linked to the effects of the plague, the territory and the cities change significantly, the stone city changes, the city of relationships changes, the city of lived (Beguinot, 1989). After the collapse of the central power that guaranteed exchanges and security, the people abandon the cities and seek refuge in safer places; the monasteries become the citadels in which one is protected and in which all the urban activities are carried out; are the places where culture, art, science and technology are produced: time is marked by bells, movements are limited unless long pilgrimages are undertaken to aspire to eternal life.

The model of monastic life will also influence the following centuries. The passage from the city of the church to that of the merchant (Le Goff, 1982) marks the new urban conformation for the following centuries; the introspective conventual model has moved into the village, the walls circumscribe a unitary environment that conforms to the morphology of the places, and what was the common denominator of the polis and civitas is replaced by the verticality of castles and cathedrals with towers and bell towers. When in 1348 the "Black Death" broke out, the cities are still self-sufficient communities with little exchange with the outside world. The epicenter manifested itself in north-eastern Asia and, through maritime and land routes, spread throughout Europe, reaching even the Scandinavian countries and Russia and hitting the most populous inhabited centers. In the five years in which the pandemic was intense, about 20 million people were killed, between 25% and 50% of the population that in the three centuries after the year 1000 had steadily increased and in more than one city had exceeded 100 thousand inhabitants. If deaths are counted for the 50 years in which the disease has occurred in successive waves, the number of deaths in Europe is estimated at 40 million. The cities were in precarious hygienic conditions, the sewers were almost non-existent and the waste accumulated along the roads. Some cities, where the rulers managed to control the entry of goods and people, to impose the isolation of families with patients and to issue rules for the delivery of waste, they managed to limit the number of victims while in other cities they reached even 70% of deaths (Ujvari, 2002). In Bologna, already at the end of 1200, rules were in force to guarantee a minimum of urban hygiene, for example, it was forbidden to raise pigs in the city, to throw water and garbage from the windows, to leave mud and pomace along the roads (Fasoli, Sella, 1939). Although we had no knowledge of microbes and viruses, in almost all urban places there were hygiene rules such as street cleaning and market squares, the purging of black wells, the elimination of stray animals, etc. which, however, were not effectively applied.

In contrast to previous pandemics, although there was still no knowledge of the origins of the disease and the mode of infection, this time the cities began to be organized to respond adequately and the hygienic conditions of urban life began to be improved, even if the population sensed that getting away from the cities and avoiding social contacts was the best condition to escape the disease. This is also demonstrated by Boccaccio's Decameron, whose stories are narrated by the seven women and three men who had taken refuge in an extra-urban villa in the Florentine countryside.

In the following decades (Corradi, 1865), as already mentioned, the preventive intervention on social life was very similar to what was used during the current pandemic: quarantine, restriction and control of movements, even within the city walls, ban on funerals, suspension of certain activities considered dangerous for the spread of the disease, health certificates and, in addition, they began to build lazzaretti (Venice in 1403, Genoa in 1467) and to appoint the public health authorities (Naphy, Spicer, 2006; Cosmacini, 2005). In the territories where permanent health authorities were established (with extensive powers) the consequences of epidemics were significantly lower than those where only the onset of infections occurred.

Historians do not always agree that the demographic decline was caused exclusively by the plague, as in the same period there was climate change, to famines and earthquakes, but it is agreed that the drastic decline of the population has also produced positive effects, including: new energies in productive activities, due to the transfer of ownership; the renewal of the population in the villages that had been depopulated; income increase for certain social groups; mixing of power groups, etc.

2.4 Epidemics and Cities in the Modern Age

The forces that drive urban change are varied and the pandemic is certainly not among the main, although it will affect some of the choices of the urban scene of the subsequent Renaissance period. The rediscovery of the classical world, the invention of perspective, the straight road, the alignment of the eaves and, above all, the search for the ideal city, with the proliferation of treaties on the subject, were the main reasons for urban change. The cities subsequent to the fifteenth century. plan the final effect that wants to make visible the power, passing from the medieval human scale to the scale of the government of the Prince, but all this would not have been possible without technical and technological advancement. The stone houses allowed the passage from the central hearth to the wall fireplace, allowing larger openings and better hygienic conditions; The introduction of firearms required a different conception of the city walls and determined that "no man's land" close to the city.

The urban population grows considerably (Reinhard et al., 1971) but the delimitation of the town walls and the unsafety of the outside environment force to respond to the growing demand for housing in the limited internal space, occupying the free areas and making higher the existing buildings; port cities increase their role thanks to the evolution of the naval sector, as the new sail systems allow them to maneuver and face the open sea; on the other hand, wheeled transport struggles as the wagons that are produced do not carry heavy loads and long distances. Nonetheless, the first post stations are born and progress in irrigation, reclamation and agricultural techniques, together with the evolution of transformation processes and the localization of industries, attenuate the political relationship between city and countryside and, therefore, between city and territory.

The discovery of the Americas generated flows of germs, bacteria and viruses (measles, typhus, smallpox, syphilis, etc.) which, hitherto unknown on one side or the other of the world, exterminated some ethnic groups of the new world and spread new diseases in the old.

The epidemics, even if with lower propagation and consequences than that of the fourteenth century,

continued at more or less regular intervals, becoming semi-endemic. In 1528 a new epidemic of plague broke out (Ministry of the Interior, 1910) which, brought by French troops to Naples in 1526, mainly affected the cities of northern Italy, claiming about 18,000 deaths; moreover, several smallpox epidemics occurred between the end of the 1500s and the end of the 1700s but, in 1796, Edward Jenner identified the first vaccine against the disease (Perrenoud, 2014). In the seventeenth century pandemics of bubonic plague, smallpox and typhus spread, mainly by the movement of armies due to the various wars that raged between European states and kingdoms (Cosmacini, 1987) and in 1749, with smallpox to be considered by now endemic, there was what can be considered the last epidemic of plague and which mainly involved the Kingdom of the two Sicilies, leading the Bourbons to establish the Tribunal of the proto-medical.

In the early nineteenth century, the great cholera epidemic broke out which, according to various estimates, killed between 150,000 and 230,000 people in the various Italian states and, at the beginning of the twentieth century, there was the so-called Spanish flu, propagated by the movement of troops towards the various first world war fronts. In both cases, historians calculate a mortality rate of over 30% (Cosmacini, 2010). These centuries, in addition to the aforementioned epidemics, were marked by fundamental inventions (from movable type printing to the steam engine), by a different vision of the world that had become much larger, by the synergy between science and technology, by the passage from principalities to the monarchies. Cities and territories are transformed to respond to social, demographic and economic change. The capital city, where power is concentrated, assumes a hegemonic role with respect to other urban nuclei; in the cities where the court resides, and equipped with a port, the urban population also increases in the meantime of an overall demographic decline. The width of the streets expands not for hygienic reasons but to allow military parades and carriages of the royal apparatus; the permanent armies require accommodation and catering services, the lower classes are separated from the aristocracy, the flows are polycentric and the increased speed of the carriages demands a new aesthetic of the urban scene. Even the houses are now organized in environments dedicated to the various domestic activities that also differ in the different furnishings. The invention that will revolutionize the space-time relationships of the city, the territory and individual life is the steam engine. The allocative constraints of manufacturing activities fall and both the urban and rural landscape are profoundly changed; the city that had grown as a harmonic organism, however, suffers a fracture, still not healed, and the suburbs will soon be born.

The forces that pushed the change were those of capitalism and political needs and not the demand for urban change required by the numerous epidemics that have marked human and urban history and which, in this century, have been mainly of cholera, a disease that appeared in Europe on a regular basis (Hamlin, 2009; Tognotti, 2000). However, at least one exception should be noted. Naples, due to the viceroyalty rules forbidding the extra moenia constructions, had grown on itself, reaching high residential and building densities; the government responds to the eight thousand deaths caused by the cholera epidemic of 1884 (considered the fifth cholera pandemic) with an urban regeneration plan. In fact, cholera becomes the pretext to accelerate the urban intervention that Ferdinand II Bourbon had already planned to solve the precarious hygienic conditions of the most populous city in the united Italy. A special law was passed (2285/1885) which, among other things, varied the expropriation allowance and allocated funds for the interventions to be carried out, which could also be used by other municipalities that presented plans to improve sanitation conditions. The plan for Naples consisted mainly in the renovation and completion of the sewer and aqueduct network, in the demolition of dilapidated buildings, in the opening of new roads, which "gutted" the lower neighborhoods, in the construction of new residential districts and in the reclamation of marshy areas. The gutting work, also requested by De Petris, was much reduced compared to what

was expected and, in some cases, limited itself to creating a building curtain that blocked the view of the dilapidated neighborhoods and facilitated the action of building speculation.

The smallpox vaccine had been developed at the end of the eighteenth century, while, between 1854 and 1894, the research of Filippo Pacini and Robert Kock identified the cholera vibrio and in 1894 Alexander Yersin and Shibasaburo Kitasato, separately, discovered the bacillus of the plague; in the same years the first vaccines for cholera were produced while the trials for the plague did not prove effective, a condition that still exists today. The last pandemic of bubonic plague occurred at the turn of the nineteenth century and the new century, with a mortality of about 12 million people, most of which concentrated in Asian countries. To date, the plague has, in fact, disappeared from countries where there is good hygiene and no undernutrition.

At this point, it was known that personal and urban hygiene were the best prophylaxis to contain the onset of infectious diseases and the spread of epidemics. It is not a coincidence that modern urban planning is based on plans aiming to solve the poor hygienic conditions of the cities, aggravated by industrialization, with the consequent large urbanization, and expanded through a building speculation that saw land rent growing exponentially; the city is no longer a public institution but appears to be a commercial enterprise to accumulate profits. The urban plans of the nineteenth-century capitals intervene on inadequate viability, proceed to the demolition of the external city walls and of entire neighborhoods considered unhealthy, provide sewers and aqueducts, build the first metropolitan railways and even the homes of the "poor" are equipped with running water and latrines, often one per floor.

2.5 Epidemics and Cities in the Contemporary Age

In response to the conditions of the cities, documented by the essay of Engels (1845), many urban theories were produced especially by the so-called socialist utopians at the very beginning, and then by real urban planners. The Garden City followed the Ciudad Lineal, and then the organicism, the rationalism of the CIAM and the neighborhood unit came. Even if with different settings and purposes, and not explicitly mentioning the pandemics, the protagonists of the urban planning of the time had lived during the years of the last plague or the Spanish flu that had produced more deaths than the First World War (Spinney, 1918). Once again, the theories and urban and architectural action were not directly influenced by the dangerous pathogens and by the rules that public institutions imposed to contain the infection; they were determined by new inventions that changed lifestyles and increased the complexity of social and urban spaces. The press, the illustrated newspaper, the train, the cinema, the elevator, the light bulb, the car, the concrete, the telephone, etc. etc. that changed the conception of space and time and required a city adapted to the new needs of what Eric Hobsbawm (1995) will define the short century and it was Patrick Geddes (1970) who affirmed that "A city is more than a place in space; it is a drama in time".

In 1946 the UN was established, followed in 1948 by the foundation of the WHO, in order to coordinate common health policies and, therefore, also relating to pandemics. The further widespread epidemics of the twentieth century were: the Asian-avian (1957-1958) which was classified as viral pneumonia and caused an estimated number of deaths between one and four million and, ten years later, the Hong Kong flu appeared (1968-1969) which spread in the United States and resumed in 1972, also involving Italy where about twenty thousand victims died (Wason, 2020). The new millennium has been marked by the first Sars-Covid epidemic in 2002 which originated and ended in China, with a limited number of cases and deaths but demonstrated the greater vulnerability of the metropolises; from swine fever (2009-2010) with about three to four hundred thousand

deaths, of which 10% in Europe, a figure not very different from that recorded with the "common" seasonal influences (Roos, 2009). In the latter case, polemics arose over the WHO declaration of pandemic, and no behavior was imposed to the populations.

Lately, the Sars Covid 19 pandemic, still ongoing, has spread globally, causing (so far) almost 4 million deaths, corresponding to 2% of those infected (Ministry of Health, 2021).

3. Pandemics, Environment, Inequality

As we have seen, the pandemics, even the most intense in history, did not lead to direct and significant changes in the urban scene or even long-term changes in social behavior. Nevertheless, the current disease stimulates a careful reflection on the future of the city and urban humanity, as the repeated lockdowns, social distancing, remote work and teaching (during the first lockdown, the companies that in Italy have made use of teleworking tripled and even greater was the increase in the public services sector), the overflow in the hospitals and whatever else, highlighted the weaknesses of urban systems. However, once again the reflection will have to consider the causes and not the symptoms of the urban situation.

One of the first points to consider is the overcrowding of the planet; the nearly eight billion current inhabitants (UN, DESAP, 2019), with projections that count 10Md in 2100, have just under two hectares of land per capita, including desert, forests, glaciers, etc. or areas that are not comfortable for human life. Therefore, the world population lives concentrated on just 10% of the earth's surface. Worldwide policies do not seem to want to address the demographic problem, despite the fact that, since 1989, 11 July has been proclaimed "World Population Day". In this paper we will not afford the issue to embrace the Malthusian theses (1826), those of the Meadows Report (1972), wanted by the Club of Rome or, again, the opposite ones of LaRouche (1983) and other deniers, but it is certain that the overcrowding of the planet, the urban concentration of the population, the consumption of land and the environmental problem are strictly interrelated. Neither the inequalities affecting the world population, both urban and non-urban, can be neglected.

The inequalities are of income, education, quality of life, gender, pollution, freedom of mobility, accessibility (economic and physical) to services, including drinking water; inequalities refer also to the enjoyment of the fundamental and inalienable rights of the human person (ISCC, 2016) enshrined in the Universal Declaration of Human Rights of 1948, and in several other resolutions established by the General Assembly of the United Nations. All that made only some of the civil, political and social rights legally binding. Nevertheless, suppression of elementary freedoms are still practiced in the world and the Covid-Sars2 pandemic has further highlighted the disparities that exist among human beings.

Productive and financial capitalism, devoted to the exclusive pursuit of maximum profit, is among the main causes of the amplification of inequalities, pollution and climatic change in recent decades; the current economic model is an example of the Pareto efficiency, in the sense that it improves the condition of the few by worsening that of the many (Pareto, 1909). The current economic model appears to be structured to further increase the wealth of a few rather than allowing all to achieve a fair standard of living through work (Tirole J. 2016). Nevertheless, a glimmer of light can be glimpsed in the document signed, in September 2019, by the almost two hundred CEOs of the major North American companies (Amazon, General Motors, Pepsi Cola, ...) belonging to the BRT (Business Round Table). The "manifesto" (also pushed by the behavior and choices of consumers) states that the objectives of a company, in addition to just profit and the protection of shareholders, must include the

rights of workers, suppliers, consumers, respect for environment and generate a positive impact on the territories involved (BRT, 2019). Obvious concepts, one could say, also because the declaration does not provide for consequent acts but, in any case, while reiterating fairly obvious principles, it must be noted that one of the most important economic lobbies on the planet has decided to publicly take a very specific position.

It is trivial to observe that the poorest are who suffer most from the effects of overheating, the loss of biodiversity and pollution. The Oxford Committee for Famine Relief (OXFAM, 2016) states that, in the five-year period 2010-2015, the wealth of those working in the fossil fuel sector has increased by 50%, advancing hand in hand with the worsening of environmental conditions; this suggests the obstacles that stand in the way of real policies of change of direction. Also from the OXFAM Reports (2019) we learn that in 2018, 148 people own 1% of world wealth and that while the wealth of the richest continues to grow, that of the poor continues declines.

The interconnection between environmental degradation and inequalities is addressed in several studies (Hamann, 2018; Singer, 2019; Chancel, Piketty, 2015) which demonstrate that the increase in socio-economic disparities corresponds to an increase in negative environmental conditions. and viceversa. Out of the 17 Goals of the 2030 Agenda for Sustainable Development (divided into 169 targets and 244 indicators for monitoring), two specific objectives are explicitly dedicated to "reducing inequality within and between countries" (objective 10) and to the "fight against climate change" (ob. 13), and the remaining objectives are all articulation and particularization of the two problems, except for the last one which is dedicated to building the necessary partnerships.

It should be noted that, despite the progresses, for the 193 signatory countries, including Italy, the expected results are still far from being achieved. The ASVIS report (2021a) shows that in the EU, there is an improvement for twelve goals (1, 2, 3, 4, 5, 7, 8, 9, 11, 12, 13 and 16) and a worsening for three (10, 15 and 17); 6 (water availability and management) appears unchanged, while for objective 14 the negative trend of our country is reported, which is late in transposing European directives and exploits too much fish resources (ASVIS, 2021b).

The Sustainable Development Report 2021 (Sachs et al., 2021) places Italy among the countries at the top of the ranking (26/165) and reports that, with regard to the member countries of the UN, the SARS Covid 19 pandemic has not only slowed down, but also pushed back the path towards sustainable development; in particular, compared to 2015, the indicators relating to the fight against poverty (SDG.1), food security (SDG.2), health and well-being (SDG.3) and industrialization and infrastructural innovation (SDG.9); on the other hand, there has been an improvement in the levels of atmospheric pollution, partly due to the suspension of activities and the reduction of vehicular traffic. Goal 11 of Agenda 2030 (sustainable cities and communities) is divided into five main indicators; our country records a moderate overall improvement in urban sustainability (pp. 260-261) in relation to air pollution and collective transport services. Obviously, the data is the national average and the significant differences between the various geographical areas of the country are not recorded.

4. Which City?

Not losing the circular vision that interconnects the different parts of the territorial system, attention is focused on the city as it is undeniable that it represents the housing choice of most of the world population, because it is the largest producer of pollution, because it is in the cities that have spread the effects of the pandemic the most, because it is in urban centers that inequalities are most evident, because ..., because ...

Do institutions, politics, power groups, and all the other stakeholder that can favor or hinder change, really

have the will and ability to tackle the path to lead humanity towards equitable, inclusive and sustainable urban places?

Given the original definition of sustainable development, do we want to concretely guarantee future generations a quality of life and urban life at least equal to that which our generation received from previous ones?

Since the first and second industrial revolution, since the last world conflict, since the advent of nuclear power and the telematics era and, ultimately, since the era defined as the anthropocene, the impacts on the ecosystem and the consequent loss of biodiversity have grown exponentially. it is known that scientists have different positions on dating the beginning of the anthropocene era (Stoppani, 1864); here we refer to the school of thought that associates the new era with the beginning of the massive withdrawal of fossil fuels and pollution of the atmosphere (Scranton, 2013).

While from industrialization onwards, the world made great strides towards the environmental crisis, the "urban planners" produced theories and models. As already mentioned, the so-called socialist utopians were the first to seek an answer to the urban crisis. Immersed in their own time, most of the solutions leaned towards the foundation of new socio-urban communities and the abandonment of the mephitic industrial city. The elaborations of others, including H. Howard, T. Garnier and A. Soria y Mata, structured models suitable for new urban foundations but also for renovations (today we would say regenerations) of existing cities, also trying to calm down land rent. We cannot, in this paper, to recall the theoretical production and the applications of twentieth-century urbanism, which from the dualism between organicism and rationalism, through the Chicago School, Socgorod, Perry's theory of the neighborhood, reach the modeling of analysis and prediction, to the theory of localization, to studies on hierarchies, to planning by sectors, to Soleri's arcology, to New Urbanism, to Eco-polis, to the wired city, to the smart city, then to the artificial-intelligent city and, finally, to the inserts , often decontextualized, of the archistars aiming at the affirmation of themselves and at a questionable urban economic competition,

Evidently, the list of hypotheses and achievements is by no means exhaustive but serves to demonstrate that the reflection on the urban crisis (with possible remedies) is not a recent acquisition. Sometimes trying to translate theories into practice, more often by absorbing only the surface, with rare exceptions, cities have developed mainly on the basis of land rent, laisser faire-laisses paisser policies, sinister local interests and, in some cases, interests of multinational real estate investments. Since the nineties, the construction of new urban settlements has been driven by various interests, of an economic and/or political nature, as happened in China (Saiu, 2015) and in Israel (Oz, 2007) or in the Persian Gulf to feed tourism (Elsheshtawy, 2009) or to offer alternatives to those who are fed up with skyscrapers, as happens in the USA (Talen, 2005) or those who want to escape from the chaotic African (Banti, 2019) and Central American (Farinella, 2020) megalopolises.

Multinational engineering companies (like many interventions of the so-called archistars) generally operate in contempt of the context, designing and building (especially in the poorest countries) settlements for hundreds of thousands of inhabitants that are advertised as green, smart and sustainable but that in practice, they subtract additional land (often natural soil) reserving it for high-income housing and certainly not to support the need for decent housing for African, South American and Asian populations. Even the concept of mondialité (Glissant, 2007) has at times been used as a bluescreen against the neglect of the real needs of environmental, social and economic sustainability of the places.

The current pandemic has at least had the merit of provoking an updated reflection. The shock caused by the long confinement measures and the stop to most of the economic activities, the awareness that other unknown

viruses will arrive among us (Quammen, 2014), makes necessary to understand if and how to reorganize urban systems in order to be able to live together also during future, epidemiological emergencies.

If, as it is, the city reflects and represents the society that generated it, it is imperative to change the current economic model: in addition to the scholars of specific sectors, Pope Francis (2015) and Greta Thunberg (2019) remind us of it.

The change of course of the economy, however, does not depend on territorial urban planning. Urban planning applies the laws and regulations in force and produces the technical solutions for the choices that institutional decision makers made. Nevertheless, we can play the role of advisors to the prince, outlining the lines of action for a city that is fair, inclusive, resilient, circular and, ultimately, sustainable. If it is not conceivable, much less desirable, that a single model can be described as the objective to which to converge and which will be reconfigured to the urban contexts and cultures of the different places. For example, if the solutions for agricultural slums or Italian nomad camps appear to be simple practicability, it is quite another thing to intervene for the inhabitants of shanty towns, favelas, slums, shantytowns (hypocritically called "informal settlements") and anything else that grips other geo-political areas.

Once again, the science-technology-politics relationship must be called into play in order to be able to face the complexity of cities and the global system of which they are mere elements. It should be bear in mind that knowing the parts of a system does not mean knowing the behavior of the system; therefore, knowing and intervening on the city means understanding how it will contribute to the change in the state of the territorial system, the country system, the continent system, the planet system: Albert Schweitzer's warning "Man has lost the ability to prevent and predict. He will end up destroying the Earth" is still relevant (Carson, 1962).

In this logic, and abandoning the easy slogans relating to urban sustainability, let us ask ourselves what characteristics a settlement habitat must have in order to allow all users a decent quality of life and, at the same time, contribute to improving the ecosystem of the planet. At the same time, we must also ask ourselves if and how to intervene in existing cities to enable them to host the billions of inhabitants of the planet which, as the statistics say, will continue to increase, albeit more slowly than in the past. And, again, let us ask ourselves how cities must respond to risks of all kinds, including virus pandemics.

Obviously, it is not possible to tackle megalopolises with tens of millions of inhabitants, cities that do not exceed one million and villages that do not reach a thousand inhabitants in a single solution; but it is even more wrong to consider at the same time different climatic conditions, urban and social histories at the antipodes, democracies and authoritarian regimes and, even more, disparate economic and natural wealth. At the same time, however, one cannot reason within limited boundaries, denying the relations of the planet system as it is unthinkable to resolve the life of a place as if it were an isolated system. And, where ever there was a need, the current pandemic and migratory pressures remind us of this every day as well as the different availability of vaccines between the rich and poor worlds.

We are in an extremely different context since the postwar period, when the world population was about one third of the current one and the two most populous cities, New York and London, had just over eight million inhabitants; pollution was considered a local problem, which could be solved locally, and there was confidence in the future and in the unlimited availability of natural resources. In a less crowded and technologically undeveloped world, the harmful emissions were not comparable to the current ones; nevertheless, the problem of urban waste disposal was present and industrial activities in urban areas caused pollution of water, soil and air. We were not aware that the carrying capacity of the planet was limited, that the primary resources were not infinite,

ultimately, we were not aware that the uses and customs of human societies determine the speed of entropic degradation and energy dissipation, which means the survival period of the human species.

It was immediately after the second world war that welfare reforms were implemented in England and, at the same time, the Italian Constitution states that it is the duty of the state to remove obstacles to the social and economic equality of citizens. After a few decades, in the eighties, with the push of the American and British governments, the welfare state gives way to the economic neoliberalism, in the belief that the market, left to itself, would be able to distribute wealth. Evidently, this was not the case. Today we are aware that if the economic but also social and environmental development model is not reversed, the planet will not have a long life. Many countries and private companies are launching spacecraft and are heading towards space tourism not for mere personal ambition. We do not want to underestimate the scientific scope of the actions implemented but we cannot neglect the objective of economic exploitation not only of rare minerals extractable from celestial bodies (Spagnulo, 2019) but also of satellite telecommunications, and, perhaps, it is not just like a science fiction novel to hypothesize that the group of multi-billionaires of the planet is looking for alternative solutions to the future uninhabitability of planet earth.

It should be noted that, in addition to the aforementioned LaRouche Jr., there is however a group of scientists who do not share the theories, judged catastrophic, of the majority of the scientific world that attributes the rise in temperatures and its consequences to the emissions of in the atmosphere (Gravila, 2012). In this regard, it should be noted that the directives relating to the Recovery Fund for the economic recovery of European countries require compliance with the "do no significant harm" (DNSH) principle to: mitigation and adaptation to climate change; use and protection of fresh and salt water; circular economy; pollution of water, air and soil; biodiversity of ecosystems.

The International Panel on Climate Change of the UN (IPCC, 2022) indicates which are the human activities that contribute most to the emission of greenhouse gases and most of these take place in cities or, in any case, depend on urban life and the same is true for the activities producing the various types of pollution, as explained by the Annual Report of the UN Environment Program (UNEP, 2020).

In Italy, the urban planning is the discipline that organizes "... the use of the territory for the purpose of locating and typing settlements of all kinds with the related infrastructures at the various scales envisaged, takes care of pre-ordering the organization of the territory, in order to allow the social community to be able to carry out the various activities" and is "the regulation of the use of the territory including all the cognitive, regulatory and management aspects concerning the operations of safeguarding and transforming the soil as well as the protection of the environment" (Judgment Constitutional Court No. 239 of 1972).

The systemic approach allows us to observe and act simultaneously on the city of stone and the city of relationships (Beguinot, 1989). Urban systems are structured on activities that relate through material and immaterial communications, the material ones configure the shape of urban fabrics (Urbani, 1983) which is made up of volumes, uncovered areas and linear elements, the intangible ones constitute the lymph and vitality of a settlement; all together, tangible and intangible, collaborate in urban metabolism (Carta, Barbara, 2015). Urban plans harmonize land use and communications network and outline the direction and methods of urban and territorial development; so that everything has the chrism of sustainability, and furthermore, the urban plans must be the result of the participation of the community and not of the interests of the aforementioned real estate multinationals and related political advantages.

Having said this, let us ask ourselves how it is possible to intervene in existing cities to improve their

functionality, without neglecting their beauty, symbolic meanings and the necessary semantics (AA.VV., 1994).

5. Urban Functions

5.1 Transport and Mobility

Mobility is the basis of urban life; it structures its shape and allows its metabolism. During the pandemic, drastically limited mobility, -67% fewer daily trips, 84% fewer passengers * km- (ISFORT, 2020), contributed to reducing carbon emissions into the atmosphere (IEA, 2020), energy consumption and the consequent ecological footprint (GFN, 2020). It should not be hidden, however, that the fear of infection has almost led to the abandonment of collective transport and, given the short distances to be traveled, has increased the so-called active mobility.

Sustainable mobility requires simultaneous action on carriers, channels, locations and times for carrying out activities. Mobility planning models have generally been aimed at increasing performance and reducing waiting times in traffic (Poli, 2011), neglecting the real needs of citizens and economic and environmental impacts (Litman, 2002). The urban plan is responsible for the network of flow channels and the location of parking lots, while the public transport service and traffic organization are delegated to sector plans which, for the principle of subsidiarity, are in any case entrusted to the local authorities

Facilitated access to the public transport service reduces the social and environmental impacts and, in this regard, it should not be forgotten how the school in the presence has been undermined by the lack of transport services rather than by the inadequacy of the buildings. Currently in Europe, with Tallin (Estonia) and Aubagne (France) in the lead, there are about fifty cities that provide general transport free of charge or limited to specific time slots and/or categories of users (students, disabled, elderly, ...). The results are more than encouraging as the use of private vehicles has decreased, traffic jams have decreased, the environmental impact has been mitigated and most of the population shares the choice despite the fact that it is financed by the municipal budget.

An effective and fair collective transport service, i.e., good ramification on territory, economically accessible and with adequate travel times, encourages the use of public transport, even more so if, at the same time, private traffic is discouraged through the LTZ (Limited Traffic Zone), speed limits and parking bans, in addition to mobility sharing policies, the offer of bicycles (and cycle paths) and scooters for short journeys.

Obviously, safety must be guaranteed in the mobility projects, and if Mumford urged planning for all stages of life, this includes childhood and old age, ages during which mobility requires special precautions; a city where every move is guaranteed even to people with temporary or chronic handicaps, it is a safer and more comfortable city for everyone. Clear and visible signage together with adequate urban furniture (shared spaces and liveable streets) also contribute to the safety of places, both because they allow spontaneous orientation and vigilance and because they feed the sense of belonging.

ISFORT data (2020) confirm that in Italy traffic volumes are increasing and, at the same time, we are far from the European averages both for the use of public transport and for the active urban mobility which even appears to be decreasing (minus 35%). As already mentioned, in many European cities urban policies are in place to increase the use of collective transport and active mobility, while in our country there are few municipalities that act in this sense.

In order to improve the path towards urban sustainability, the actions on mobility must act synergistically with the actions on the distribution of activities and on the times of use of the same; this is not impossible given that urban planning, traffic plans and times of use are partly the responsibility of local administrations. It is evident that such a strategy, however, requires coordination and sharing with the other administrative areas operating in the area and with the political choices of higher-level governments. School authorities, health authorities, judicial authorities, religious authorities, port authorities, ... metropolitan areas, provinces, regions and the state, in the principle of subsidiarity and differentiation, must act quickly, resolving conflicts of competence and making it possible to manage plans sustainable urban planning.

Covid 19 has made us understanding how important proximity businesses are, not referring only to points of sale but also and above all to public services that must be made easily accessible by the collective transport service. Constitution and consequent laws require that fundamental rights be guaranteed to all citizens, yet economic and geometric accessibility is not always ensured.

5.2 School Systems

If the appellation Next Generation EU has a meaning, it can only start from school, because it is from the school that the process of social inclusion starts, nourishes the potential of future generations and, consequently, also contributes to the fight against poverty. It should be noted that two thirds of the poor live in middle-income countries (UNRIC, 2020) and that in Italy almost six million people live in conditions of absolute poverty, a situation that has worsened during the long pandemic period (ISTAT, 2020).

The distance learning activity, which was overexploited during the pandemic, has revealed that it cannot be the priority modality for the training of the next generation; the recent INVALSI tests (National institute for the evaluation of the education and training system) have shown, in addition to greater evasion, that the level of learning of students has significantly lowered (in particular in Italian, Mathematics and English); Southern and marginal areas and children belonging to the families unable to support them, suffered the most from the distance teaching (INVALSI, 2021). In overcrowded flats, lacking adequate technological means and with family members with few cultural tools, the distance learning can only be harmful and deprive students of the right to emancipation, leading to yet another economic discrimination. The lesson of Don Lorenzo Milani (1967) has probably been forgotten by many and certainly does not represent the focal point of the National Recovery and Resilience Plan (PNRR, 2021).

Coming back to urban spatiality, preschool assistance and compulsory schooling must be within walking distance, yet it is clear that in many situations those principles are not respected. Even if the media have emphasized the city of 15 minutes announced by the mayor of Paris, it would be enough to recall the principles of neighborhood unity, Ministerial Decree 1444/1968 and the related circulars on the relationship between services, housing and age groups.

The school time plan must be structured in such a way as to allow parents to accompany the children without conflict with going to work. Actions on location and timing will be different in medium-large cities and small municipalities spread across our country (more than a thousand municipalities with less than 1000 inhabitants and more or less as many below 3,000 inhabitants) and in large part located in inland areas, characterized by a widespread lack of higher-level services, to reach which (secondary school, hospital, railway station) travel times of even more than one hour are required.

It is known that the EU has for some time launched programs aimed at economic, social and territorial cohesion, for the revitalization of marginal territories. In Italy the National Strategy for Internal Areas (SNAI) is active which, however, has not yet shown significant results. In this regard, it should be noted that the PNRR

allocates about 20 Md (mission 4) for education and research and, of these, 1.5 Md are aimed at "... reducing the territorial gaps in the I and II cycles of upper secondary school" (p. 176); in line with the general approach of the program, a market logic seems to prevail also for schools and, moreover, it is not clear how the gap between the different areas of the country will have to be addressed and it is not even explained what role the system school will have to perform for social inclusion. It should not be forgotten that, in the marginal areas, education is burdened not only by the distances to be covered but also by the turnover of teachers, which reduces the didactic continuity; both the problems could have solutions, with investments in light mobility of all kinds (recovery of old abandoned tracks, moving walkways, escalators, lifts, trolleybuses, etc.) and with adequate salaries for teachers (bound to multi-year contracts) in disadvantaged areas

In order for schools to fully play the role that the Constitution entrusts to them, they must be centers of social life for the neighborhoods; the organization of the buildings must be such as to allow the possibility of carrying out other activities, during and after the hours dedicated to teaching. Certainly, primary school is the basis of social life, of the construction of a sense of community and is closely related to residential care, but a similar discourse is also important for temporary residences, such as accommodation for students who must be close to universities.

During the pandemic, the media wrote of substantial exodus from large cities to small towns or, for the privileged few, to isolated homes. This was possible for those who could work remotely and make use of e-commerce. But, is this the future that awaits us? Is this the future we wish for? If we are still convinced that the meeting and exchange between people is the lifeblood of social construction and the possibility of evolution, then the school function must once again become the center of urban and non-urban life; if school education is structured in these ways, it will be able to play a significant role in marginal areas so that they can hope for a future of social and economic recovery.

5.3 Health Care Service

As well as for transport policies, even for schools, health, housing, etc., it has been shown that the welfare state, when it activates virtuous actions, also produces positive effects for the economy. For example, if we had invested in the protection of fragile groups using paid sick leaves and temporary work replacement, Covid 19 would have spread less, and the costs for the public budget would have been lower than those incurred for health care (Terna, 2021). Despite the great efforts made during the most serious periods of the pandemic, the effect of the continuous cuts in healthcare spending and, in particular, the abandonment of health care systems at local level was evident.

Italian, traditional town planning classifies urban functions into three levels, based on the radius of influence and catchment areas. It is known that even when the plans have been drawn up in compliance with the principles of neighborhood unity, implementation has almost always been lacking. It is not rhetorical to ask how the management of the pandemic could have been different and better if clinics and other basic health services had still been easily accessible to all citizens; the vaccination phase would also have been simpler if the local health services had been well distributed in urban areas. School and primary health care can be integrated with each other. Overcoming the bureaucratic constraints, a basic clinic could be allocated within the school complex, also open to the inhabitants and workers of the area, aimed at accommodating the health needs of patients on the territory and, at the same time, creating opportunities for meeting among the diversities. With the technological potential available, it is much easier to hypothesize a widespread spatial organization of the basic health service, connected to the network for the exchange of data and connected to the hospital service to which, representing the highest level unit, will be addressed only for what is not in the characteristics of territorial health care; the PNRR (p. 225) would seem to want to act in the sense of integrated health services by providing, among other things, the establishment of 1,288 Community Homes and an increase in funds for home care.

5.4 Housing

The latest ISTAT census shows us that about 85% of the buildings are residential; an obvious fact that states that most of the urban volumes are intended for housing. Residential, private and public buildings, playing a significant role in the organization and urban conformation, require particular attention both in the way they are arranged and in the building and architectural quality. Since the nineties, the state has abdicated one of the fundamental tasks, namely guaranteeing the needed housing for the less well-off classes; in particular, since the transfer of planning competence to the Regions (Legislative Decree 112/1998), the production of public housing has been minimal and unable to meet the needs, also generated by migratory flows, both internal and from abroad (Perilli, 2000). On the other hand, especially in the metropolitan areas of the South, most of the new private homes remain empty due to the absence of a demand capable of supporting the cost of purchasing or renting; first, the introduction of the fair rent (L.392/1978) then, the possibility of accessing a contribution for the lease (L. 431/1998) and the legislation governing social housing (L.133/2008) have proved to be ineffective, given that the homeless in Italy are still estimated at over fifty thousand (OECD, 2021).

When discussing housing (but also industrial construction), one cannot ignore the phenomenon of unauthorized use that afflicts our country. Although with lower numbers than the previous ones, the lack of the demolitions and the control of the territory, the bad practice of illegal constructions continues (CRESME), with the "complicity" of the "Piano Casa" (Law 33/2008) and of the Consolidated Law on Construction (Articles 34 and 38) which, in some way, would seem to invite cunning conduct, in order to obtain personal benefits in contempt of collective interests. In these pages it is not possible to address the problem of unauthorized access but it cannot be overlooked that if it is necessary to rethink the housing model in relation to possible future pandemics and, more generally, to the sustainability objectives, the policies of the sector will have to undergo a turnaround. However, it is not possible to be optimistic in this sense, as the PNRR, which acts as a political guide for the next few years, also seems to have validated the principle that cunning should be rewarded; we refer to the issuance of the Decree-Law 31 May 2021, n. 77 which, by simplifying the procedures, in fact, admits illegal properties to making use of the contributions disbursed by the state for efficiency, and even makes demolitions almost impossible.

Together with the energetic and structural efficiency of the buildings, the living space as a whole must also be revisited. The houses that have gradually reduced their size and brought to the essential, today must also be rethought to ensure the possibility of spending a longer time in them than they have been accustomed to so far. The home, in addition to traditional functions, must also be able to adequately accommodate the possibility of remote work but also allow home care for those in need of care that does not require hospitalization in health facilities; in addition, to encourage responsible behavior, spaces should be able to provide adequate service surfaces, necessary for the collection of waste, which involves both the organization of the interior spaces but also the external relevant spaces. Although apparently in contrast with the non-promiscuity required in the event of epidemics, in condominium buildings, the possibility of sharing some of those services that traditionally are inside the home, such as, for example, washing machines and ironing rooms, should not be overlooked. That would also contribute to socialization and respect for the common goods. These are just a few examples of a home that will have to be calibrated differently, certainly with higher costs but, in any case, with degrees of flexibility that make it resilient to unforeseen events and situations.

6. Conclusion

We will be better, we will be different, we will be aware, ... were the slogans that accompanied the first lockdown in Italy: the responsible attitude of the populations dissolved in the heat of the summer holidays and partly disappeared even in the participation in vaccine campaign.

It is not epidemics that change societies, just as earthquakes, floods, volcanic eruptions or other calamities that accompany our history have not been. Disastrous events serve to highlight the weaknesses of the settlement systems that we have created, often superficially, underestimating the consequences of choices that were not oriented to the well-being of the community but pursued other interests. The urban expansion and the infrastructure of the territory have put a strain on the relationship between man and nature or rather, since man is part of nature, they invite us to reconsider the role that the human being plays in the attempt to enslave nature to its own interests and to the detriment of other species. It is perhaps useful to re-read "Man and nature or the earth's surface modified by man" in which George Perkins (1872) describes how man has increasingly extended his dominion over "his material kingdom" triggering effects on " ... Hygrometric, thermometric, electrical and chemical conditions of the atmosphere...", and he writes it, unheard, over a hundred years before the Brundtland and Meadows reports and the Rio conference (1992).

It is trivial to say that natural disasters would be much less catastrophic if we did not continue to build on the slopes of volcanoes, on the banks of rivers, on landslides if we did not continue to waterproof the soils, to deforest, to bury streams, etc.; it continues to do so despite being able to calculate the risk factor both on a deterministic and probabilistic basis. It could be objected that there are already laws that prevent all this, but laws not really perceived by the population, not followed by the necessary control, are destined not to be respected.

The capacity to control the territory, together with a relationship of trust between institutions and citizens, is the basis of a healthy social and urban coexistence. Sociologists teach us that the first control is the spontaneous one, the so-called "eye on the road", which if it is suitable to discourage petty crime it certainly cannot be for the implementation and management of the Plans and, above all, for the respect of constraints which the citizen is often not even aware of. If in the municipality of over twenty thousand inhabitants there are only four Municipal Police employees, it is not possible to monitor the use of the territory and works will continue to be carried out that will not stop in the bud and will not be demolished once completed.

House, school, transport, health and primary services are the essence of the city and urban life and require participation in a healthy and adequate settlement environment in all its components; it does not only concern the spatial and functional organization of cities, large and small, including those of the areas that will have to lose their marginal status, but it requires the construction of a different and better society than the current one. If the first is the responsibility of the urban plan, the second is the responsibility of the political institution that will have to invest not so much in economic capital as in human capital and social capital.

References

AA.VV. (1994). Carta di Megaride 94, Napoli: DIPIST, UNINapoli, Giannini Editore.

Alfani G. and Melegaro A. (2010). Pandemie d'Italia, Milano: Egea Spa.

- ASVIS (2021a). Il Piano Nazionale di Ripresa e Resilienza, La Legge di Bilancio 2021 e lo Sviluppo Sostenibile. https://asvis.it/public/asvis2/files/Eventi_ASviS/Presentazione_presidente_ASviS_Stefanini_Analisi_Pnrr_Legge_Bilancio_202 1.pdf.
- ASVIS (2021b). Vita Sott'Acqua. https://asvis.it/goal14#
- Banti S. (2019). "La ricetta Africana", Abitare-Corriere della Sera, available online at: https://www.abitare.it/it/habitat/urban-design/2019/09/19/som-new-towns-in-africa/
- Beguinot C. (1989). La Città Cablata un'Enciclopedia, Napoli: Giannini Editore.

Bergdolt K. (2020). La Peste e L'alba: La Grande Pandemia e le Conseguenze Inattese, Milano: Libreria Pienogiorno

- Bishop R. A. (2003). "The history of Bubonic Plague", Houston: Biomedical Sciences University of Texas Health Science Center, available online at: https://web.archive.org/web/20080415231721/http://dpalm.med.uth.tmc.edu/courses/BT2003/ BTstudents2003 files%5CPlague2003.htm.
- Chancel L. and Piketty T. (2015). "Carbon and inequality from Kyoto to Paris", in: *Iddri-PSE Conference on Environmental Inequalities: From Research to Policy*, Paris, France, November.
- BRT (2019). "Purpose of a corporation", available online at: https://purpose.businessroundtable.org/.

Carson R. (1962). Silent Spring, Cambridge, Mass.: Houghton Mifflin Company, Riverside Press.

Carta M. and Barbara L. (Eds.) (2015). Ipermetabolismo Urbano, Ariccia: Aracne Editrice Int.le SrL.

- Corradi A. (1865). Annali Delle Epidemie Occorse in Italia Dalle Prime Memorie Fino al 1850, Bologna: Tipi Gamberini e Parmeggiani.
- Cosmacini G. (1987). Storia Della Medicina e Della Sanità in Italia: Dalla Peste Europea Alla Guerra Mondiale, 1348-1918, Bari: Laterza.
- Cosmacini G. (2005). Storia Della Medicina e Della Sanità in Italia: Dalla Peste Nera ai Giorni Nostri, Bari: Laterza.
- Cosmacini G. (2010). Storia Della Medicina e Della Sanità in Italia, Bari: Laterza.
- Elsheshtawy Y. (2009). Planning Middle Eastern Cities: An Urban Kaleidoscope, London-New York: Routledge.
- Engels F. (1845). Die Lage der Arbeitenden Klasse in England, Leipzig: Otto Wigand.
- Farinella R. (2021). "Retoriche urbane al tempo della pandemia", Contesti, Città, Territori, Progetti, Firenze: University Press, Vol. 3, No. 2, pp. 60-61, available online at: https://oajournals.fupress.net/index.php/contestiarticle/view/12289/12194.
- Fasoli G. and Sella P. (Eds.) (1939). Statuti di Bologna Dell'Anno 1288, Vol. II, Biblioteca Apostolica Vaticana.
- Geddes P. (1970). Città in Evoluzione, Milano: Il Saggiatore.

GFN (2020). Global Footprint Network, 2020, available online at: https://www.overshootday.org/solutions/cities/>01/2020.

Glissant E. (2007). Tutto-mondo, Roma: Edizioni Lavoro.

Gravila M. (2012). L'Onda Anomala Dei Media, Milano: Franco Angeli.

Hamann M., Berry K., Chaigneau T., Curry T., Heilmayr R., Henriksson P. J. G., Hentati-Sundberg J., Jina A., Lindkvist E., Lopez-Maldonado Y., Nieminen E., Piaggio M., Qiu J., Rocha J.C., Schill C., Shepon A., R. Tilman A.R., van den Bijgaart I.

and Wu T. (2018). "Inequality and the biosphere", Annual Review of Environment and Resources, Vol. 43, No. 1, pp. 61-83.

Hamlin C. (2009). Cholera, The Biografy, New York: Oxford University Press.

Hobsbawm E. J. (1995). Il Secolo Breve, 1914-1991: L'era Dei Grandi Cataclismi, Milano: Rizzoli.

IEA (2020). "Report extract global energy and co2 emissions in 2020", available online at: https://www.iea.org/reports/global-energy-review-2020/global-energy-and-co2-emissions-in-2020.

INVALSI (2021). Available online at: https://www.invalsiopen.it/presentazione-risultati-prove-invalsi-2021/.

- IPCC (2022). "AR6 synthesis report: Climate change 2022", available online at: https://www.ipcc.ch/report/sixth-assessment-report-cycle/.
- ISFORT (2020). "XVII Rapporto Sulla Mobilità Degli Italiani, 2020", available online at: https://www.isfort.it/wp-content/uploads/2020/12/RapportoMobilita2020.pdf.
- ISSC, IDS, UNESCO (2016). World Social Science Report 2016 Challenging Inequalities: Pathways to a Just World, Paris: UNESCO Publ.
- ISTAT (2020). Le Statistiche Dell'Istat Sulla Povertà, Report 2020.
- Kagan D. (2003). The Peloponnesian War: Athens and Sparta in Savage Conflict 431-404, New York: Viking.
- Kucharski A. and Peri F. 2020. Le Regole del Contagio, Venezia: Marsilio editore.

LaRouche Jr. L.H. (1983). There Are No Limits to Growth, New York: New Benjamin Franklin House.

Le Goff I. (1982). "L'immaginario urbano nell'Italia medievale", Storia d'Italia, Annali, Vol. 58, No. 5, pp. 239-284.

Lester K. L. (ed.) (2006). Plague and the End of Antiquity: The Pandemic of 541-750. New York: Cambridge, University Press.

Littman R. J. and M. L. (1973). "Galen and the antonine plague", American Journal of Philology, Vol. 94, No. 3, pp. 243-255.

Litman T. (2002). "Evaluating trasnportation equity", World Transport Policy & Practice, Vol. 8, No. 2, pp. 50-65.

Malthus T. R. (1826). Essay on the Principle of Population. 1, London: John Murray, C Roworth.

Marcone A. (2002). "La peste Antonina: testimonianze e interpretazioni", Rivista Storica Italiana, Vol. 114, No. III, pp. 803-819.

Marsh G. P. (1872). L'uomo e la Natura Ossia la Superficie Terrestre Modificata per Opera Dell'Uomo, Firenze: G. Barbera Editore.

Meadows Do., Meadows De., Randers J., and Berens W. III (1972). The Limits To Growth, New York: Club di Roma. Universe Books.

Milani don L. (1967). Lettera a Una Professoressa, Firenze: Libreria Editrice Fiorentina.

Ministero dell'interno (1910). La Peste di Napoli del 1526, Napoli: Giannini e Figli.

Ministero della Salute (2021). Available online at: https://www.salute.gov.it/portale/nuovocoronavirus/dettaglioContenutiNuovo Coronavirus.jsp?lingua =italiano&id=5338&area=nuovoCoronavirus&menu=vuoto.

Morens D. M., Folkers G. K. and Fauci A. S. (2009). "What is a pandemic?", *The Journal of Infectious Diseases*, Vol. 200, No. 7, pp. 1018-1021.

Naphy W. and Spicer A. (2006). La Peste in Europa, Bologna: Il Mulino.

OECD (2021). "HC31: Homless population", available online at: http://www.oecd.org/els/family/HC3-1-Homeless-population.xlsx. OXFAM (2016). "Report 2016", available online at:

https://www.oxfamamerica.org/explore/research-publications/annual-report-2016/.

OXFAM (2019). "Report 2019", available online at: https://www.oxfamamerica.org/explore/research-publications/annual-report-2019/.

OZ A. (2007). Non Dire Notte, Milano: Feltrinelli.

Papa Franciscus (2015). Laudato Si', Sulla Cura Della Casa Comune, Roma: Libreria Editrice Vaticana.

Pareto V. (1909). Manuale di Economia Politica con una Introduzione Alla Scienza Sociale, Milano: Società Editrice Libraria.

Perilli G. (2000). Casa e Funzione Pubblica, Milano: Giuffrè.

- Perrenoud A. (2014). "Variole petite vérole", *Dictionnaire Historique de la Suisse*, available online at: https://hls-dhs-dss.ch/it/articles/007981/2014-12-27/.
- Phythian-Adams C. (1979). Desolation of a City: Coventry and the Urban Crisis of the late Middle Ages, New York: Cambridge University Press.
- PNRR (2021). *Piano Nazionale di Ripresa e Resilienza*, available online at: https://www.governo.it/sites/governo.it/files /PNRR_0.pdf.

Poli C. (2011). Mobility and Environment, Dordrecht, Heidelberg, London, New York: Springer.

Quammen D. (2014). Spillover, Milano: Adelphi.

Reinhard M. R, Armengaud A. and Dupâquier J. (1971), Storia Della Popolazione Mondiale, Bari: Laterza.

Rich J. (ed.) (1992). The City in Late Antiquity, London: Routledge.

Roos R. (2011). "Study puts global 2009 H1N1 infection rate at 11% to 21%", *CIDRAP*, available online at: https://www.cidrap.umn.edu/news-perspective/2011/08/study-puts-global-2009-h1n1-infection-rate-11-21.

Russell J. C. (1968). "That early plague", Demography, Vol. 5, No. 1, pp.174-184.

Sachs J. D., Kroll C., Lafortune G., Fuller G. and Woelm F. (2021). Sustainable Development Report, Cambridge: Cambridge University Press.

Saiu V. (2015). Città tra Europa e Cina, Milano: Franco Angeli.

Scranton R. (2015). Learning How to Die in the Anthropocene, San Francisco: City Lights Books.

Singer M. (2019). Climate Change and Social Inequality, London: Routledge.

Spagnulo M. (2019). Geopolitica Dell'Esplorazione Spaziale, Soveria Mannelli-CZ: Rubbettino.

Spinney L. (1918). L'Influenza Spagnola: La Pandemia che Cambiò il Mondo, Venezia: Marsilio editore.

Stathakopoulos D. C. (2004). Famine and Pestilence in the Late Roman and Early Byzantine Empire, London: Routledge, Taylor and Francis Group.

Stoppani A. (1864). "Saggio di una storia naturale dei petrolii", Il Politecnico, Vol. 23, No. 2, pp. 5-94.

Talen E. (2005). New Urbanism and American Planning: The Conflict of Cultures, London-New York: Routledge.

Terna P. (2021). "La complessità del fenomeno urbano, i mostri e la simulazione di fronte alla pandemia", BoLive, Università di

Padova, available online at: https://ilbolive.unipd.it/it/taxonomy/term/9853.

Tirole J. (2016). Économie du Bien Commun, Paris: Presses Universitaires de France.

Tognotti E. (2000). Il Mostro Asiatico. Storia del colera in Italia, Bari: Editori Laterza.

Thunberg G. (2019). "Speech al Parlamento Europeo", available online at: https://www.ilpost.it/2019/04/16/video-greta-thunberg-parlamento-europeo/.

Ujvari S. C. (2002). Storia Delle Epidemie, Bologna: Odoya.

UN, Department of Economic and Social Affairs Population (2019). "World population prospect", available online at: https://population.un.org/wpp/DataQuery/.

UNEP DTU Partnership (2020). "Emissions gap report 2020", available online at: https://www.unep.org/emissions-gap-report-2020.

UNRIC (2020). "UN75, I grandi temi: disuguaglianza, come colmare il divario", available online at: https://unric.org/it/un75-i-grandi-temi-disuguaglianza-come-colmare-il-divario/.

Urbani L. (1983). "Organismo e tessuto urbano", Il Mulino, Vol. 285, No. 1.

Wason I. (2020). La Patologia Dell'Influenza, Independently Published.

Whittow M. (1996). The Making of Byzantium, Berkeley: University of California Press, pp. 600-1025.