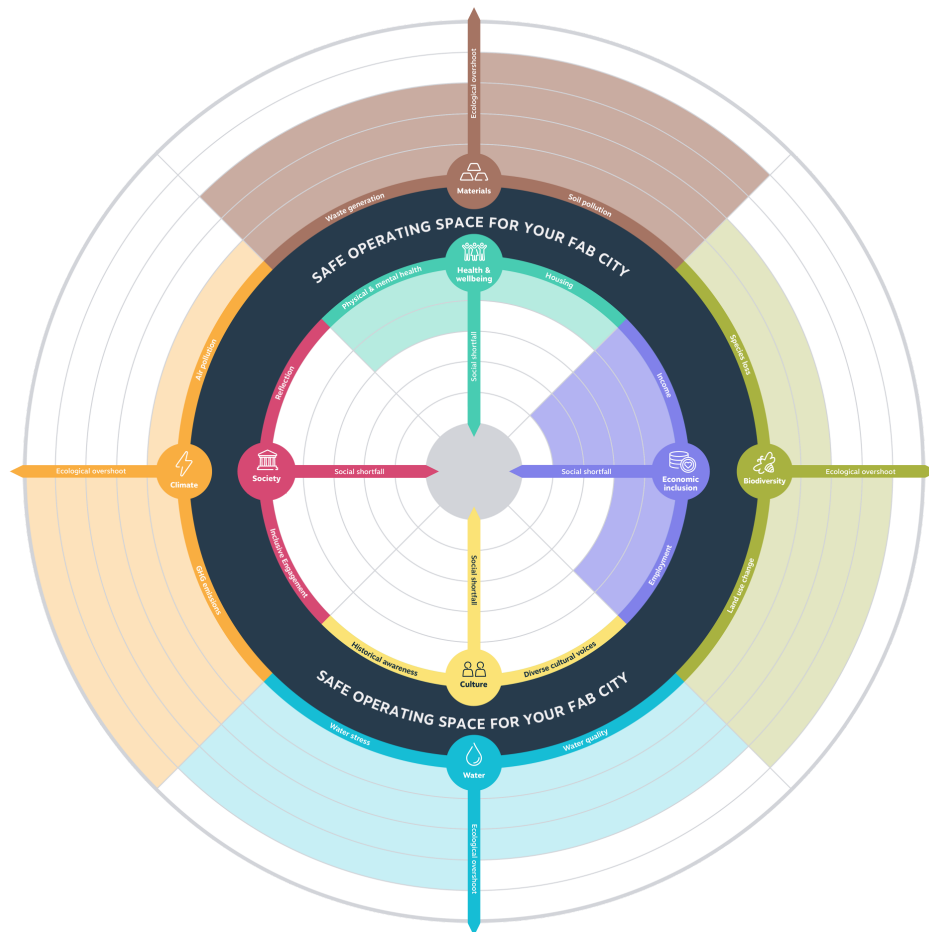


# BECOME A CONTEXT DETECTIVE!

A workshop guide for Fab Cities to map urban  
ecosystems and their challenges



## About this workshop

With this workshop guide, you will be able to get a better understanding of the social, cultural, ecological and economic context of your city or neighbourhood.

We have developed this workshop as a MIRO Board online template, too. If you prefer to work on your urban ecosystem mapping online, find the template [here](#). For those of you wanting to run this workshop in person, the other materials you need are part of the workshop kit you downloaded from the Cartography (found [here](#))



## Using the doughnut model to map the urban context

You will be using the Doughnut Economy framework as a compass to structure your urban ecosystems mapping process.

The Doughnut framework was brought to life by Kate Raworth in 2012. It is an extension of the planetary boundaries which mark our Earth's "limits" across several dimensions to stay within a safe space for ecosystems to operate. In addition to this **ecological ceiling**, the Doughnut adds the idea of a **social foundation**. As communities, we need to find this fine balance between meeting the social needs without overshooting the planet's ecological limits. During this workshop, you will learn how to use the Doughnut to identify key areas that are locally bringing your city or neighborhood out of balance.

Why? Because Fab Cities (or any other city) wanting to be locally productive must do so within the [safe operating space](#) of regional and global planetary boundaries. This is the area where a regenerative and distributive economy for humans is possible!

Have fun!

## Overview

Parts of this workshop	What is it about?	Resources you need
<b>Step 1 - Getting Started</b>	Set the scope and boundaries for your urban mapping workshop	<ul style="list-style-type: none"> <li>Printed map of your city</li> </ul>
<b>Step 2 - Mapping Urban Challenges</b>	In this step, you will brainstorm existing challenges you already know	<ul style="list-style-type: none"> <li>Empty Urban Challenges Brainstorming Canvas</li> <li>Urban Challenges Cards</li> </ul>
<b>Step 3 - Become a Context Detective</b>	Now it is time to dive deeper into data.	<ul style="list-style-type: none"> <li>Access to internet</li> <li>This document</li> </ul>
<b>Step 4 - Fill out your Doughnut</b>	Finally, you will assemble your doughnut graphic	<ul style="list-style-type: none"> <li>Empty Doughnut Economy graphic</li> <li>Pencils/ markers</li> </ul>

# STEP 1 - GETTING STARTED

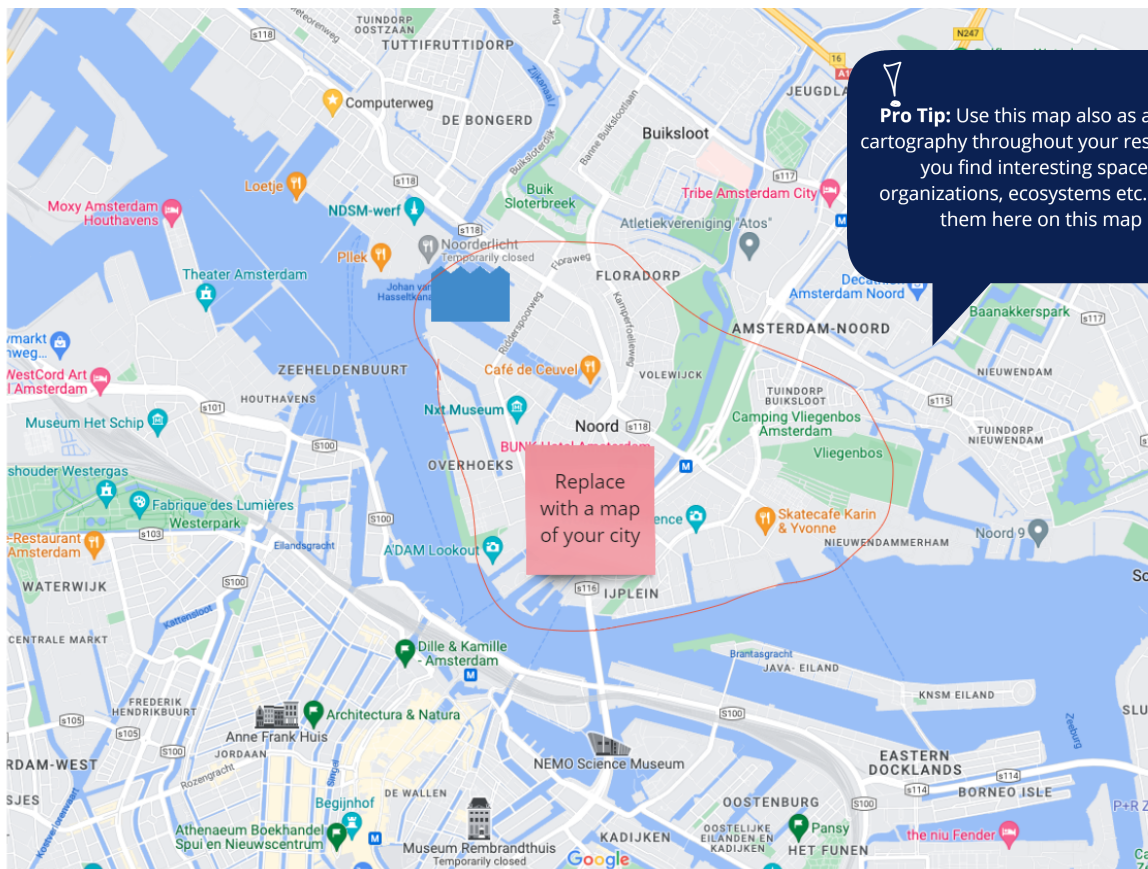
## Setting the scope

### What do you need?

A big map of your city  
Pens  
Post-its

As a first step, define the **scope** of your Urban Challenges Mapping. Are you mapping challenges in a neighborhood, an entire city, or a wider region?

Print or draw a map of your city, use a pen and draw the boundaries around your chosen scope. If you have an existing **Fab City Hub**, mark its location on the map.





## STEP 2 - MAPPING URBAN CHALLENGES

### What you will need

Urban Challenges Brainstorming Template  
Urban Challenges Cards  
Extra post-its

Let's now look at the **ecological and social challenges** within your city. How much do you know about the health of local waters, biodiversity, and soils? How well is your city doing on sustainable energy and materials usage, compared to other cities? Which social, economic, and cultural problems are the most pressing?

If you do not know the answers, don't worry! In this activity, all you need to do is map any challenges that you already know. **We have divided the doughnut into 8 pillars** - 4 that define your city's ecological ceiling and 4 that mark its social foundation



For each of these pillars, the following pages will give you a description of what they contain. Read those and then use the Urban Challenges Cards or post-its to paste challenges on your Urban Challenges Brainstorming template.

# THE PILLARS OF THE DOUGHNUT



## WHAT DO YOU KNOW ABOUT YOUR ECOLOGICAL OVERSHOOT?



### MATERIALS

Most of our economy is still heavily dependent on the use of new materials. If we want to stay within planetary boundaries, it is important that we reduce our environmental footprint. Cities have an important role to play in this, since a lot of our material use is within cities.

Fab Cities that reduce their material consumption and reuse available materials could significantly reduce their material costs, while also pioneering the transition towards the circular economy.

**Map which energy-related and carbon-related challenges you are aware of in your neighborhood.** You can use the Urban Materials Challenges cards as a starting point and place them into your Ecological Overshoot Map. Add your own Materials Challenges if you need to. These could include, but are not limited to: littering, open dumping & burning, lack of food waste separation, industrial waste generation, low recycling rates, soil pollution, wasted food, etc...



## WATER

Freshwater resources are critical for urban economic life, human wellbeing, and natural ecosystem health. During times of scarcity, cities often compete with the industries and surrounding agriculture for the distribution of water. At the same time, urban life often leads to the pollution of local water bodies due to road run-offs, sewage overflow, industrial waste, or the application of fertilizers on gardens, farms, and green spaces.

Fab Cities that operate within the safe boundaries of the local water ecosystem recognize water challenges and engage citizens, industries, and policy makers to find solutions that improve water stress and quality of lakes, rivers, and coastlines.

**Map which water-related and nature-related challenges you are aware of in your neighborhood.** These could include, but are not limited to: pollution of rivers and lakes, droughts, floods, lacking access to drinking water, poor sanitation, presence of water-intensive industries, high household water consumption, etc...



## BIODIVERSITY

As cities expand, the habitats for plants and animals shrink. However, biodiversity loss is not confined to the city alone. Surrounding monocultural farmlands and pesticide usage is equally responsible for declining insects and low soil organism diversity.

Fab Cities aiming to achieve local food production need to ensure that biodiversity is thriving. Some Fab Labs have already developed pollinator monitoring devices or engaged in educational initiatives regarding insects in urban areas. It's important to note that to scale these activities to a city-wide level, it's critical to engage with local food growers, landscape architects, and gardeners.

**Map which biodiversity-related and nature-related challenges you are aware of in your neighborhood.** As a starting point these could include: lacking or disappearing quality habitats, pollinator deaths, invasive species, soil pollution, destruction of rivers and green spaces, lacking biodiversity stewardship, habitat fragmentation, overharvesting of local resources. Add your own Biodiversity Challenges if you need to and place them into your Ecological Overshoot Map.



## CLIMATE

Cities are the main consumers of fuel, electricity and heat to drive social and economic life. Sourcing this energy from fossil fuels for industry, households and transportation leads to the emission of greenhouse gasses and air pollutants that affect the climate and our health.

A Fab City that operates within safe boundaries is fabricating with green energy and transporting goods within the city with low-carbon and low-pollution options.

**Map which climate-related and carbon-related challenges you are aware of in your neighborhood.** These could include, but are not limited to: presence of carbon intensive industries, lack of renewable energy, poorly insulated buildings, heavy traffic, absence of inclusive and green mobility, sea level rise, lacking financial resources to adapt to the changing climate, air pollution, extreme heat, etc...



## WHAT DO YOU KNOW ABOUT YOUR SOCIAL FOUNDATION?



### ECONOMIC INCLUSION

Cities are engines of economic growth. They are seen as hubs for innovation and scientific advancement, attract investments, and act as significant conduits for global financial flows.

Fab Cities aspiring to achieve local economies must incorporate industry, producers, and makers across all scales. The economic inclusion of people within productive sectors is essential for cities seeking to become circular - after all recycling, repairing, and remanufacturing need the skills, space, and expertise of various industries, vocationally trained professionals, and craftspeople. Thus, a Fab City that operates within safe boundaries ensures that all people - including makers - have access to adequate income and good education.

**Map which urban challenges related to social and economic value generation you are already aware of.** These could include, but are not limited to: high unemployment, lack of high-quality vocational training opportunities, income inequality, lack of local capacity to produce own goods, workforce skills that don't match skills needed on the market, lacking competitiveness, gentrification, brain drain, etc...



## CULTURE

A vibrant cultural life in which both new and traditional expressions of culture co-exist. A cultural landscape in which many different diverse populations and communities are represented. Cultural organizations that are sustainable, even as our cities face rising costs for space - this is the vision of culture within planetary boundaries.

Fab Cities are also spaces that preserve existing and create new cultural values through the creation of art, production, and design. It's essential that Fab Cities ensure their activities are inclusive of the diverse co-existing cultures, while also acknowledging the past that shaped contemporary culture.

**Map which urban challenges related to culture, access to culture, and cultural representation you are aware of.** These could include, but are not limited to: lacking access to communal cultural activities, barriers to connect to local history, lack of cultural life and events especially for different backgrounds, balancing tradition and innovation, limited spaces for facilitating interactions between diverse communities, lacking sustainability for cultural organizations, etc...



## HEALTH & WELLBEING

A healthy population should be the goal for every city - including Fab Cities. Measuring community health is not always easy since there are many indicators we could use to determine the physical and mental wellbeing of citizens. Furthermore, wellbeing is not only determined by physical health - but also whether people feel socially connected, whether they have access to affordable housing, and many more.

Fab City Hubs can contribute to the health and wellbeing of their citizens by producing non-toxic products and goods. In a wider sense, Fab City Hubs can also influence wellbeing by helping to connect socially disadvantaged groups with resources and economic opportunities, and by raising awareness about potential health and wellbeing challenges faced by citizens.

**Map which urban challenges related to community health and wellbeing you are already aware of within your neighborhood.** These could include, but are not limited to: lack of affordable housing, high incidences of physical illnesses, lacking access to local and nutritious food, high incidence of mental health issues, high crime rates, aging population, isolation and loneliness, high degree of homelessness, etc...



## SOCIETY

Cities are places where people and nature live together. To foster a thriving society, socially engaged networks are essential.

Fab Cities that encourage social engagements within and across neighborhood boundaries contribute to the wellbeing of all their citizens.

**Map which social engagement challenges you are already aware of within your neighborhood.** These could include, but are not limited to: mistrust & exclusion, high incidences of crime and violence, limited opportunities for learning, gentrification, population growth, inequality and social disparities, limited citizen engagement in governance, etc...

## STEP 3 - BECOME A CONTEXT DETECTIVE

### Quantifying your baseline

In Step 3, you will create a semi-quantitative baseline of your urban ecosystem. For each of the eight pillars of the doughnut, we have selected two indicators that give a better idea of your urban context. Using public data sources and your own research, you will fill out a scale of 1-5 for each of the **16 baseline indicators**. You will see a traffic-light scale like this:



On this scale, you will mark your findings. This is the scale, showing you how well your mapped area is doing in this indicator.

**Below each quantitative baseline, we have a space for you to** keep track of other research findings, such as local newspaper articles, studies, graphs, maps or images around the indicator that you come across.

We encourage you to dig deeper. Search for local information beyond the numbers to really understand what's happening in your city. Focus on those indicators most interesting to your Fab City. It is not necessary to complete every section of the Doughnut. You can also start with one or two areas and keep working on sections over time.

**Unleash your inner detective!**

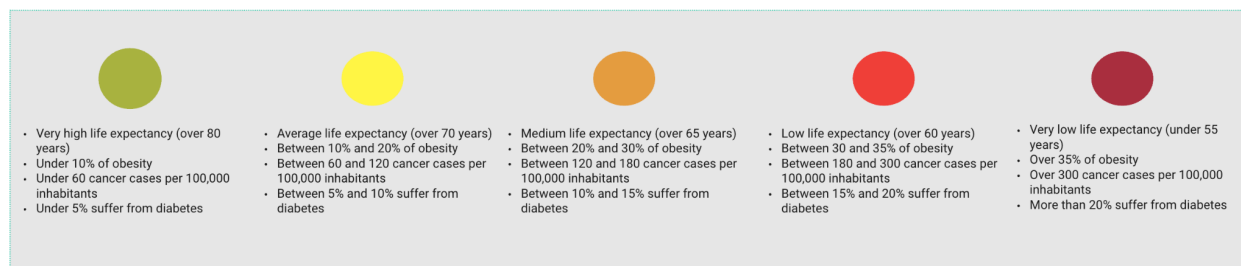


## HEALTH & WELLBEING

### Physical and Mental Health

#### Research Activity

Does your city collect data on health indicators? Go to your city's open data portal and explore the health indicators. Do you find out how high the premature mortality rate is? If you cannot find this exact indicator, try to find a similar indicator. We provided a list of possible options.



#### Diving deeper

Can you find the most important health problems (e.g. drug abuse, obesity, autoimmune diseases) in your city



## Housing

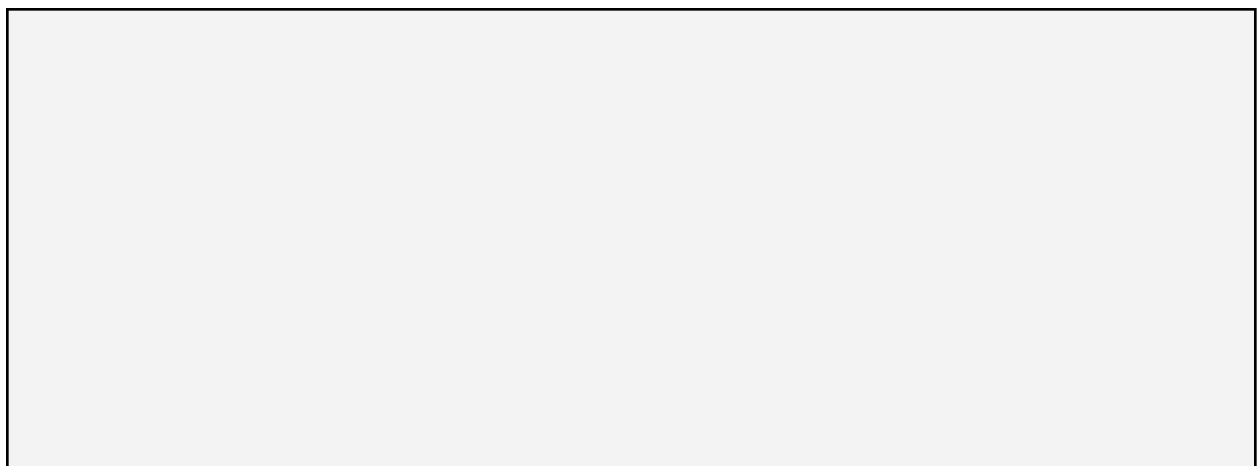
### Research Activity

Many growing cities face a **severe housing challenge** - particularly in terms of providing affordable housing for low-income communities. Access to reasonably priced housing is becoming increasingly challenging. There is no one indicator or data set you can use to understand the severity of housing prices, homelessness, affordability or displacement. To get comparable information, go to [Numbeo](#) and look up the rent index under the Cost of Living tab in your city. If your city is not represented, search for comparable data on your city's data portal.



### Diving deeper

Depending on your city, you might find more accurate indicators such as housing inflation rates, average rental prices per m2, homelessness rates or shares of people receiving housing subsidies by neighborhood. Some cities also collect data on how much households spend on rent and housing. Which local housing challenges are dominating? Is your neighborhood particularly challenged by lacking access to affordable housing? Are there any maps to help you visualize housing shortages or increasing prices



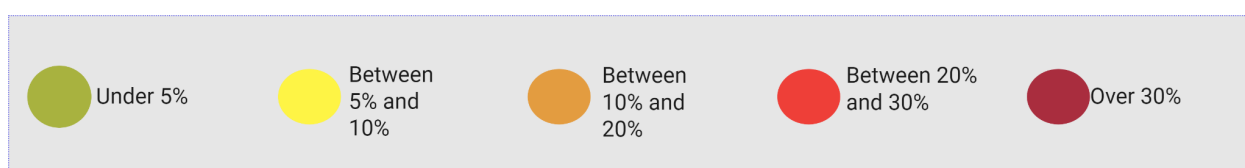


## ECONOMIC INCLUSION

### Employment

#### Research Activity

What are the employment rates in your neighborhood or city? Go to your city's data portal and compare unemployment amongst neighborhoods if available. You can also compare the statistics to national averages.



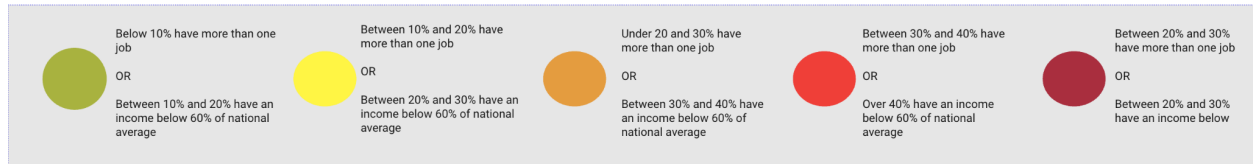
#### Diving deeper

General employment rates do not tell a full story of the actual economic situation of your city or neighborhood. Unemployment might be particularly high for youth, women or socioeconomically disadvantaged communities. Which local challenges to employment and work do you see in your area?

## Income

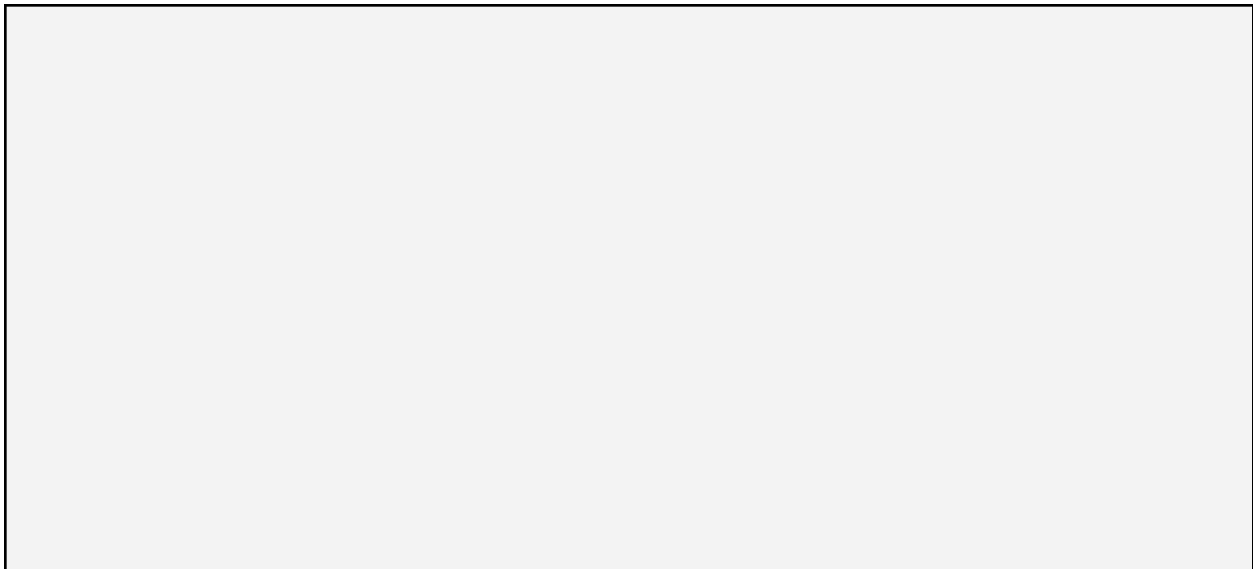
### Research Activity

Do the majority of people in your city earn sufficient income to cover housing, food, energy, and basic necessities? Most cities have statistics on the economic situation and income of households - often broken down by neighborhood. Try to find this data and estimate how many people are living below the national average income in your neighborhood.



### Diving deeper

Makers, small producers, artists and vocationally trained professionals receive significantly lower incomes than university graduates employed as lawyers, researchers or investment bankers. These disparities are not visible in a general income indicator. Can you find any other data or local anecdotes on the economic challenges of local makers?





## SOCIETY

### Community Life

#### Research Activity

What does an active community life look like in our cities? What kind of community life should we strive for? While there is certainly not one right or wrong way for communities to engage with each other, we propose that active communities should enable people to locally meet each other. **Importantly**, it should encourage people to have **everyday encounters** with each other that do not center around consumption only. That means, in an active community, formal and informal public spaces exist that encourage the building of community networks around arts, sports, culture, spirituality, well-being or play.

#### Instructions

1. Create a list of communication channels (e.g. newspapers, social media platforms, podcasts, local radio channels) that are usually used locally to promote local activities or events. Make sure your list also covers material in possible other languages spoken in your area.
2. Observe the list for two weeks and log all activities, events or messages during this week which relate to community. You can use the grey box below to take notes, if you like)
3. After two weeks, check all the categories you found:
  - ☐ **Gardening and nature-based events** (e.g. nature walks, garden volunteering, clean-up days)
  - ☐ **Crafts-based events** (e.g. repair cafes, crafting workshops)
  - ☐ **Health and well-being-based events** (e.g. community yoga & meditation sessions)
  - ☐ **Music and art-based events** (e.g. open music festivals, street fairs, art exhibitions, live concerts, open mics)
  - ☐ **Politics-based events** (e.g. protests and marches, political discussions, town hall meetings)
  - ☐ **Sports-based events** (e.g. charity runs, local sport tournaments, outdoor sports clinics)

- ☐ **Learning & knowledge-based** (e.g. educational workshops, public lectures & book readings)
- ☐ **Children and parent-related activities** (e.g. regular playgroups, fairs for children, parenting workshops, meet-up groups)
- ☐ **Food-based events** (e.g. food festivals, farmer's markets, culinary workshops, harvest festivals, food & nutrition seminars)
- ☐ **Spirituality-based events** (e.g. meditation sessions, worship services, public events organized by local churches)



Found events  
in over 6  
categories



Found events  
in between  
4-5 categories



Found events  
in between  
2-3 categories



Found events  
in between  
1-2 categories



Found no  
events at all

### Diving deeper

What did you learn? Did you discover something new about your area's community life? Are there any gaps that you have noticed? Did you notice any events that do not fit into the above groups? Which ones? Do you feel like your channels of communication did not really give you a good picture of what is happening in your neighborhood? Why?

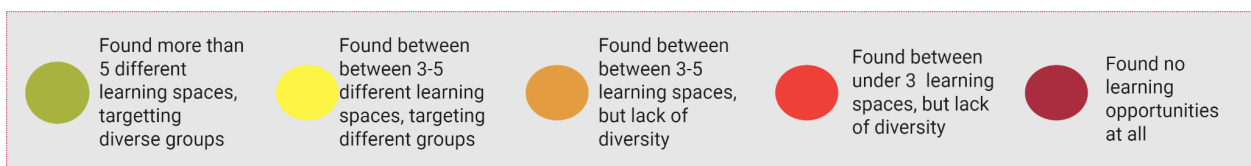
## Learning & Education

### Research Activity

Having access to education is often just measured in terms of access to school. However, education and learning should never end and not be reduced to formal (higher) education pathways but also integrate opportunities for life-long, informal learning and vocational training.

Within these activities we ask you to research learning opportunities within your community. This can be a simple 30 minute online search, using search engines or Google maps. Restrict yourself to the scope of your neighborhood that you have sketched out in Step 1. Which of the following places do you find?

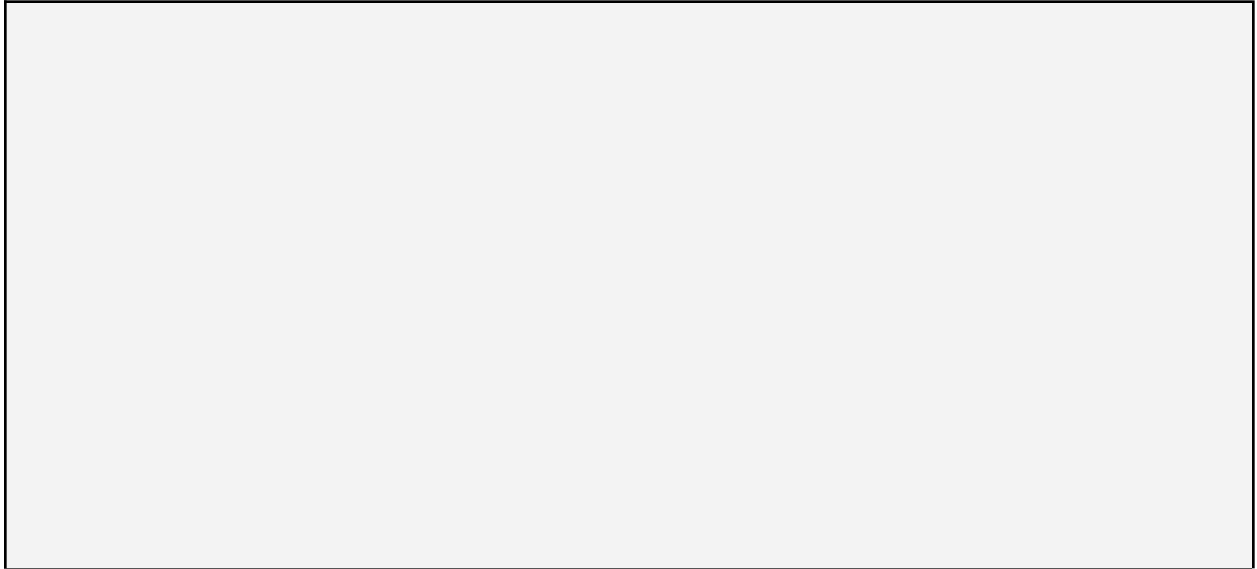
- ☐ Primary schools & secondary schools
- ☐ Vocational training schools
- ☐ Universities & Colleges
- ☐ Continuing Education Centres, offering courses and programs for adults to enhance knowledge and skills in specific areas
- ☐ Community Centers, offering workshops, educational programs and activities for all ages
- ☐ Art & Music schools
- ☐ Other informal spaces for learning, such as maker spaces, repair cafes, Fab Labs
- ☐ Libraries & museums





### **Diving deeper**

You can use this space to brainstorm, share links, comments or photos from your research activity.

A large, empty rectangular box with a thin black border, intended for users to provide additional information or research findings.



## CULTURE

### Multivoicedness

#### Research Activity

Culture activities are an essential aspect of people's lives. Providing spaces, infrastructure, and resources for diverse cultural initiatives and cultural expressions is an important part of a healthy cultural community life.

However, sometimes cultural activities in a city are shaped by only one voice and not represented by the diversity of parallel, different cultures. This research activity is a half-day ethnographic fieldwork to help you to assess the diversity of cultural voices and develop a heritage-sensitive view about your area. Note that this assessment is written in the context of current societal discussion about how the colonial, industrial, and extractivist past works in the present.

#### Instructions

##### Preparation

1. Choose a small public area in your neighborhood - this could be one street, square, or block close to you. Include a map of your selected area.
2. If you work in a team, have a conversation around which cultural voices you expect to be visible.

##### Fieldwork

1. Visit your area and list any historical and cultural features (monuments, plaques, public items, street names) which refer to the past. Make sure to look all around you, up and down. Mind the details! (e.g. [Stolperstein](#) or facades)
2. Take notes on what they refer to and what they represent. Use all your senses! (e.g. the Stolperstein represent a person who was killed)
3. If you cannot find anything, ask around!

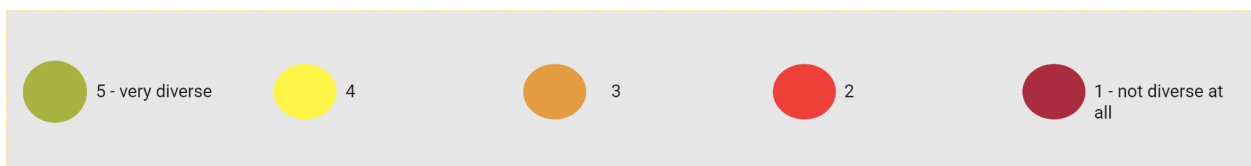
#### Assessment

Once you are back, use the checklist below and highlight the statements that resonate with what you found:

- ☐ We found traits of culture that belong to **dominant cultures**, such as the nation-state, political systems or religion (e.g. statues of military leaders, plaques or symbols celebrating victory, street names of politicians) which have **not** been explained or critically contextualized

- ☐ We found traits of culture that put **citizens** at the core, such as art pieces showing families, people, workers , animals
- ☐ We found **murals or street art** depicting people or events relevant to local society
- ☐ We found diversity in **commemorative monuments** covering a wide array of themes, such as indigenous heritage, vernacular, pre-colonial, or immigration history, or any other contributions of different cultural, linguistic, or ancestral communities
- ☐ We found commemorative objects to people or communities that honor **historical figures** from different cultural backgrounds. These can include statues or plaques recognizing diverse individuals who have made significant contributions to society, such as civil rights activists, artists, scientists, or politicians.
- ☐ We found indications (texts, plaques, signs) that address **colonial backgrounds** (e.g. renaming of streets, buildings, or contextual information on colonial statues)
- ☐ We found **natural objects** (plants, waters, ecosystems) which are highlighted with e.g. signs, plaques that give context on their story (e.g. oldest tree in the city)
- ☐ We found **street names** that reflect a range of cultural backgrounds. (e.g. you came across names inspired by different languages, historical events, or cultural figures associated with specific communities)

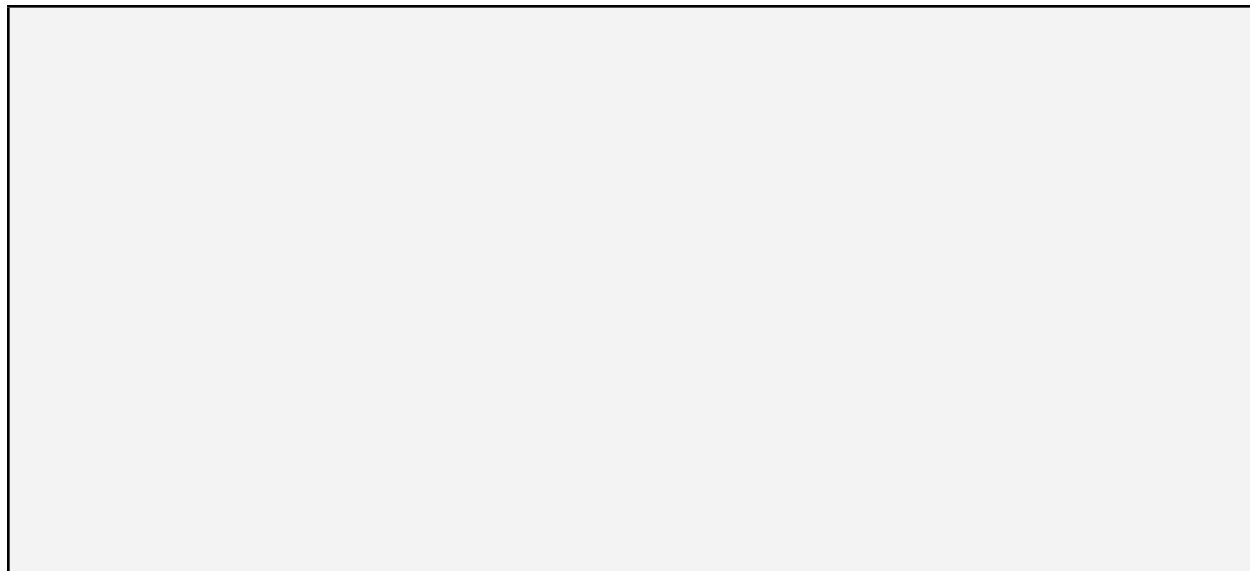
**Afterwards assess as a team:** On a scale of 1 to 5, do you now think your neighborhood represents multiple cultural voices?



### **Diving deeper**

Have a discussion about your fieldwork. Do you feel like your area has a multi-voiced culture? Is there anything that you've found which is not on the list?

If you still want to go deeper, you might be interested in learning how people actually feel towards certain monuments. Check out the method of [emotion networking](#) to learn more.



## Historical Awareness

### Research Activity

Historical awareness matters for any initiative that starts their work within a community! It makes sure you are not a UFO landing as a stranger within an unknown area. Ideally, of course, everyone has a sense of historical awareness about the places they live in - to understand past challenges and learn from them, or to be sensitive towards trauma or values experienced by locals and their ancestors.

But since we cannot measure historical awareness broadly, we will start with your team. This is a self-assessment you can do in your team to identify how "aware" you are about the past and its potential impacts to the culture and society today.

### Instructions

Which of these statements apply to you:

- 1** - In our team, we have "embodied knowledge" of the area's history. My understanding grew by spending time here, walking around and taking pictures of the places
- 2** - In our team, we have "learned knowledge" of the area's history. I have learned by reading about it or talking to others
- 4** - In our team, we have a critical awareness of the contestations and debates around the traces of the past in this area. I have read or heard about conversations on how change over time has impacted people's feelings
- 6** - In our team, we have engaged in these conversations as a stakeholder. In these, I have formed my own opinion about keeping or changing something in the area (e.g. demolition of a building or artwork)
- 8** - In our team, we take leadership in uncovering traces of the past in interaction with all stakeholders. I am enriching the conversation by providing spaces for exchange on these topics. For example, I organize events in (physical or digital) spaces to foster a discussion .

Once you have discussed these statements as a team, count all the scores (the number at the beginning of each statement indicates the score). Sum them up and indicate here what your team's total score is.



Team score  
higher than 13



Team score  
between 7 and  
13



Team score  
between 4-6



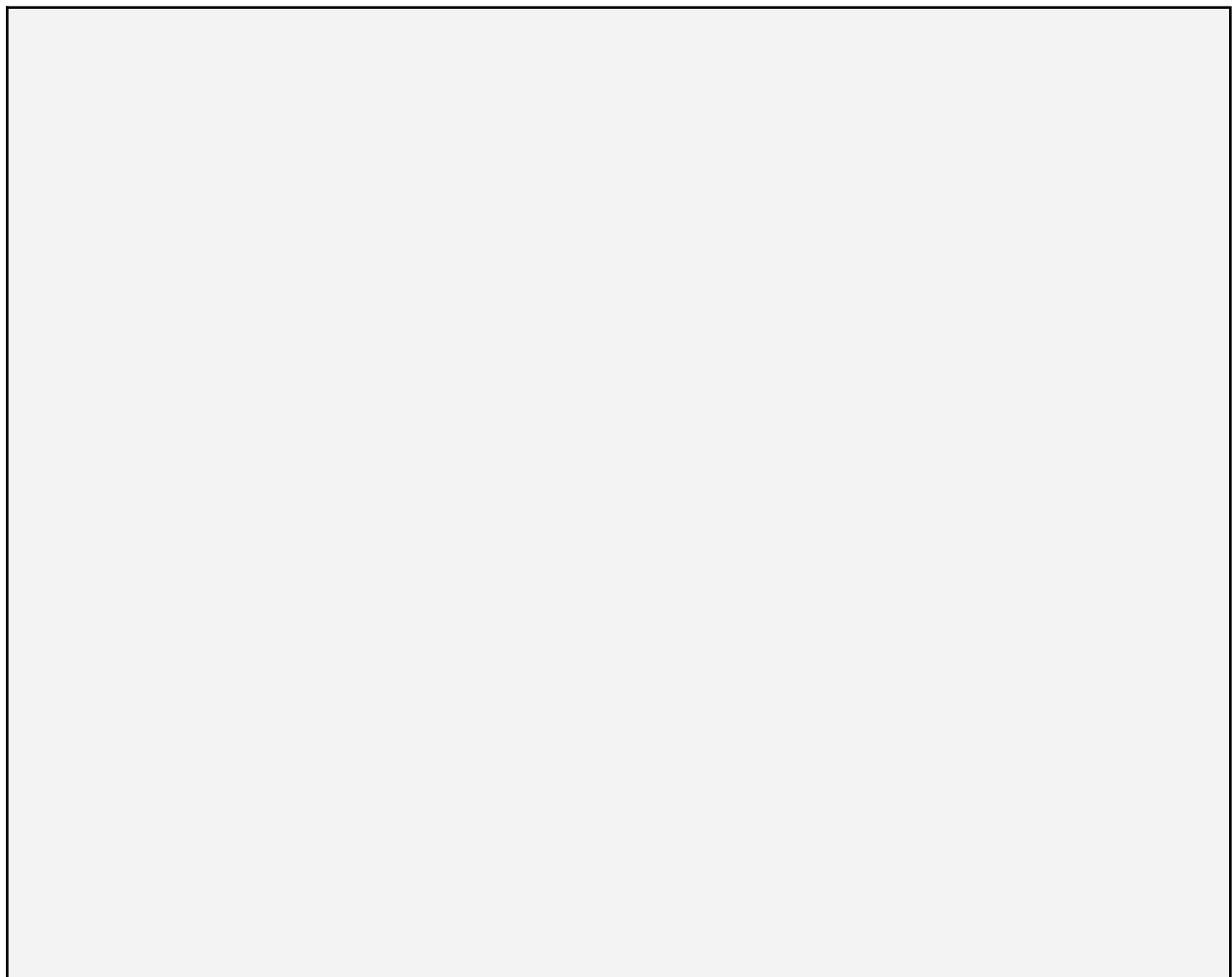
Team score  
between 2-3



Team score  
below 2

### Diving deeper

Of course, this exercise is only a starting point to discuss as a team how you could become more aware about history in your area. Take Notes about your discussion or dive deeper by researching your area's history from multiple perspectives.





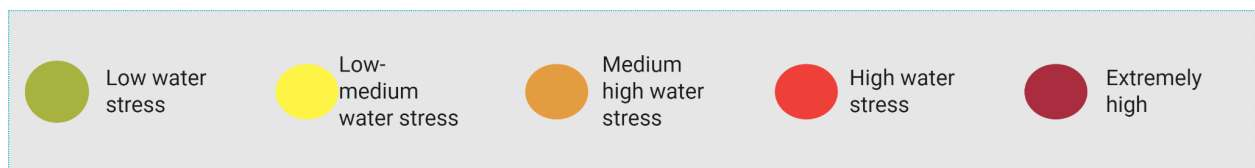


## WATER

### Water Stress

#### Research Activity

Use the [WRI Aqueduct Risk Atlas](#) and find your area on your map. Which category of water stress does your city experience?



#### Diving deeper

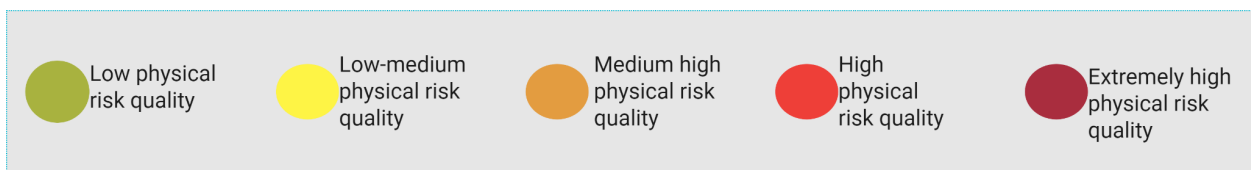
What local water challenges related to water stress can you find? Which parts of your city consume a lot of water?

## Water Quality

### Research Activity

**For European Fab Cities:** Use the [European Water Framework Directive Map](#) and turn on the layer of "Quality Elements". Search for your city and note the water quality of local rivers, lakes, or coasts.

**For non-European Fab Cities:** Use the [WRI Aqueduct Risk Atlas](#) and find your area on your map. Which category level of physical water risk (pollution) does your city experience?



### Diving deeper

Can you find information on the local quality of lakes, rivers, and streams in your city? Are there any signs or reports on local water pollution? Take note of your findings, insert maps or reports into the space below.



## CLIMATE

### CO2 Emissions

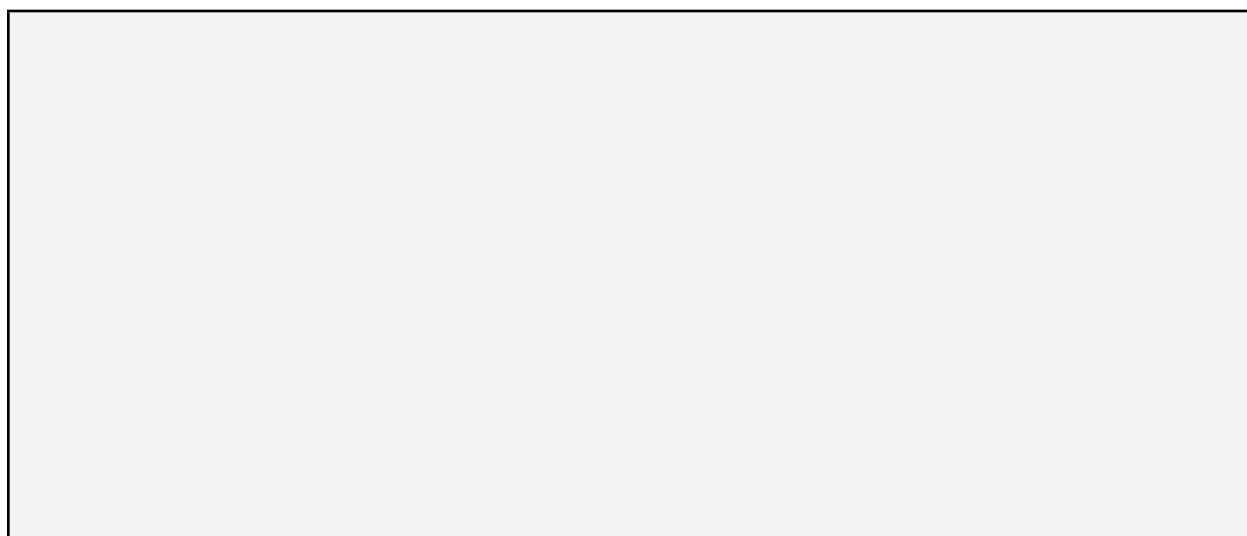
#### Research Activity

How much **CO2** does your neighborhood emit, compared to other cities or neighborhoods? You can use the Emissions Inventory of the CDP and see if you find your city's total **Scope 1 emissions**. If not, look for municipal climate change strategies. If you find your city's *total* GHG emissions, divide the number by your city's inhabitants.



#### Diving deeper

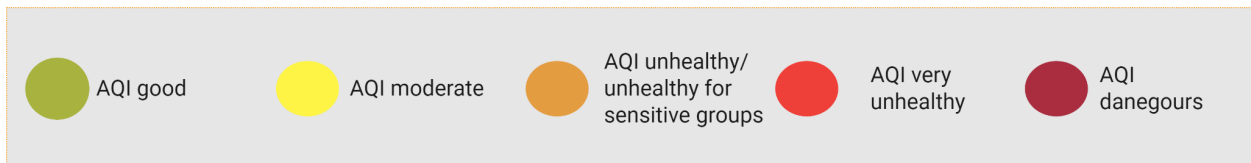
Which highly polluting industries do you have in your area? For your reference, industries with the highest emissions are usually manufacturing of steel and concrete, manufacturing of chemicals and petrochemicals as well as other industries (such as manufacturing of electronics, food, and machinery).



## Air Pollution

### Research Activity

Cities often monitor air pollution at a neighborhood-level. But first, we will look at your city's air quality, using the [World Air Quality Index](#). Go to the website and search your city on the map. What is the most up to date reading? If your city is not on the map, search for NOx emissions monitored by your city. What was last year's average?



### Diving deeper

See if you find more information on local/neighborhood-level air quality? Which pollutants have been measured and what is their value? To learn more about what the level of air pollutants tells you about the pollution source, check out this [link](#). What do you think is the most prominent source for air pollution in your area? Major traffic lines, individual industrial facilities or railway stations?



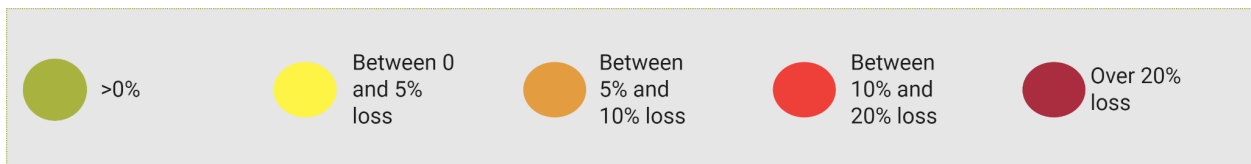
## BIODIVERSITY

### Land Use Change

#### Research Activity

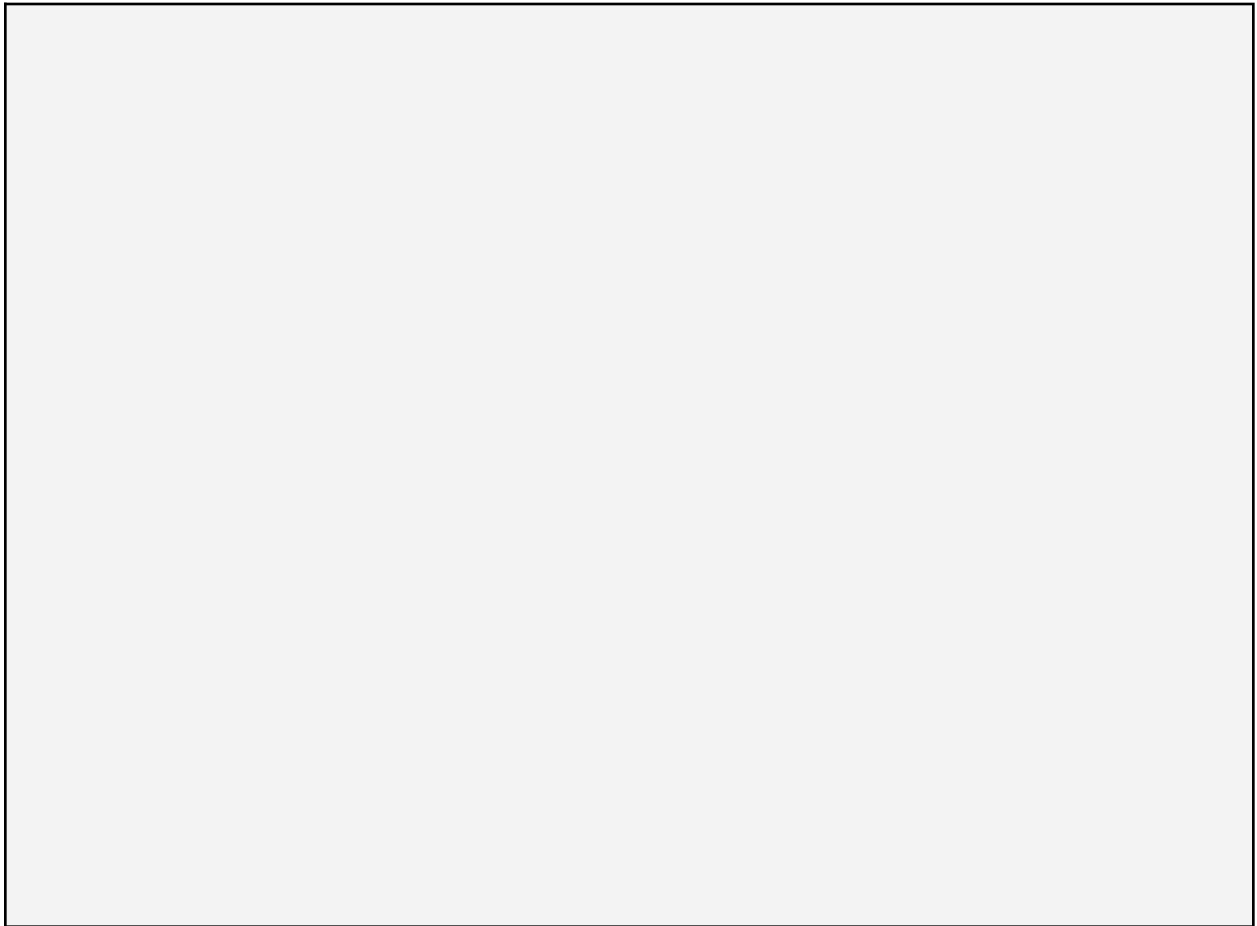
How much tree cover has your city or neighborhood lost between 2000 and 2020? Knowing tree cover loss can be an important indicator to identify potentially lost habitats for urban development projects. For this activity, you will create a free account at [restor.eco](https://restor.eco). Click on the yellow "Create" top right and create a New Site. Now, you can either draw an area around your city or upload a shapefile of your city. Click on "Analyze" and navigate to the "Land Cover" tab. Here you find information on the tree cover in 2000 and 2020. To calculate the reduction percentage, use the following formula:

$$(Land\ Cover\ in\ 2000 - Land\ Cover\ in\ 2020 / Land\ Cover\ in\ 2000) * 100$$



### **Diving deeper**

Tree cover loss is only one of many indicators for a possible land use change. To dive deeper, explore your city's municipal data portals to find out (1) whether your city has plans to protect or restore local habitats, (2) how much green space per person exists, (3) whether your neighborhood has more or less green spaces compared to neighborhoods in your city, (4) whether you know of local development projects on green spaces or forests.



## Biodiversity Loss

### Research Activity

Measuring and monitoring the **loss of local plants, birds, insects or other animals** is difficult. But biodiversity is for resilient ecosystems. The use of pesticides, land use change and monoculture farming are threatening species. What does your region or municipality do to protect local biodiversity? To judge this, we will be searching for municipal **biodiversity protection strategies**. Go to your city's website and search for any recent plans and judge their ambition. The [Self-Assessment Tool for Urban Sustainable Development Strategies](#) is a great resource to assess how ambitious your city's biodiversity or environmental protection strategy is.



### Diving deeper

Can you find information on the state of local species? Are there any threatened or endangered species found in your area? Are there any initiatives or NGOs who know more about local species loss? Does your city have any problems with invasive species?

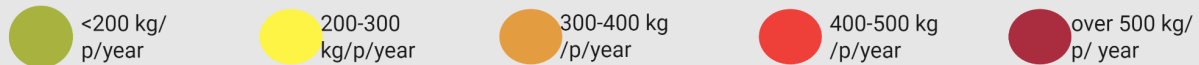


## MATERIALS

### Waste Generation

#### Research Activity

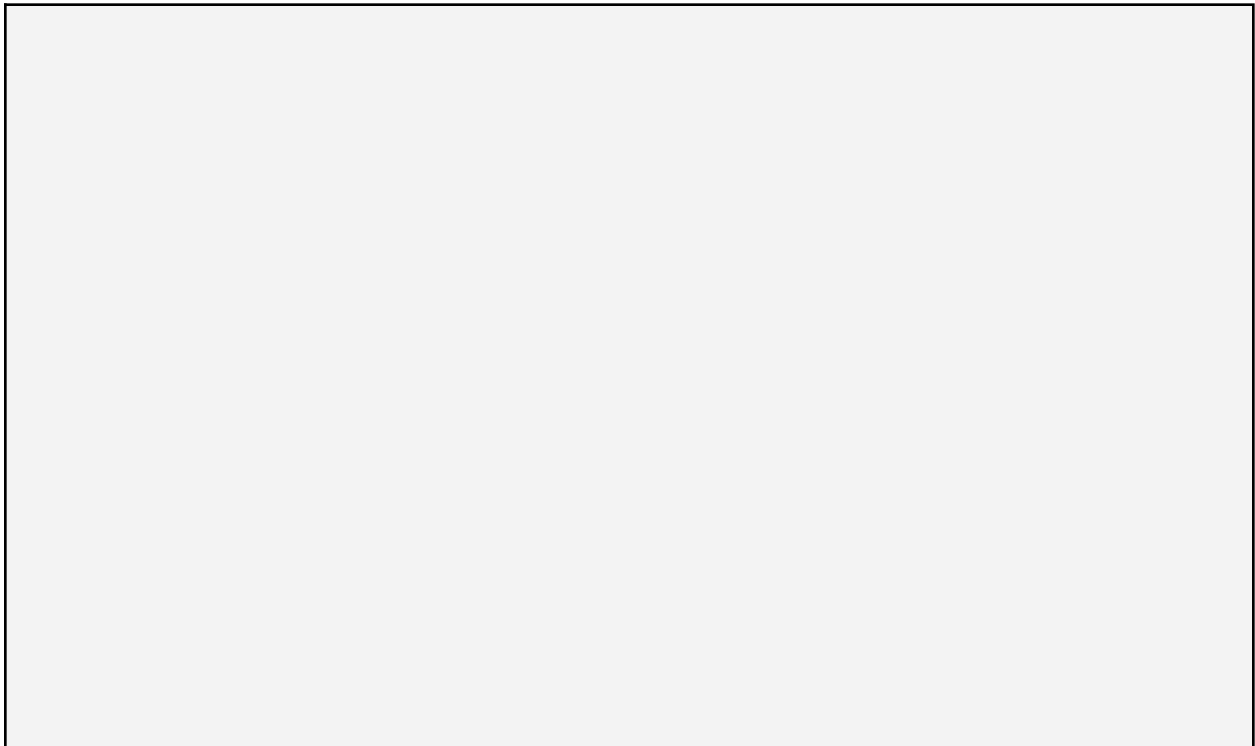
Waste generation is one indicator we can use to get an idea of the consumption patterns and wealth of our society. How much waste does your city or neighborhood generate per person? Search your city's statistical databases for any public information on annual municipal waste and divide the value by the number of people in the city during this year.





### Diving deeper

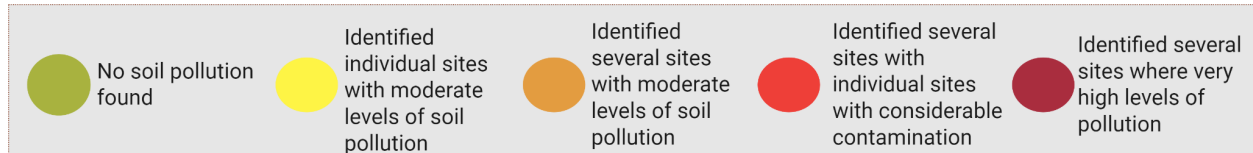
Waste generation alone does not tell us as much about how well our waste is managed. For that, we can dive into local recycling rates, as well as other potential signs of poorly managed waste. For example, have there been reports of illegal waste disposal or burning in or around your city? If you don't know the answer and cannot find information on this, can you judge how much of a problem littering is? Does your city compost food waste? Do businesses need to separately recycle food waste or is it common to dump organics in the mixed waste bin? **Record sources, graphics, maps or any other information you like.**

A large, empty rectangular box with a thin black border, intended for students to record sources, graphics, maps, or any other information they find relevant to the topic.

## Soil Pollution

### Research Activity

The heritage of industrial activity is often still present in urban soils. Healthy soils are very literally the foundation for a productive city that can maximize local food production and regenerate ecosystems. Can you find any local studies, soil maps, or data on the quality of your neighborhood's soils? Are polluted sites present in your area? Judge how severe the issue of soil pollution is.



### Diving deeper

Can you find out what type of pollution is mostly affecting soils? Any other soil challenges, e.g. erosion or soil compaction that you can find information about?

**Record graphics, maps of soil zones, articles or any other sources you find**

## STEP 4 - FILL OUT YOUR DOUGHNUT

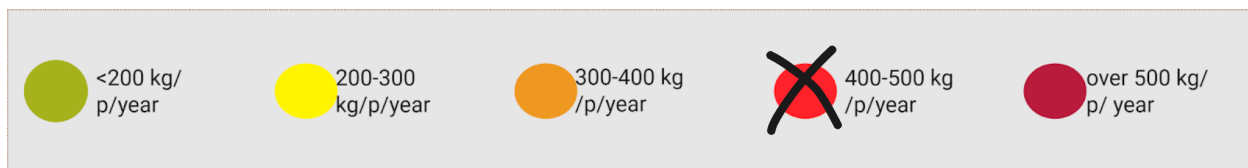
### What you will need

Urban Doughnut Graphic  
Pens or markers

Now that you have created a baseline for all or some of the 16 indicators, you can assemble your baseline graphic. You may call it your doughnut, bagel, simit or any other round baked good with a hole in it.

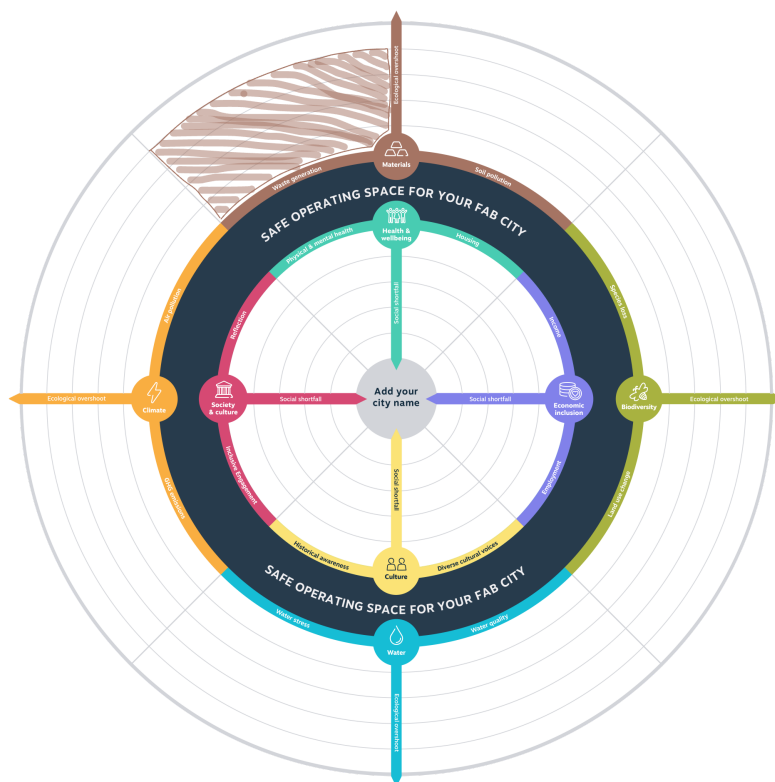
1. Download the template. You can print it if you want
2. Use markers to translate each indicator's score into the graphic.

As an example, your city's waste generation is around 450 kg per person per year:



In this case, you will draw out four bars in your graphic. If you have done this assessment for your city AND neighborhood, you can use little icons or symbols to show if your neighborhood baseline differs from the city.

Once you have done this for all indicators, you have your doughnut!



## What now?

Having a solid baseline understanding for your neighborhood is a first step to build a program in your Fab City around it. Ideally, your Fab City addresses urban challenges that you identified to regenerate local economies and ecosystems.

We encourage you to follow Step 3 & 4 of the [CENTRINNO Cartography!](#) Here, you will learn how to find circular opportunities that could address your urban challenges.

To take a short-cut, you can also directly search through our [Circular Opportunities Map](#) and find inspirations for community projects for different urban challenges.

### Organizing a circular makers fair

OPPORTUNITY

Bringing together makers, designers and producers with circular business models is a great starting point to build a circular innovation network and foster the exchange of skills, knowledge and resources. BASE, part of the Fab City Hub in Milan, organized an exhibition for local circular businesses open to the public. This event allows small makers to showcase their businesses and engage in discussion panels around the challenges and opportunities they face.



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