

## EPHEMERAL HABITABILITY: PUBLIC SPACE AS A REFUGE FROM DISASTERS IN MEXICO CITY

Milton Montejano Castillo Mildred Moreno Villanueva



### INTRODUCTION: THE PUBLIC SPACE WHEN FACING DISASTERS AS AN OBJECT OF INVESTIGATION

1 Although the term “open space” is used in the literature related to this issue, for the purposes of this article, we consider open space as part of the definition of public space, as according to Lofland (in Delgado, 2011: 17-18), by public space we can understand “Those areas of a city which, in general, everybody has legal access to... the city streets, its parks, its public recreational areas... the public buildings or the ‘public areas’ of private buildings”.

2 Understanding the term “resilience” as the capacity that a given territory and the elements it comprises have, to adapt themselves to adverse circumstances after a disaster.

3 This refers to the quantification of surfaces lost over time that can be used in case of emergency and that represent a very important resource in cities threatened by disasters (Turer, 2015, pp. 729-742; Mafi et al., 2012, pp. 302-313).

In recent times it has been questioned whether the urban form can facilitate a city's disaster recovery process and, in particular, it has been shown<sup>1</sup> that public spaces can play a crucial role in the recovery stage (Allan, et al., 2013, pp. 242-262).

When considering public space as an essential resource in cities that live under a risk of disaster, different issues can be identified in this regard, like the integration between urban design and the theory of resilience<sup>2</sup>, considering open spaces as a “second city” during disaster recovery (Allan & Bryant, 2014); the longitudinal analysis<sup>3</sup> of available public space in earthquake prone cities (Turer, 2015; pp. 729-742; Mafi et al., 2012, pp. 302-313); the geographical analysis of open spaces used during disasters and their relationship with the urban form (Villagra et al., 2014, pp. 66-78). The construction of disaster scenarios is another issue where public space is considered as an area of shelter for possible earthquakes, using quantitative criteria like the estimation of the demand for space, the suitability of spaces and their accessibility (Anhorn & Khazai, 2015, pp. 789-803; Zhao et al., 2017, pp. 1-20); the new public spaces built after earthquakes as a means of innovation and community participation (Bryant & Allan, 2013); or the significance or change in significance of the public space when facing disasters (Berroeta et al., 2016, pp. 143-170; Webb, 2007, pp. 430-440).

Even though all these studies refer to considering public space as inhabitable, in urban politics and academic studies, public space is generally not conceived as an inhabitable space, but rather a transitional space, and the studies there are on inhabitability of public space under these circumstances are limited. Different authors consider that inhabitability refers solely to the material and structural conditions of built spaces, without considering the social outdoor aspect, which is why, for the purposes of this text, it is considered that inhabitability would be both inside and outside the architectonic element.

## METHODOLOGY: THE SWOT TOOL TO ANALYZE PUBLIC SPACE IN THE CONTEXT OF SEISMIC RISK

---

Although this inhabitability in the public space is also built by need during the most unexpected moments.

Mexico, on being located on the interaction area between two tectonic plates (the Cocos and North-American Plates), is a very seismically active zone (Meli, 2002; pp 125-146). This means that after flood risk, the land subject to seismic risk in Mexico is more than 540,000 km<sup>2</sup>, with almost a third of the country and almost a third (31 million in 2010) of the population exposed to this type of risk (SEGOB, 2012, p. 14). From these 31 million, more than 20 million are concentrated in the Metropolitan Area of Mexico City (ZMCM).

The earthquake of September 19th 2017 is among the most recent seismic events. Measuring 7.1, it hit at 13:14 with an epicenter in the states of Morelos and Puebla, causing the deaths of 369 people throughout the country and serious damage in several cities in the Republic of Mexico. This event reminded Mexican society that inhabitability, even improvised, is a need and must continue after a disaster, even in the public space. This article aims at exploring the factors that facilitate or limit inhabitability conditions in the public space during emergency situations in Mexico City. We start from the hypothesis that the availability and inhabitability of the public space has been based on the adoption of economy-backed trends more than on populational needs, which results in exclusive and uninhabitable public spaces if there is a disaster.

Due to their complexities, each one of the issues that link public space and disasters has practically been worked on separately, which is why this article tries to integrate them into a single analysis methodology. Considering the multiple factors that have an impact on the preservation, management and adaptation of public space in a city at risk of disaster, this section presents the SWOT method to integrate the strengths, weaknesses, opportunities, and threats for public spaces as a disaster resource in Mexico City, using seismic events that occurred there as a starting point, aiming at formulating strategies for the future management of public space.

SWOT analysis has traditionally been considered as a prospective study tool that helps identify problems and opportunities to create scenarios. SWOT is the abbreviation of: a) Strengths, which are internal and positive, b) Weaknesses, which are internal and negative; c) Opportunities which are external and positive, and finally d) Threats, which are external and negative. Once these elements are identified, each and every one is crossed checked with each other to formulate strategies using the following questions: Strengths against Opportunities: Which strengths can be used to maximize the opportunities identified? Weaknesses against Opportunities: Which actions can be implemented to minimize the weaknesses identified? Strengths against Threats: How can strengths be used to minimize threats? And Weaknesses against Threats: How can weaknesses be minimized to avoid the threats identified.

To formulate each one of the SWOT analysis categories, hemerographic and visual references and bibliographies have been used starting from photos and videos to document the use of public space during the 1985 disaster. A field study was carried out to document the use of public space in 2017 to corroborate how many and which spaces used in 1985 were used again in 2017. An analysis of the programs which have been made for this purpose in recent decades was done for the aspects of public space management. Although it appears to be a very simple method, it can be a very good way to classify documental and historical aspects into an analytical outline to derive strategies; and surprising despite it being an effective tool, it has rarely been used in architecture and urbanism studies. The strengths, weaknesses, opportunities and threats used are based on the results of research projects made previously by the authors.

4 Research projects IPN-SIP 20181220 and 20161821, financed by the Secretariat of Investigation and Postgraduate Studies of the National Polytechnic Institute, Mexico, with the goal of analyzing urban transformations in areas under seismic risk in Mexico City, to better understand the role that open spaces play after a disaster, as well as to document the urban innovations introduced in cities in the reconstruction process to contribute, where possible, with directives for the post-disaster process in Mexico. This research has been carried out on the so-called "Ring of Fire", the strip around the Pacific Ocean which has the most seismic activity on the planet.

## RESULTS: STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS OF THE PUBLIC SPACE ON FACING DISASTERS IN MEXICO CITY

When talking about public space and disaster associated inhabitability, many factors come into play, ranging from the fight to avoid the disappearance of the public space caused by privatization, to the necessary coordination of population participation and programs to adapt and prepare spaces for an emerging situation. Considering the multiple factors involved in this phenomenon, and with the goal of simplifying a reality that in itself is already very complex, the decision was made to use the SWOT matrix tool, where the goal is to make an approximation of the significant variables that affect an object of study (Gándara et al, 2012, pp. 328-338). The strengths, weaknesses, opportunities and threats for a public space as a disaster resource in Mexico City have been identified from a long-term research project<sup>4</sup> made by the authors, so bibliographical and visual references like photographs and videos have been used to document the uses of public space, like the case of the 1985 earthquake.

With the goal of making reading easier, the individual SWOT analysis titles are indicated in the footnotes, at the end of each paragraph, and the complete layout is shown below [Table 1]

**Table 1**

SWOT analysis to prepare strategies to preserve and promote the inhabitability of public space when facing disasters in Mexico City.  
Preparation: authors

	<b>Opportunities (external / positive)</b>	<b>Threats (external / negative)</b>
	(O1) Creation of new public spaces post-disaster. (O2) Deindustrialization as an opportunity to create new public spaces. (O3) Universities as a human resource to adapt public spaces when facing disasters.	(T1) Increase in the privatization of public space used during disasters. (T2) New conflicts regarding the public spaces the disaster left behind. (T3) Indiscriminate verticalization
<b>Strengths (internal / positive)</b>	<b>Strengths-opportunities strategies</b>	<b>Strengths-threats strategies</b>
(S1) A proven role of public spaces in the historic and modern city as a resource during emergencies. (S2) Protection heritage sites in public spaces belonging to the historic city. (S3) Players and programs for public space management	(S1-S3/O3) Involving universities, the government and civil society to adapt public spaces with regard to historic and modern monuments. (S3/O3) Preparing public spaces for disasters in more specific areas. (S3/O2) Defining projects in deindustrialized areas considering the seismic nature of the area.	(S3-T1) Regulation of the use of already privatized public spaces as part of the recovery programs. (S3-T2) Establishing a more organized dialog between civil society and the authorities. (S2-T3) Reinforcement of directives for heritage protection.
<b>Weaknesses (internal / negative)</b>	<b>Weaknesses-opportunities strategies</b>	<b>Estrategias de debilidades-amenazas</b>
(W1) 20th century public spaces lack coercive protection. (W2) Public space programs not coordinated or not well implemented (W3) There is no continuity of authorities for public space management.	(W2-O2-O3) Developing better coordinated programs to adapt public spaces. (W2/O3) Involving universities to produce adaptation ideas for public spaces when facing disasters. (W2/O2) Coordinating actions among local councils.	(W2/T1) Strengthen and better coordinate the protection of public space so it is not privatized. (W3-T3) An entity that is independent from political periods. (W3/T1-T3) Building up public opinion to defend public spaces and avoid indiscriminate verticalization.

## STRENGTHS<sup>5</sup>

5 Strength is understood as the internal positive elements that represent resources and circumstances that favor the use and appropriation of public space in case of emergency.

6 Strength 1 (S1). A proven role of public spaces in the historic and modern city as a resource during emergencies.

7 Strength 2 (S2) Heritage protection of public spaces belonging to the historical city.

8 Strength 3 (S3) Players and programs for public space management.

In 1985 and 2017, public spaces played a key role, both in the emergency phase and during reconstruction [Figure 1]. As an example, thirty-four public spaces were identified that were used immediately after the earthquake, where more than ten different activities took place in squares, gardens, roundabouts, sidewalks and alleyways, to mention a few. Among these there were improvised camps; the organization of search and rescue tasks; the expression of disaster-related social demands; food preparation; medical and psychological attention posts; donation distribution and collection centers; information centers to look for survivors; identification of casualties and memorial sites after the disaster (Montejano & Moreno, 2016, pp. 104-113). It is worth mentioning that more than one activity took place in these spaces and most of them sprang up spontaneously both in a public and institutional sphere. Squares have been examples with the highest capacity for adapting to the different uses, with up to eight different uses [Figure 2], although there are other spaces that, due to their particular aspects, have provided other very specific roles, like metro tunnels and stations to move under collapsed areas.<sup>6</sup>

Between 1985 and 2017, one of the factors that allowed preserving many of these spaces was their heritage, where the public space has specific historical values and features. In this case, there are opportunities for their conservation or regeneration like the INAH (National Anthropology and History Institute), the INBA (National Institute of Fine Arts), the Historical Center Authority, or UNESCO.

As a result, the public spaces considered as heritage sites maintain their physical and constructive features, allowing them to be used in emergencies for different purposes. The strengths which heritage public spaces have, refer to their size, infrastructure, location and urban property, which together are larger than modern public spaces [Figure 3]. In terms of the organization of the Historic Hub of Mexico City, there is a decentralized entity called the Historic Center Authority, created in 2007, that proposes public integration policies and promotes the renovation of public spaces located in this large historic space.<sup>7</sup>

Apart from the heritage features these spaces have, there have been different players and programs that have fought for their conservation and upkeep, like the Urban Development and Housing Secretary (SEDUVI), the now extinct Public Space Authority (AEP) or the different mayors. AEP was created in 2008 and operated through to 2018 in several projects that also involved the private sector. Among the recently created public space projects are projects like the "Under Bridges" or pocket parks, ranging between 100 and 400 meters squared in size, which refer to newly created spaces in the leftover areas of the city. On the other hand, the public space improvement and rehabilitation projects appear, which have improved spaces with inclusive design, the retrofitting of heritage spaces, the pedestrianization and semi-pedestrianization of streets, lighting programs and monument remodeling. Undoubtedly, one of these players is civil society, as one of the most important human resources to implement these actions in coordination with the authorities.<sup>8</sup>

## WEAKNESSES<sup>9</sup>

9 Weakness is understood as the absence or lack of internal resources and negative circumstances that impede the use and appropriation of the public space in case of emergency.

10 Weakness 1 (W1) 20<sup>th</sup> century public spaces lack coercive protection.

While public spaces built up until 1900 are protected by the aforementioned authorities, the spaces built after that date lack a clear protection and upkeep (under the administration of the National Institute of Fine Arts, in charge of preserving and safeguarding urban architectonic heritage built after 1900, while the National Institute of Anthropology and History is in charge of heritage from before that date). These spaces are at risk of being modified or even partially or completely privatized due to the lack of orchestration and financial resources. An example is Parque Mexico (Mexico Park), used in 1985 and 2017 as a collection point for foodstuff and for organizing rescue activities [Figure 4], where some recent public space projects have been using space for bicycle racks with fixed elements that limit or block emerging mobility.<sup>10</sup>

Despite the existence of different programs for public space upkeep in

11 The Under Bridges program was another of the Federal District Government's programs to recover abandoned public spaces to turn them into safe and well-lit sites to be used by citizens. Their main goal was offering citizens alternatives for mobility and healthy recreation, social and family gathering according to the definition by the Urban Development and Housing Secretary (SEDUVI).

12 Weakness-2 (W2) Public space programs not coordinated or not well implemented.

13 Weakness 3 (D3)- There is no continuity of authorities for public space management.

Mexico City, much of the land used during disasters is not considered in these programs. As a result, these spaces are left out of improvement or adaptation works. Hence, it is seen that there is no overlapping between planning tools that are potentially useful during disasters and specific needs that other improvement measures offer. For example, lighting programs do not coincide with spaces used for temporary shelters, water supply programs do not consider water distribution for emergencies, etc. In the case of the "Under Bridges"<sup>11</sup> program, their uses are not considered and these spaces have been privatized, to a great extent.<sup>12</sup>

When facing this situation, a great weakness is the fact that authorities change every six years and there is no continuity for proposed or ongoing projects implemented by previous departments. An example is the Public Space Authority (AEP), replaced by the Direction for Urban Cultural Heritage and Public Space, which combined public spaces and heritage matters. This is a result of new restrictions applied to the official budget, that also creates the need for an internal reorganization of departments, meaning a weak and deficient response is given to emerging needs; in other words, they have to start their plans and the distribution of responsibilities over. In addition, the budget is not enough for projects or clear directives are lacking. An example of this is the now defunct Mexico City Resilience Agency, which proposed projects combining mobility and disasters or the adaptation of public spaces for disasters, but now it no longer exists.<sup>13</sup>

## OPPORTUNITIES<sup>14</sup>

14 An opportunity is understood as the external and positive circumstances that favor the use and appropriation of public space during emergencies.

15 Decree issued in the Official Gazette of the Federation on October 21<sup>st</sup> 1985.

16 Opportunity 1 (O1)- Creation of new public spaces post-disaster.

17 Opportunity-2 (O2). Deindustrialization as an opportunity to create new public spaces.

18 For example, the Institutional Resilience and Safety Committee of the National Polytechnical Institute (IPN) and the Internal Emergency and Civil Protection Committee of the IberoAmerican University, or the Internal Civil Protection Committee of the National Autonomous University of Mexico (UNAM).

19 Opportunity-3 (O3) Universities as a human resource to adapt public spaces when facing disasters.

In 1985, as a result of different buildings collapsing or requiring demolition, new public spaces were created, generally in the same site the buildings had stood on. This was in part due to the "Federal District's urban property expropriation decree"<sup>15</sup> which was created with the purpose of expropriating damaged properties to rebuild housing in the same place, alongside the "urban regeneration and improvement of expropriated properties" (Magadan, 1987). Some of these spaces acquired a meaning of commemoration and sculptures or elements related to the events were placed there. Other spaces were simply left as green areas. One of the most meaningful spaces is Solidarity Square [Figure 5], the site where the famous Regis Hotel and the Navy Secretary building collapsed.<sup>16</sup>

An important question is whether opportunities currently exist to create new public spaces related to new commercial conditions, as the economy's opening up with the 1988 Free Trade Agreement fostered a change in Mexico, regarding manufacturing industry's activities, leading to a deindustrialization process. Industries moved to the outskirts of the city and even to other areas (Asuad, 2010), freeing up large spaces. An important unpopulated centrality was created alongside this, in part due to the 1985 earthquake and in part with the industry moving into the outskirts, a process which has not yet finished. With this movement, the reconfiguration of the city changed, especially due to land opportunities in the city.<sup>17</sup>

For 2017, another one of the players involved from the emergency itself, was the universities. After the 2017 earthquake, some committees have been set up within universities<sup>18</sup> to identify and mitigate risks in each institution. As an additional opportunity, authorities are seeking an integration of these university committees and the Government's inclusion of universities in reconstruction and building code updating plans is very important too. Universities have also created emergency teams to offer humanitarian help based on the strengths of different disciplines to promote resilience, for example: specialized groups to assess building structures, analysts to rebuild rural housing or teams to offer post-disaster psychological help.<sup>19</sup>



## THREATS<sup>20</sup>

20 A threat is understood as adverse external and negative situations which have a probability of occurring, and that limit or impede taking advantage of, using and appropriating public spaces in case of emergency.

21 Threat-1 (T1) Increase in the privatization of public space used during disasters.

22 Threat-2 (T2) New conflicts regarding the public spaces that the disaster left behind.

23 Threat-3 (T3). Indiscriminate verticalization.

While the 1985 earthquake represented an opportunity to create new public spaces, on the other extreme were those public spaces that disappeared or were privatized. One of those spaces was the Delta Baseball Stadium, which belonged to the Mexican Social Security Institute (IMSS), and as an institutional public space it was the place where the victim's bodies were sent during the 1985 earthquake, given that the hospitals, cemeteries and funeral homes were overwhelmed (Monsiváis, 2012 p 72). In spite of its historical and social value as a stadium space, the sale of the stadium was announced in 1999 and the last game played at this historic stadium was in 2000. Later, several companies bought it to build a mall in its place (Excelsior, 2014).<sup>21</sup>

In other cases, the destiny of spaces is uncertain, as new conflicts build up over the new spaces left behind by the disaster. This is the case of 286 Álvaro Obregón, an old office building that collapsed in September 2017, killing 49 people. After the earthquake, the site was expropriated and Mexico City's government organized an architecture contest to propose a monument that included an educational museum and a memorial. However, the competition met opposition from victims whose homes were destroyed by the disaster, who expressed that the budget for projects like this should be used to rebuild homes. Currently, no solution has been found.<sup>22</sup>

Urban policies that have induced indiscriminate verticalization constitute the last threat, as towards the start of the 21st century, urban public policy to re-densify the city with social housing was considered, like Band 2 (norm suspended in 2007) or Norm 26 (suspended in 2013), to take advantage of underused infrastructure and services and build housing for the most vulnerable (Federal District Government, 2000). However, property speculation was rife in these processes, creating new areas with densities above the norms, resulting in a very violent transformation of the city's landscape, as where there had been homes with 6 to 8 people, now there are 8 to 10 floor buildings for many families with little or no public space for these densities, making the city more vulnerable during disasters, as the inhabitant/public space ratio has drastically changed when facing evacuation needs.<sup>23</sup>

## SWOT ANALYSIS BASED STRATEGIES

24 Like the "Pocket Public Parks" program, the "Under bridge" program, "Friendship ties" program, "Street pedestrianization and semi-pedestrianization" program, "Universal access" program, among others. With the common goal of rehabilitating public space for the good of the citizenry, as well as the individual aspects of the programs.

25 (W2 / O3). Involving universities to produce adaptation ideas for public spaces in disasters.

26 (W2 / O2-O3). Developing better coordinated programs to adapt public spaces.

27 (S1-S3 / O3). Involving universities, government and civil society to adapt public spaces with regard to historic and modern monuments.

28 (S2-A3). Reinforcing directives for heritage protection.

29 (W2 / A1). Strengthen and better coordinate the protection of public space so it is not privatized.

Today there are many programs<sup>24</sup> in Mexico City for the recovery, preservation and improvement of public spaces. However, even in a risk area, these programs are not coordinated for this goal. This opens possibilities for a better coordination and adaptation of these spaces. This could be possible and feasible with a vision integrating the essential needs, for example: choosing the type of urban property better (thinking about emerging uses), improving accessibility (for emergencies, not just daily needs), improving communications, suitable flora, trees to create shade, strategically designed water facilities, emergency lighting, etc. The participation of architecture schools would be very useful in producing ideas for this adaptation [Figure 6].<sup>25</sup> In other words, an integration of infrastructure aims, starting with new ideas, continues to be very important on the road to adaptation.<sup>26</sup>

The authorities in charge of protecting heritage could, among the actions proposed, strengthen guidelines to evaluate densification projects against the existing capacity of heritage public spaces.<sup>27</sup> Namely, being more aware of the density/area ratio. An example in Mexico City is the aforementioned Mexico Park, which obviously has not increased its surface area, but the surrounding area has been densified in recent decades as a result of vertical urban growth.<sup>28</sup> In this sense, it will be fundamental to respect and adopt international indicators like those of the World Health Organization regarding the number of square meters a human needs to live in a city (WHO indicates between 11 and 13 square meters per inhabitant, while Mexico City currently has less than five).<sup>29</sup>

For already privatized public spaces, land use could be regulated, but with the goal of having an effect on the kind of business that will be used during

a disaster, so that the business can support emergency plans. For example, in the under bridge areas located around the city's inner ring, spaces have been rented out for food-based businesses, design stores and car forecourts; however, an agreement could be reached so that these companies, in a disaster, can offer the population their services or products; free food in case of emergency, construction tools to help in victim rescue (hard hats, industrial gloves, shovels and pick axes), or the large surface area businesses like bars could become temporary shelters. In 2017, several companies assumed this responsibility, but a more organized strategy could be possible.<sup>30</sup>

As for deindustrialization, new norms can be proposed to indicate a minimum amount of public space for large scale urban projects, particularly in areas where this process is still ongoing and where there is still an opportunity to do so. In addition, a consulting group, comprising experts in planning, geology, geography, public policy and economics, could find a balance between urban development and safety<sup>31</sup> together with the property developers. In the already deindustrialized areas, emerging action projects can be implemented with the goal of adapting spaces for disasters or expropriating land in deindustrialized areas to create public spaces.<sup>32</sup>

Finally, to avoid the lack of continuity in these projects, it would be key to promote the creation of a government entity with voice and vote in urban and transformation projects that affect the verticalization and disappearance of public and potentially public space, namely the spaces deindustrialization is leaving behind, as well as the use of institutional public spaces, like sports centers or mayoral squares. This entity should exist in parallel or independent from political changes or public administration periods<sup>33</sup> and could cover different jurisdictions.<sup>34</sup> These decisions must be made together with civil society,<sup>35</sup> especially those concerning new uses for empty lots caused by disasters.<sup>36</sup>

Threats and weaknesses were identified, but so were strengths and opportunities at all levels and in all circumstances. More investment is required to develop these strategies and make prospective studies that support the creation of awareness of the risks involved in living in a territory that, above all, is vulnerable to seismic threats. We are referring to both authorities and the population in general, as well as to the companies and other players involved in the construction and transformation of the city, as although the earthquake's effects can be disastrous, these can provide opportunities to make a city less vulnerable, since we all know these disasters will keep happening. In these processes, it is important to identify the groups that have already been organized at a neighborhood scale, to offer them more tools and knowledge so that they can better organize for their defense and voice their rights in the public institutions responsible for authorizing urban projects and disaster risk reduction projects.

30 (S3-T1) Regulation of the use of already privatized public spaces as part of the recovery programs.

31 (S3 / O3). Preparing public spaces for disasters in more specific areas.

32 (F3 / O2). Defining projects in deindustrialized areas considering the seismic nature of the area.

33 (W3-T3). An entity that is independent from political periods.

34 (W2 / O2). Coordinating actions among local councils.

35 (W3 / T1-T3). Building up public opinion to defend public spaces and avoid indiscriminate verticalization.

36 (S3-T2). Establishing a more organized dialog between civil society and the authorities.

## CONCLUSIONS

Many threats and weaknesses have been identified, but at the same time, there are many strengths and opportunities at all levels and under all circumstances, like current technological development, which should be used more effectively. More investment is required for the development of these strategies and making prospective studies that would support the creation of awareness to enact the identified strategies. This would require a general awareness of the risks involved in living in a territory that is vulnerable to seismic and hydrometeorological (not considered here) threats. We refer to both authorities and the population in general, as well as the companies and other players involved in the construction and transformation of the city.

In spite of the effects a disaster can bring, it can provide opportunities to make a city less vulnerable to future disasters, because they will continue to happen. There are examples in some parts of the world that can be learned from, but there are other types of threats and limitations that are not necessarily natural in origin. We refer to those which could be related with cultural and socioeconomic aspects, aspects that limit the identification of opportunities and, therefore, complicate thinking about and visualizing opportunities and mitigation actions. Finally, based on the trends and strategies identified, these results can be used to identify probable scenarios if we do not act on time, or desirable ones if we do.

There are examples in some parts of the world that can be learned from, regarding better disaster risk management. Countries like Japan have been adapting cities to face disasters as part of the reconstruction process, for example, the recovery and adaptation of large urban parks prepared to act as emergency shelters for at least 72 hours. An example of this is the Minato No Mori Park, a large-scale project located in Kobe, Japan, prepared to receive disaster victims and that has pre-installed sewer systems, lighting, solar cells, drinking water and green areas with fruit and vegetables to support the survival of inhabitants. The park was retrofitted after the Great Hanshin Earthquake in 1995 in Kobe on an old industrial area. There are other neighborhood-scale examples like the Matsumoto neighborhood in Kobe, which has a series of pocket parks which local residents, with government support, have been adapting to be used as a resource in the disaster aftermath. These pocket parks have information boards, evacuation routes, a clock, a shed with some tools like picks and shovels, equipment, canopies which are unrolled and act as walls for temporary shelters, water pumps, and lighting to survive the first three days before external help arrives.

But there are also other kinds of threats and limitations that are not necessarily natural in origin. We refer to those which may be related to cultural and socioeconomic aspects, which limit the identification of opportunities and, therefore, complicate thinking about and visualizing opportunities and mitigation actions. Based on the trends and strategies identified, these results can be used to define probable scenarios, if we do not act on time, or desirable and possible scenarios if the corresponding actions are created. Only in this way will more inhabitable and safer public spaces be built for the future.