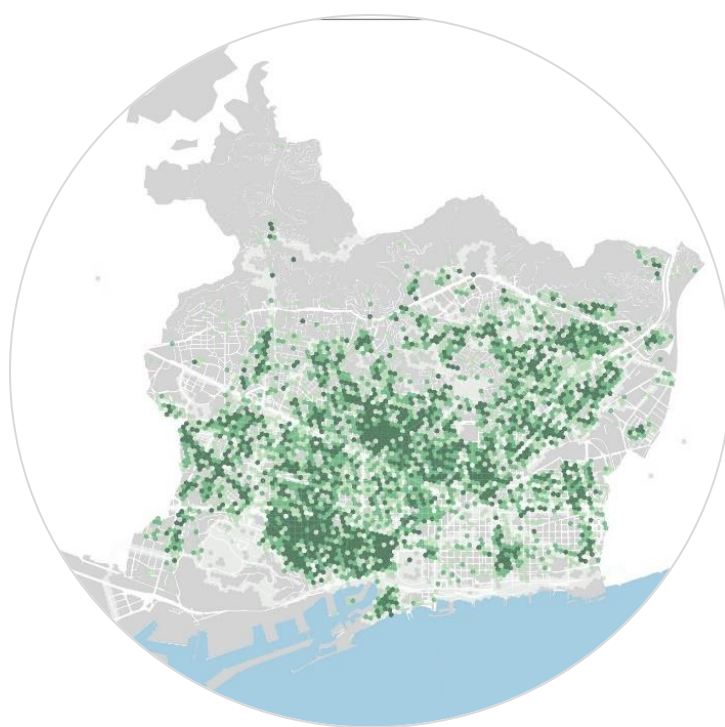


TERRITORIALISATION OF RISKS

RESILIENCE PLAN DIAGNOSIS



What impact do programmed activities held in public space have on relationships between the people living in the neighbourhood?

November 2020



TEXT



**Ajuntament
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Department of Urban Resilience
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Contents

Introduction.....	4
1. What? The question	5
2. Why? The reason.....	5
3. How? Data and methodology.....	6
4. Activity density map.....	8
5. Map indicating potential for social cohesion.....	9
6. Conclusions.....	11
7. Appendices	13
7.1 Activity density map	13
7.2 Map of social cohesion potential	14

Introduction

Global development trends are leading to populations being largely concentrated in urban areas. According to United Nations data, today more than 54% of the world's population is concentrated in cities, and this figure is expected to rise to 68%, or 6.3 billion people, by 2050. Consequently, cities play, and will increasingly play, a key role in human development, in fostering living conditions that guarantee protection, health, equality, equal opportunities and well-being for their inhabitants.

This is the context in which applying the concept of resilience to citizens and urban systems makes sense. Urban resilience is understood as the capacity of a city to prevent, or when faced with unavoidable situations, to minimise, the impact of the natural and anthropic risks it is exposed to, whether acute shocks or chronic stresses, and to recover in the shortest possible time in order to maintain essential functions.

The main shocks that Barcelona is exposed to derive from the effects that climate change may have on the city. On the other hand, most of the stresses that the city is exposed to come from the social, environmental and economic domains.

Thus, within the framework of the development of Barcelona's resilience plan, a study was carried out to identify and define the risks that could affect the city's public spaces.

First of all, with the aim of defining a list of the key risks that threaten Barcelona's public space, a working session was organised in March 2019 with around twenty municipal representatives from the different departments involved in the design, management and maintenance of public space, as well as professionals involved in ensuring peaceful coexistence and the provision of social services in the city. At this meeting, there was a general consensus on the concerns and risks that were unanimously identified as the most critical: homelessness and air pollution. In second place, noise pollution, the heat island effect, a lack of green spaces, heavy rainfall, drought, security, tourism pressure and traffic congestion were of concern. Based on this classification, the next step was to restructure and refine the resulting table of risks by incorporating the comments received, and so identify a list of questions on how each risk might affect the city's public space.

Finally, based on the questions posed, and focusing the analysis on the most vulnerable groups, a risk assessment procedure was developed in order to map the points at which the places in the city with the highest levels of risk intersect with the areas that the section(s) of the population vulnerable to a particular risk are most likely to use or to live. For those risks that it was possible to map, the information used had in some cases already been studied in other contexts, meaning that it was only necessary to add the perspective of the impact on vulnerable groups. In other cases, work also had to be done on data development to understand the impact of a particular risk.

This document is a compilation of the maps drawn up for the analysis stage of the Resilience Strategy with regard to risks affecting public space, with the aim of gaining a full overview of the city's vulnerabilities differentiated by location, thus allowing the identification of priority measures by area, in response to the identification of one particular risk, or the overlapping of several.

Each risk map is presented in the first part of this work together with the methodological details of the data used. The second section includes the conclusions reached and explains the measures that the City Council is currently developing, or the possible lines of work to be pursued to reduce the risk and mitigate the impact.

1. What? The question

What impact do programmed activities held in public space have on relationships between the people living in the neighbourhood?

In this set of maps, the umbrella question is followed by two further questions that help us to narrow down the answer in the form of two maps:

Map A: **Which public spaces in the city are subject to the highest density of activity?**

Map B: **Which parts of the city have the greatest potential to generate social cohesion among residents based on the activities carried out there?**

2. Why? The reason

The risks studied in this case were identified in the participatory session held with the team of municipal staff mentioned in the introduction to this document. The aim was to understand the barriers and opportunities that characterise a public space when it comes to adequately fulfilling its more social and relational role, through the types of programmed activities held within it. Despite a lack of studies focusing on the issue, and the added problem that this information has never before been collected by the City Council in this way, what follows is an exercise, a first attempt at territorialising the activities organised in public space and studying their potential to build a sense of community.

The concerns of those attending the working session with regard to the large number of programmed activities held in public space were mainly focused on the issue of overcrowding, and on the risk of the loss of a sense of community in the neighbourhood. The question

concerning the point at which we decide that there are too many programmed activities was raised and the fact that if these activities do not really respond to the needs and demands of local residents, the social function of public spaces will start to decline. An aim for the future could be to establish intensive use limits according to the type of activity being organised. A lot is said about the benefits of the public space as a generator of social cohesion, thanks to its nature as a meeting space, but how can this be measured? In Barcelona, an especially dense city, it is particularly important for public space to fulfil its function of providing this kind of service.

Thus, in this chapter two maps are presented, each responding to the questions posed at the beginning. Both are based on the same layer of information, that is the programmed activities held in public space, and each presents a different reading of that information. One calculates the volume of activities taking place in public space, while the other assesses the ability of those activities to foster social cohesion among the residents of the neighbourhood where the activity is held.

3. How? Data and methodology

To provide the best possible answer to the questions posed in this case, all the official information available was collected in order to obtain an approximation of the risks involved. The different layers of information used to draw up the two maps discussed in this chapter are shown below.

- Calendar of Events in the City (2018). Source: Barcelona City Council.

With regard to the programme of scheduled activities, the data came from two calendars, which include both the most popular events and those activities of a more local nature that take place in public space. The Barcelona Events Calendar is compiled using the bi-monthly report published by the Data Office. This includes the events which:

- attract 5,000 or more people, most of whom gather in public space
- smaller events that could affect mobility in the city
- yearly festivals celebrated in the different districts of the city
- and cruise ships that visit the city carrying an expected 9,000-10,000 passengers per day.
- Central Public Space Operations Calendar (2018). Source: Barcelona City Council.

This calendar is prepared on a weekly basis, and is based on the Official Calendar of Activities, complementing it by including all the smaller, neighbourhood activities that take place in the

street, and in public spaces. It includes the time, type of activity and programme, but unlike the other calendar there is no forecast of attendance.

- Neighbourhood and parents' associations (2018). Source: Generalitat de Catalunya.

Data corresponding to these types of associations was collected through the Generalitat de Catalunya's open data service. The data used for this study excluded neighbourhood associations of a commercial nature. All parents' associations were included.

- Local shops (2019). Source: Open Data BCN.

This data was drawn from the census of premises in the city of Barcelona. The census identifies all ground floor premises that are used for business purposes, or that are not currently in use. In terms of local shops, daily commerce categories were used, both for food and non-food establishments.

- Street markets and fairs (2019). Source: Barcelona City Council

The data on the main fairs and markets was collected from the open data search engine of the Barcelona City Council Trade Directory. It includes both the location of the market or fair, and the frequency with which it is held.)

In order to give the data a greater intentionality, they were visualised and presented in a clearer way. Hexagonal mesh grids were generated that allow the visualisation of territorial units to be combined, but with a certain margin in terms of representation. Given the city scale of the map, it provides us with an understanding of the overall context without needing to define the variable in too much detail.

4. Activity density map

The activity (or event) density map refers to the index of activities in public space, and illustrates the intensity of programmed activities that take place in public space. Based on the available data, it was conceptualised as a snapshot of the density of events, comparing intensity of use in different public spaces in the city, a reflection of the sum of the activities taking place in a single space as well as itinerant ones.

Based on the work carried out for this study, the proposal is, in the future, to be able to work with an estimation of the number of people attending the activities and define possible thresholds that can be used to evaluate the overcrowding of public space.

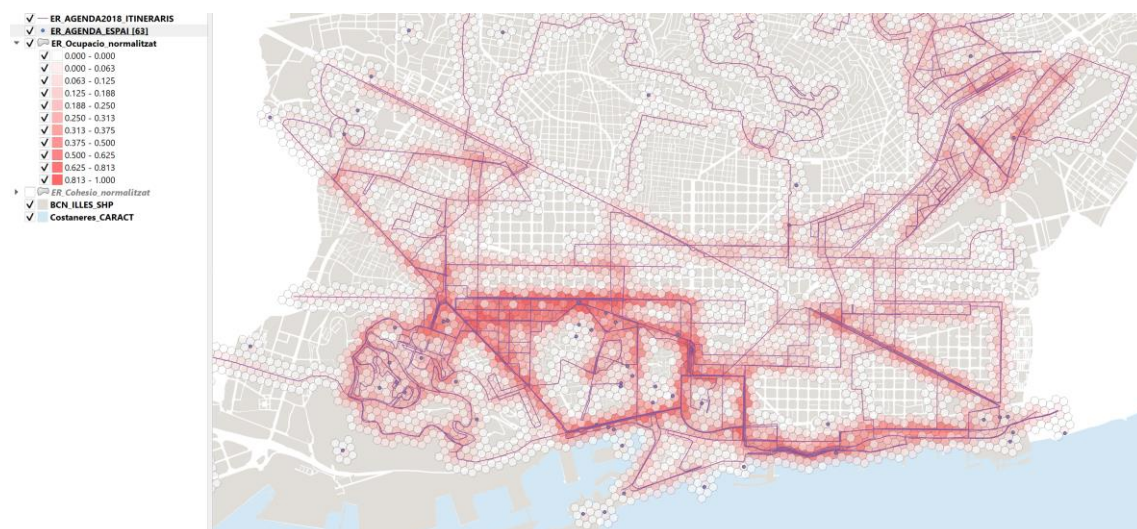
The processing and visualisation of data in this case is simply a calculation of the density of the activities, compiled by combining the information on events available in the two calendars. In order to be able to combine information on activities taking place at concrete locations with itinerant events, work was done to unify the databases.

The methodology used consisted of calculating which activities would take place in proximity to each of the cells in a 100 m wide hexagonal grid projected over the whole city. This created a “heat map” of activity density.

In order to have an approximate idea of the impact of events on public space, we plotted a radius of 100 m in terms of direct impact, and of 200 m with an impact coefficient of 50%. These criteria were chosen with the urban unit of the 100-150 m distance between city blocks in the Eixample and most of Barcelona in mind.

The events in each hexagonal section are added together to generate a public space usage density map.

Figure 1. Working map showing the density of events in public space



Of the more than 2,000 activities that took place in 2018 analysed here, 762 different venues were identified, which suggests that the activities are reasonably spread out. The risk is that a small number of spaces (2%), especially in the city centre, see a very high density of activities each week. For example, an activity is organised at least every other day on Plaça de Sant Jaume, and at least every three days on Plaça de Catalunya. As for the time at which these activities take place, 44% happen in the morning, and 33% in the evening. The neighbourhoods at the highest risk of suffering from an excess of activity in their public spaces are Sant Antoni, El Barri Gòtic, Vila de Gràcia and Sant Andreu, in that order.

5. Map indicating potential for social cohesion

This second map aims to interpret variation in the potential for social cohesion in an area, depending on the activities that are organised there. Based on this premise, we worked using the information gathered from the two calendars that were used for the previous map, but this time we also evaluated the different spaces with the potential to create positive conditions for fostering social relations, creating a cohesion coefficient that will be explained below.

In an effort to complement the information provided by event calendars, other data on elements that could potentially contribute to improving social cohesion were also included in the analysis. These elements include neighbourhood and parents' associations, local shops, and street markets and fairs.

The data display criteria were based on a cohesion coefficient assigned to each activity based on the following criteria:

Table 1: Assessment criteria for each value of the cohesion coefficient

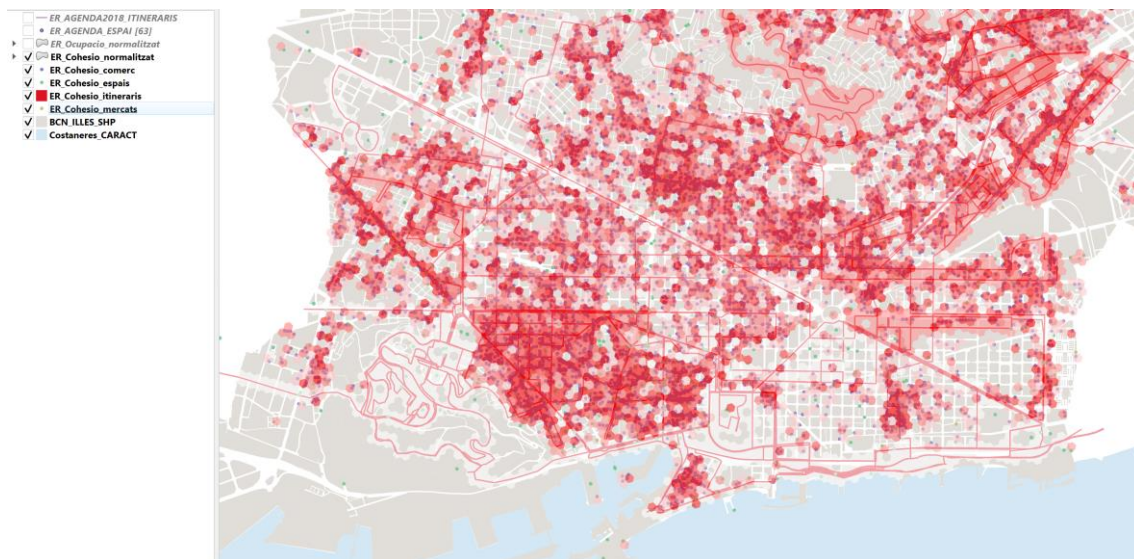
VALUE OF COHESION COEFFICIENT	TYPE OF ACTIVITIES
0	Sporadic or annual activities organised in a specific space, without there being any relationship with the space itself or with local residents (e.g. protests, marathons or large, city-wide events).
2	Non-food markets and fairs.
4	Sporadic or annual activities which, despite being large-scale, are activities in which local residents play an important role, in terms of both organisation and participation. This category would include the Festa Major in Gràcia, for example.
5	Periodic neighbourhood food markets and local shops.
6	Small sporadic or annual activities, mainly neighbourhood-based, often organised by civic entities in the neighbourhood themselves, or by the City Council to energise the neighbourhood. This category includes anything from neighbourhood festivals to family workshops, activities for elderly people and concerts for young people.
8	The highest coefficient has been established for the headquarters of parents' associations and neighbourhood associations. In general, this type of association is considered the most committed to generating social cohesion in neighbourhoods. Therefore, although these are not specific activities in the public space, and the headquarters of these associations do not necessarily represent the place where the activities are organised, this has been deemed an important enough phenomenon to be included in the study.

The methodology used to calculate the cohesion map was similar to that used for occupancy in terms of algorithms.

It consisted in identifying which activities, spaces or shops tended to foster social cohesion, based on the criteria and scores on the previous table. Those values were then added to the hexagonal cell where the activity or space is located, adding a 50% cohesion value to those activities that are found within a distance of 100 m. This created a "heat map" of activity density.

The sum of the cohesion values assigned to each space or activity, in each hexagonal section, generates a density map indicating cohesion potential in the public space.

Figure 2. Working map showing the potential for social cohesion of events held in public space



Out of a high number of activities, the location distribution by activity type is:

- Highest number of local shops: La Vila de Gràcia, Dreta de l'Eixample, El Raval, Sagrada Família and Antiga Esquerra de l'Eixample.
- Highest number of street markets and fairs: El Raval, Les Corts, Sant Pere i Santa Caterina and El Barri Gòtic.
- Highest number of activities with potential for social cohesion: La Vila de Gràcia, La Dreta de l'Eixample, Sant Andreu, Sant Gervasi - la Bonanova and Les Corts.

Adding together all the parameters considered, the neighbourhoods with the most potential to generate social cohesion in their public spaces are Vila de Gràcia, La Dreta de l'Eixample, Sant Andreu, Sant Gervasi – la Bonanova and Les Corts.

6. Conclusions

The comparison between the two maps is a very interesting one in this case. If we overlay the areas with the highest concentrations of activity with the areas with cohesion potential, we find that one is almost the inverse of the other. This comparison suggests that the activities programmed in these 'overcrowded' spaces do not contribute to the enrichment of the social fabric of the area. For instance, this occurs across most of the coastal part of the district of Sant Martí, and on Diagonal between Glòries and El Fòrum in the same district. In Eixample, the same thing happens on Gran Via, between Passeig de Gràcia and Plaça d'Espanya, and in Ciutat Vella around the Ciutadella Park, or, more specifically, on Passeig de Pujades, Passeig de Lluís Companys and Ronda de Sant Pere. In the district of Sants, the same phenomenon occurs on Avinguda Reina Maria Cristina and the surrounding area.

It is important to remember that these maps require a broad interpretation, and that risks must be contextualised globally. They have been generated on a city-wide scale, and although a degree of territorial detail was sought, they are an interpretation based on approximations and a specific study will be required on the selected areas of activity.

Vulnerability maps can guide priority action in the city in territorial terms. In this case, they give us an initial overview of the activity that takes place in the city's public space. The first map in particular indicates that Barcelona is a city with a host of activities organised across its territory, and that those activities are concentrated to a certain extent in specific areas, often corresponding to the parts of the city under greater pressure from tourism.

To this end, Barcelona City Council and its Tourism Department have long been working to improve the management of busy spaces, which largely coincide with the spaces identified in the interpretation of both maps. The city is leading projects to manage spaces with a large tourist presence, such as CityFlow, part of the European project KIC-Mobility. The aim is to develop a support system to manage crowds and to study the redistribution of flows around the Sagrada Família, or the closure of Plaça de Sant Felip Neri during school hours so that the local school can use it again.

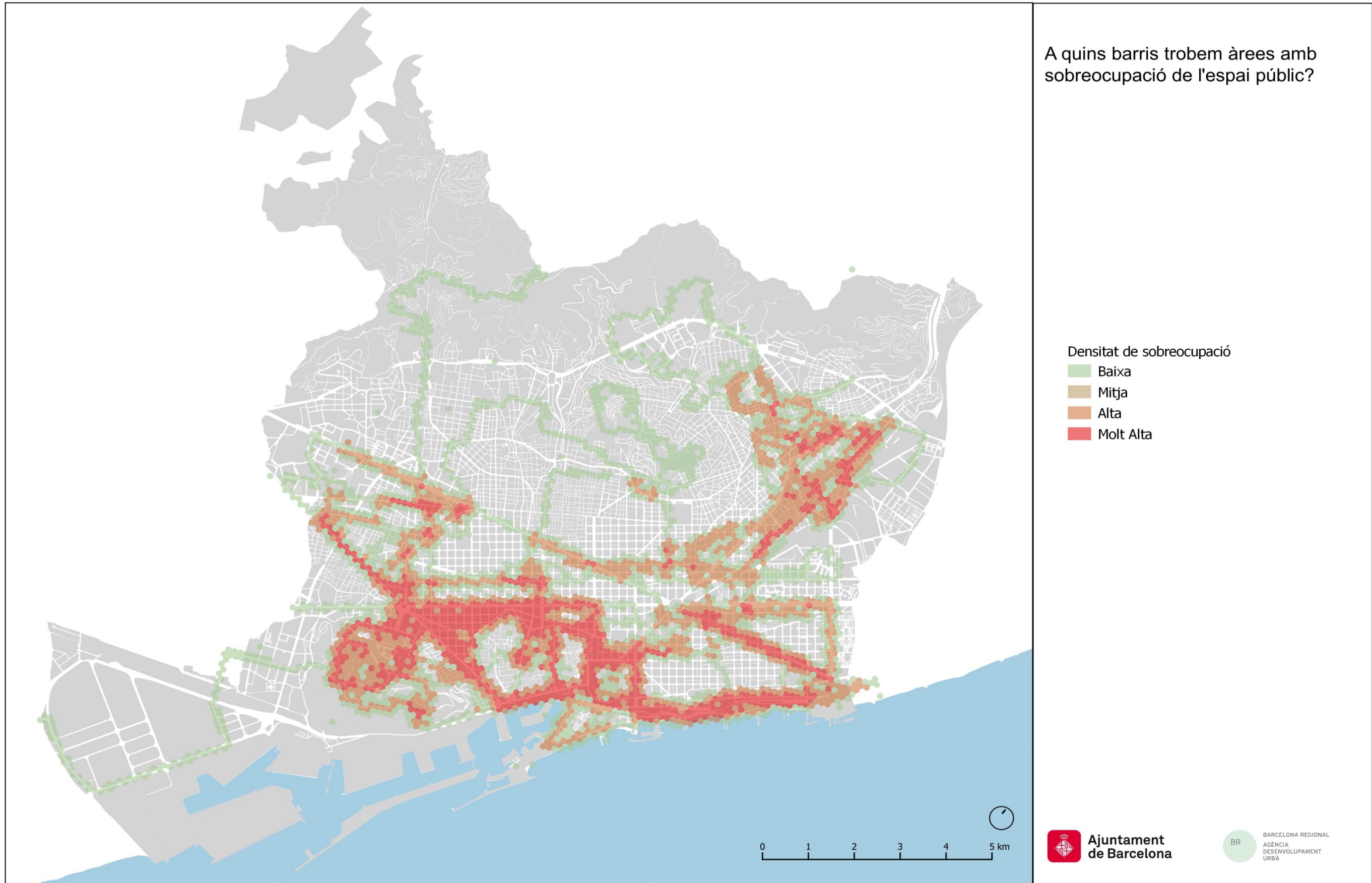
The health crisis triggered by the outbreak of Covid-19, and some of the measures aimed at preventing or containing the spread of infection, have penalised contact, social relations and the use of spaces and systems designed to be shared. It has also changed the dynamics of programmed activities, the presence of tourists has been drastically reduced, and there is no clear indication as to how the situation will evolve.

In order to manage the pandemic, the use of public space, and also (temporarily) one of its main functions, that is as a space for relating to others, a space that generates a sense of community and fosters social cohesion, have been limited or modified. Nevertheless, it should be remembered that this is precisely one of its functions, and that the management of the activities and the programmatic side of projects aimed at transforming public space - which are often poorly developed and monitored; rarely are they followed up in order to assess the changes of use or the dynamics that they involve or create - are tools that make it possible to boost this capacity.

The Barcelona Resilience Programme provides an opportunity to explore lines of work in this area, focused on the more social and programmatic aspects of the design and use of public space. The development of studies or projects - such as the one carried out in collaboration with the UIC's *Master's Degree in City Resilience Design and Management* - that allow an in-depth study of the real uses and experiences of those who use certain public spaces is, for example, one of the lines of work that may be promoted in order to identify initiatives that maximise the social function of public space, as a place to share and to interact with others, a place that generates a community spirit that fosters and sustains a more welcoming, caring, inclusive, and therefore resilient, city.

7. Appendices

7.1 Activity density map



7.2 Map of social cohesion potential

