

# THE AMSTERDAM CITY DOUGHNUT

A TOOL FOR TRANSFORMATIVE ACTION



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# AMSTERDAM BECOMING A THRIVING CITY

Cities have a unique role and opportunity to shape humanity's chances of thriving in balance with the living planet this century. As home to 55% of the world's population, cities account for over 60% of global energy use, and more than 70% of global greenhouse gas emissions, due to the global footprint of the products they import and consume.<sup>1</sup> Without transformative action, cities' annual demand for Earth's material resources is set to rise from 40 billion tonnes in 2010 to nearly 90 billion tonnes by 2050.<sup>2</sup> At the same time, cities have immense potential to drive the transformations needed to tackle climate breakdown and ecological collapse, and to do so in ways that are socially just.

Amsterdam's vision to be 'a thriving, regenerative and inclusive city for all citizens, while respecting the planetary boundaries' makes the city a pioneer of such systemic transformation. In this spirit, the City of Amsterdam has joined the Thriving Cities Initiative (TCI), a collaboration between C40, Circle Economy, and Doughnut Economics Action Lab, which works with cities pursuing such a transformation.

A key tool of the TCI is a City Portrait based on the Doughnut of social and planetary boundaries. It is a holistic snapshot of the city and one that serves as a starting point for big-picture thinking, co-creative innovation, and systemic transformation, rather than as a comprehensive assessment of the city.

This document sets out the City Portrait for Amsterdam, known as the Amsterdam City Doughnut. It presents city life and its impacts through four 'lenses' – social, ecological, local, and global – which together provide a new perspective on what it means for a city to thrive. In essence, it invites city stakeholders to ask themselves a very 21<sup>st</sup> century question:

**How can Amsterdam be a home to thriving people, in a thriving place, while respecting the wellbeing of all people, and the health of the whole planet?**

The Amsterdam City Doughnut is intended as a stimulus for cross-departmental collaboration within the City, and for connecting a wide network of city actors in an iterative process of change, as set out in the eight 'M's on the right.

This document illustrates some of the many approaches for putting the tool into practice, such as creating a city 'self-portrait', and deepening engagement with key city initiatives like Amsterdam's Circular Roadmap 2020-25 and the Roadmap to Climate Neutrality 2050.

Amsterdam is ideally positioned to use the portrait as a tool for transformative action. The city has been recognised for its 'Amsterdam Approach' to collaborative innovation, which connects neighbourhood initiatives, start-ups and civil society with the established institutions of government, business and knowledge institutions. Furthermore, the city is home to a dynamic network of changemakers who are already using Doughnut-inspired thinking to drive systemic change.

With such an opportunity, Amsterdam can be a pioneer of what it means to become a thriving city and in doing so inspire cities worldwide on their own journeys of transformation.

## 8 WAYS TO TURN THE CITY PORTRAIT INTO TRANSFORMATIVE ACTION

**MIRROR** Reflect on the current state of the city through the portrait's holistic perspective

**MISSION** Create a compelling vision of what it means to become a thriving city

**MOBILIZE** Bring together the city changemakers and stakeholders needed to bring about change

**MAP** Identify existing initiatives, policies and strategies that are already taking the city in this direction

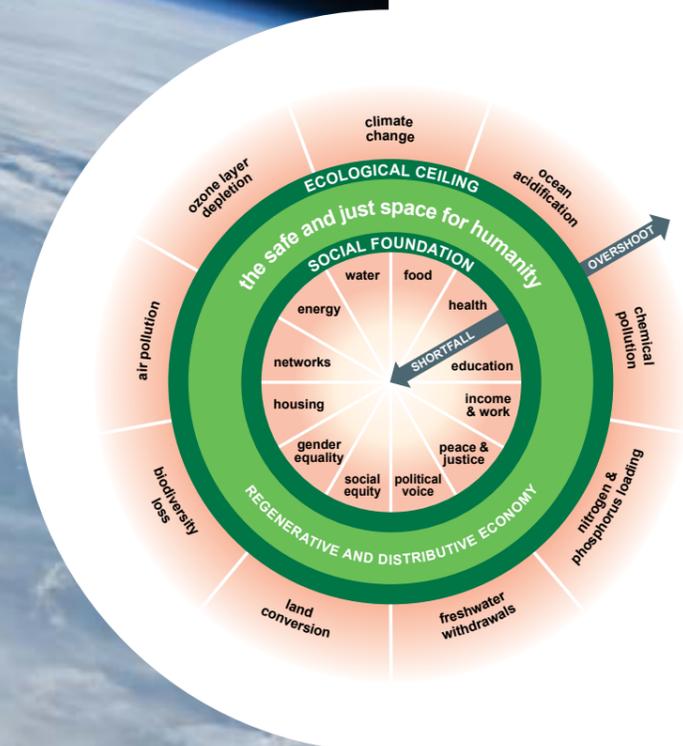
**MINDSET** Embrace the values, ways of working, and new narratives that underpin the deeper shifts required

**MOMENTUM** Create an iterative process that drives cycles of transformative policy and action

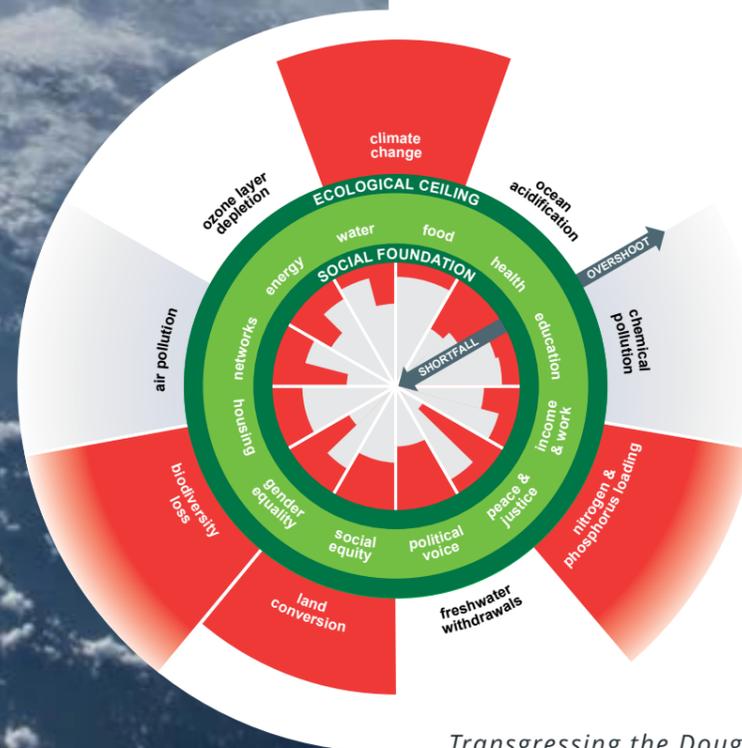
**MONITOR** Assess progress against leading indicators that enrich the City Portrait

**MMM!** Make it irresistible: be creative, have fun, share learning and stories of success - and celebrate!

# THE DOUGHNUT: A 21<sup>ST</sup> CENTURY COMPASS



*The Doughnut of social and planetary boundaries*



*Transgressing the Doughnut's social and planetary boundaries*

The Doughnut of social and planetary boundaries envisions a world in which people and planet can thrive in balance – in other words, it offers a compass for guiding 21<sup>st</sup> century prosperity.<sup>3</sup>

The Doughnut's social foundation, which is derived from the social priorities in the UN Sustainable Development Goals, sets out the minimum standard of living to which every human being has a claim.<sup>4</sup> No one should be left in the hole in the middle of the Doughnut, falling short on the essentials of life, ranging from food and water to gender equality and having political voice.

The Doughnut's ecological ceiling comprises nine planetary boundaries, drawn up by Earth-system scientists in order to identify Earth's critical life-supporting systems and the global limits of pressure that they can endure.<sup>5</sup> Humanity must live within these ecological boundaries if we are to preserve a stable climate, fertile soils, healthy oceans, a protective ozone layer, ample freshwater and abundant biodiversity on Earth.

Between the social foundation and the ecological ceiling lies a doughnut-shaped space in which it is possible to meet the needs of all people within the means of the living planet – an ecologically safe and socially just space in which humanity can thrive.

If humanity's goal is to get into the Doughnut, the challenge is that we are currently far from doing so, as shown below. Worldwide, billions of people still cannot meet their most essential needs, yet humanity is collectively overshooting at least four planetary boundaries, and is driving towards climate breakdown and ecological collapse. The red wedges below the social foundation show the proportion of people worldwide currently falling short on life's essentials. The wedges radiating beyond the ecological ceiling show the current overshoot of planetary boundaries

The challenge of our times is that we must move within the Doughnut's boundaries from both sides simultaneously, in ways that promote the wellbeing of all people and the health of the whole planet. Achieving this globally calls for action on many levels, including in cities, which are proving to be leaders of driving such change. The Thriving City Portrait aims to amplify that potential.

# CREATING A THRIVING CITY PORTRAIT

The Doughnut of social and planetary boundaries can be turned into a city-scale tool by asking the very 21st century question posed on this page. It is a question that invites every city to start exploring what it would mean to thrive within the Doughnut, given that particular city's location, context, culture and global interconnections – and the result is the City Portrait.

In order to dive more deeply into this question, the City Portrait comprises four interconnected 'lenses', each one highlighting a different aspect of what it means to be a thriving city.

## Shaping the lenses: city targets and snapshots

Each lens draws on the available targets for defining the Doughnut's social foundation and ecological ceiling, for both the city's local outcomes and its global impacts. It then matches these with the most relevant statistics available that give an illustrative snapshot of city life and its impacts in relation to those targets.

As a tool the Thriving City Portrait can be used to:

- *envision* what it means to be a thriving city, combining social goals with ecological ones, and local aspirations with global responsibility
- *connect* a network of city actors, with diverse interests and concerns, through a common framework
- *explore* the city from a holistic perspective, inviting city actors to see interconnections, recognise tensions, and identify synergies for action
- *inspire city-wide initiatives* and co-creation through an iterative process of transformative innovation (see p.14)
- *develop metrics* fit for a 21<sup>st</sup> century city, that start to measure and reflect what it means for this city to thrive

## HOW CAN OUR CITY BE A HOME TO THRIVING PEOPLE IN A THRIVING PLACE, WHILE RESPECTING THE WELLBEING OF ALL PEOPLE AND THE HEALTH OF THE WHOLE PLANET?

	SOCIAL	ECOLOGICAL
LOCAL	What would it mean for the people of Amsterdam to thrive? 1	What would it mean for Amsterdam to thrive within its natural habitat? 2
GLOBAL	What would it mean for Amsterdam to respect the wellbeing of people worldwide? 4	What would it mean for Amsterdam to respect the health of the whole planet? 3

The Thriving City Portrait is a new tool which is being piloted through the Thriving Cities Initiative in Amsterdam, Philadelphia and Portland. The TCI welcomes feedback and suggestions on how to enrich it conceptually and in practice, so that it can support transformative action in many more cities to follow.

The rest of this document sets out the four lenses of The Amsterdam City Doughnut. These lenses were created in collaboration with a wide range of city staff, whose expertise generated valuable insights along with access to the most recent and relevant city data. The result is a holistic snapshot of the city, not a comprehensive assessment, and is intended for use in big-picture thinking, co-creative innovation, and systemic transformation, rather than simply as a report.

# WHAT WOULD IT MEAN FOR THE PEOPLE OF AMSTERDAM TO THRIVE?

**Who can say what it means for the people of a city to thrive? The best answer surely comes from the people themselves – based on their local context, aspirations, culture, and values. This lens draws on the City of Amsterdam’s existing targets, as the most current expression of the city’s aspiration for its residents’ wellbeing.**

The many components of wellbeing are clustered into four areas, including being:

- healthy: with food, water, health, housing
- enabled: with education, energy, income and employment
- connected: through mobility, community, digital connectivity, and culture
- empowered: through social equity, political voice, equality in diversity, and peace and justice

The City’s targets in each of these areas are accompanied by illustrative statistics that give a snapshot of the city’s current status, based on data drawn from official city sources.

One illustrative statistic evidently cannot do justice to the full diversity and complexity of city life, nor to the richness (or absence) of data available, such as in the annual State of the City report.<sup>6</sup> The data included here are chosen because they highlight pertinent aspects of city life, and can act as conversation starters for deeper reflections on interconnections between the City Portrait’s four lenses.

## Focus on voices of the city

In order to reflect the lived experience of Amsterdam’s residents, City Doughnut Workshops were held in seven diverse neighbourhoods, bringing City staff together with residents to hear their visions and priorities for a thriving Amsterdam. Several valuable insights emerged.

### » Thriving in nature

When asked ‘What makes you thrive?’ the most popular response from participants focused on connecting with nature. Many expressed a desire for fewer cars and more green spaces in the city, in order to improve both their physical and mental health.

‘I hope the City is able to create more green spaces while the city is growing so rapidly. It helps biodiversity and gives the possibility of meeting other Amsterdammers.’ (Zuid and Noord)

### » Housing and social cohesion

Rapidly rising house prices can undermine the social cohesion of neighbourhoods and reduce contact between people of different backgrounds. Participants highlighted the importance of affordable housing for ensuring the wellbeing of all in a diverse city. Such housing protects community-based social networks of care and support, which can be put under stress in neighbourhoods with many transient residents.

‘In our neighbourhood people look out for each other – it’s very lively with a great diversity of cultures. We love festivals where all cultures meet and come together. But the City is not supporting these neighbourhood festivals anymore and they are greatly missed.

We need support from the City to have a place to meet where we can organise social activities, because loneliness is also a big issue here.’ (Zuid-Oost)

‘There is so much speculation going on in the city - basic housing needs should come first’. (Oost)

### » Ensuring a just transition

While the majority of participants supported the City’s plans to reduce the number of cars in the city, some were concerned that measures taken could increase social inequality, with the effects falling hardest on more vulnerable residents. The price and accessibility of public transport are therefore important themes to address to ensure a just and inclusive transition towards a more sustainable urban infrastructure.

‘I like it that more and more attention is being given to public transport’. (Oost)

‘Some Amsterdammers are dependent on their cars – you can’t expect them to change their mode of transport if an alternative isn’t there yet’. (Noord)

### » Citizen-led transformation

Across neighbourhoods, there was a clear and strong wish amongst active citizens and neighbourhood initiatives for the City to give greater recognition to their community networks, along with support for their ability to organise and mobilise effectively at the local scale. There is a clear opportunity for open dialogue between the City and community-based networks over their role in decision-making and bringing about the many transformations needed at the community scale.

‘Don’t decide for us – do it with us and give us co-ownership. We already have so many valuable networks in our neighbourhoods which are well placed to take on the responsibility.’ (West and Zuid-Oost)

# WHAT WOULD IT MEAN FOR THE PEOPLE OF AMSTERDAM TO THRIVE?

	CITY TARGET	CITY SNAPSHOT
<b>HEALTH</b>	All citizens have an equal chance of living a healthy life, regardless of socioeconomic status, or background. <sup>22</sup>	Around 40% of citizens are overweight and almost half (49%) have a moderate-to-high risk of depression or anxiety. <sup>23</sup>
<b>HOUSING</b>	There is sufficient availability of affordable and decent homes. <sup>22</sup>	In 2018, almost 60,000 homeseekers applied online for social housing, while only 12% were successful. Overall, almost 20% of city tenants are unable to cover their basic needs after paying monthly rent. <sup>26,27,28,29</sup>
<b>WATER</b>	Public water is accessible, attractive, clean and safe for all users. <sup>22</sup>	Tap water quality in 2017 was rated well above the legal standard. <sup>25</sup>
<b>FOOD</b>	A target is currently under development	In 2018, over 1,200 households made use of the city's food banks. <sup>24</sup>

## CONNECTIVITY

CITY TARGET	CITY SNAPSHOT
The digital city is designed in collaboration with citizens, and many other city actors. The municipality's interaction with citizens is accessible, understandable and inclusive. <sup>22</sup>	98% of Dutch households had access to the internet in 2017. 13% of Amsterdammers over 19 years old experience severe loneliness. <sup>34,35</sup>

## COMMUNITY

Amsterdam is an inclusive and connected city. <sup>22</sup>	81% of city residents stated that they felt connected to the city in 2017. Residents' ratings of their neighbourhoods ranged from 6.8/10 in Nieuw-West, to 8.1/10 in Zuid. <sup>36</sup>
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## MOBILITY

The city is accessible to everyone via public transport, in a safe and sustainable way. <sup>22</sup>	In 2017, citizens made an average of 665,000 journeys by bike every day, and in 2018 they gave the city's public transport a rating of 7.7 out of 10. <sup>38,39</sup>
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## CULTURE

All citizens and visitors are provided with a high-quality, innovative and diverse cultural offering; and all Amsterdam children become acquainted with art and culture. <sup>22</sup>	In 2017, the City's Kunstenplan introduced a programme of after-school activities in arts and culture, predominantly for children from low-income households. <sup>37</sup>
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	CITY TARGET	CITY SNAPSHOT
<b>PEACE &amp; JUSTICE</b>	Amsterdam is a safe and liveable city for residents and visitors. <sup>22</sup>	In 2017, 25% of citizens were the victim of a crime, and 3% of citizens said they had experienced domestic violence over the past five years. <sup>40,41</sup>
<b>SOCIAL EQUITY</b>	Citizens enjoy greater independence and seldom experience inequality of opportunity. <sup>22</sup>	16% of residents in lower-income neighbourhoods feel they lack control over their lives – higher than the national average of 11%. <sup>42</sup>
<b>POLITICAL VOICE</b>	Citizens have an increased say, involvement and role in deciding what happens and how it gets implemented. <sup>22</sup>	Voter turnout for the 2018 city elections was 52%, compared to 79% for the 2017 national election. <sup>43,44</sup>
<b>EQUALITY IN DIVERSITY</b>	Amsterdam is an inclusive and connected city. <sup>22</sup>	In total, 15% of residents reported experiencing discrimination in 2017: 39% of incidents concerned ethnicity, or skin colour; and 29% concerned nationality. <sup>45</sup>

## JOBS

CITY TARGET	CITY SNAPSHOT
Citizens are provided with attractive commercial facilities throughout Amsterdam, plus entrepreneurs benefit from a good business climate. <sup>22</sup>	Local entrepreneurs gave the city business climate a rating of 6.75 out of 10, in 2017. <sup>30</sup>

## INCOME

Financial (income) security is assured for citizens who cannot (completely) provide for their own livelihoods. <sup>22</sup>	Almost 1 in 5 of all households (18%) qualified to apply for the social benefits scheme due to their low income and savings in 2016. <sup>31</sup>
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## EDUCATION

Every child receives a good education in a high-quality school environment. <sup>22</sup>	In 2019 there were 175 unfilled teaching posts in city schools. <sup>32</sup>
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## ENERGY

Make the city natural gas-free before 2040. <sup>22</sup>	The City is currently working on making 28 neighborhoods become natural-gas free. <sup>35</sup>
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# WHAT WOULD IT MEAN FOR AMSTERDAM TO THRIVE WITHIN ITS NATURAL HABITAT?

**Healthy ecosystems are generous and resilient: they purify the air, cleanse the water, moderate the local climate, cycle nutrients, calm floodwaters, house diverse species, and more – all to keep creating conditions in which life can thrive.**

**What if cities were designed to be as generous and resilient as the ecosystems in which they are located? What if their buildings, greenways, and infrastructure aimed to clean as much air, filter as much water, store as much carbon, and house as much biodiversity as their host habitat does? Doing so would strengthen the health of the whole ecosystem, but also increase the city's resilience to extremes of heat, rainfall, coastal erosion and drought.**

**This lens of the City Portrait explores seven key attributes of a city's surrounding ecosystems, including how they: provide water, regulate air quality, regulate temperature, support biodiversity, protect against erosion, sequester carbon, and harvest energy. These insights provide guidance for how the city can likewise live generously and resiliently within the unique characteristics of its habitat.**

For each of the seven attributes, the lens addresses four questions:

- How does nature thrive here with generosity and resilience?
- How could the city mimic this success, and what is already underway?
- What targets does the city already have in relation to this ambition?
- What is known about the city's current performance?

Amsterdam is based in the Temperate Broadleaf and Mixed Forest biome, which includes forests, but also wetlands, coastal dune formations, and heathlands. This variety of habitats supports rich plant life and a large diversity of birdlife. It also provides many opportunities for understanding how nature thrives here and then exploring how Amsterdam can best echo or mimic nature's generosity and resilience in the very design of the city.

## **Focus on biomimicry in cities**

Biomimicry is innovation inspired by nature.<sup>7</sup> When brought into the context of cities, the principles of biomimicry offer new design strategies and nature-based solutions that can be integrated into existing city plans and initiatives, and in Amsterdam this is already starting to happen.

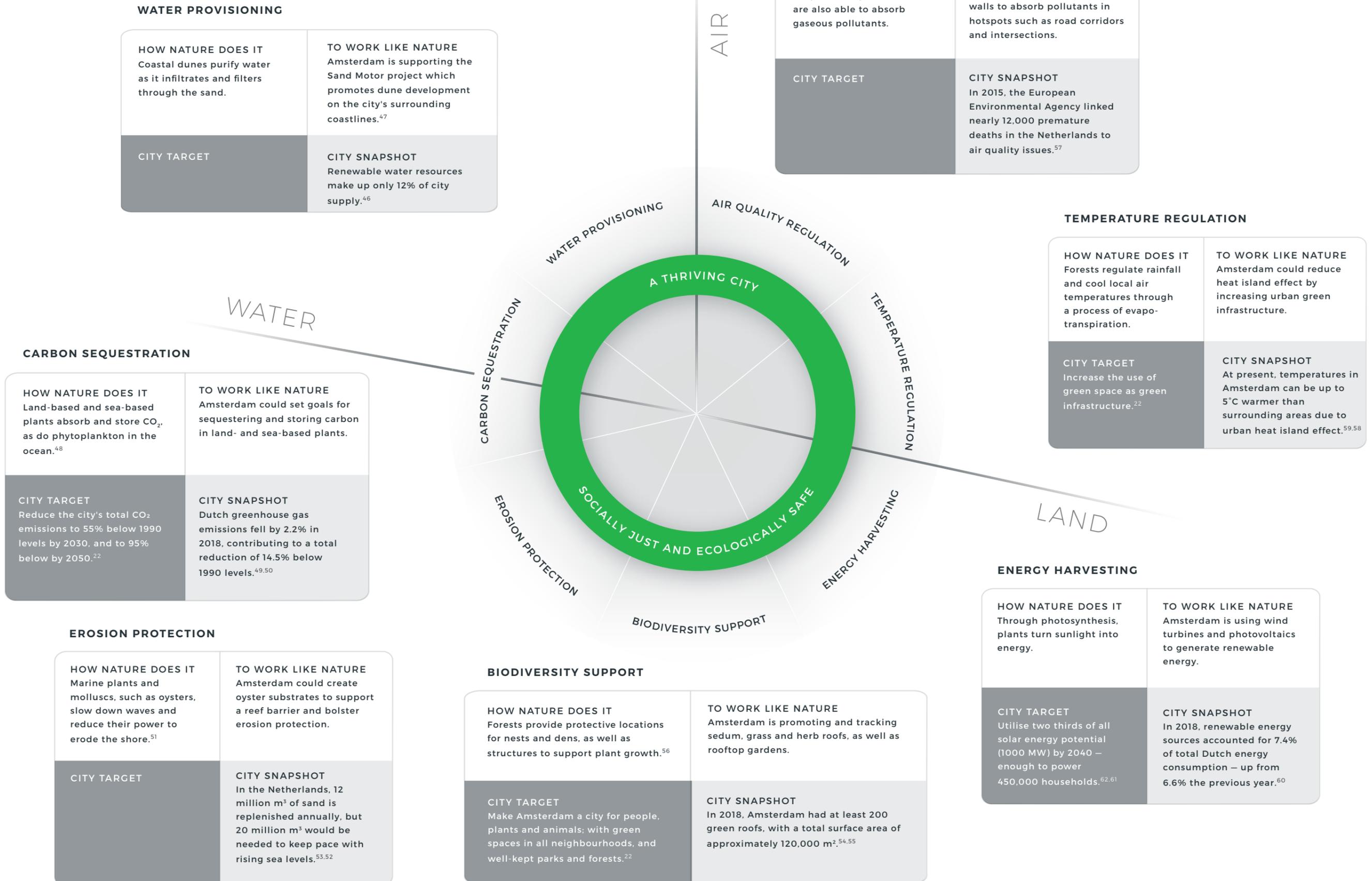
Urban designers in Amsterdam are integrating biomimetic designs into the fabric of their buildings. Some are creating habitats for species directly in the fabric of buildings, such as by using bee-hotel bricks, and ensuring retaining walls include places for nesting birds. Incorporating green roofs and walls additionally helps to connect fragmented habitats, support more native species, and create pollinator corridors.

The City of Amsterdam is likewise taking action to significantly reduce air pollution with its Clean Air Action Plan, expanding the current low-emission zones, culminating in a complete ban on petrol and diesel cars and motorbikes in the city by 2030.<sup>8</sup>

Cities can adopt science-based targets for their ecological performance by taking on the ambition of performing at least as well as a healthy local ecosystem. In the case of the Clean Air Action Plan, for example, this would encourage the City to set goals that match the ability of a nearby thriving forest to capture particles and create clean air.

Creating and pursuing such aspirational, yet science-based goals, could restore a community's sense of purpose, mobilise diverse city stakeholders, and support residents' health and wellbeing – all while dramatically enlivening the design of buildings, hardscapes, and landscapes.

# WHAT WOULD IT MEAN FOR AMSTERDAM TO THRIVE WITHIN ITS NATURAL HABITAT?



## WATER PROVISIONING

<b>HOW NATURE DOES IT</b> Coastal dunes purify water as it infiltrates and filters through the sand.	<b>TO WORK LIKE NATURE</b> Amsterdam is supporting the Sand Motor project which promotes dune development on the city's surrounding coastlines. <sup>47</sup>
<b>CITY TARGET</b>	<b>CITY SNAPSHOT</b> Renewable water resources make up only 12% of city supply. <sup>46</sup>

## AIR QUALITY REGULATION

<b>HOW NATURE DOES IT</b> Leaves can capture ultrafine air-pollutant particles and are also able to absorb gaseous pollutants.	<b>TO WORK LIKE NATURE</b> Amsterdam is experimenting with strategically placed green walls to absorb pollutants in hotspots such as road corridors and intersections.
<b>CITY TARGET</b>	<b>CITY SNAPSHOT</b> In 2015, the European Environmental Agency linked nearly 12,000 premature deaths in the Netherlands to air quality issues. <sup>57</sup>

## TEMPERATURE REGULATION

<b>HOW NATURE DOES IT</b> Forests regulate rainfall and cool local air temperatures through a process of evapo-transpiration.	<b>TO WORK LIKE NATURE</b> Amsterdam could reduce heat island effect by increasing urban green infrastructure.
<b>CITY TARGET</b> Increase the use of green space as green infrastructure. <sup>22</sup>	<b>CITY SNAPSHOT</b> At present, temperatures in Amsterdam can be up to 5°C warmer than surrounding areas due to urban heat island effect. <sup>59,58</sup>

## CARBON SEQUESTRATION

<b>HOW NATURE DOES IT</b> Land-based and sea-based plants absorb and store CO <sub>2</sub> , as do phytoplankton in the ocean. <sup>48</sup>	<b>TO WORK LIKE NATURE</b> Amsterdam could set goals for sequestering and storing carbon in land- and sea-based plants.
<b>CITY TARGET</b> Reduce the city's total CO <sub>2</sub> emissions to 55% below 1990 levels by 2030, and to 95% below by 2050. <sup>22</sup>	<b>CITY SNAPSHOT</b> Dutch greenhouse gas emissions fell by 2.2% in 2018, contributing to a total reduction of 14.5% below 1990 levels. <sup>49,50</sup>

LAND

## ENERGY HARVESTING

<b>HOW NATURE DOES IT</b> Through photosynthesis, plants turn sunlight into energy.	<b>TO WORK LIKE NATURE</b> Amsterdam is using wind turbines and photovoltaics to generate renewable energy.
<b>CITY TARGET</b> Utilise two thirds of all solar energy potential (1000 MW) by 2040 – enough to power 450,000 households. <sup>52,61</sup>	<b>CITY SNAPSHOT</b> In 2018, renewable energy sources accounted for 7.4% of total Dutch energy consumption – up from 6.6% the previous year. <sup>60</sup>

## EROSION PROTECTION

<b>HOW NATURE DOES IT</b> Marine plants and molluscs, such as oysters, slow down waves and reduce their power to erode the shore. <sup>51</sup>	<b>TO WORK LIKE NATURE</b> Amsterdam could create oyster substrates to support a reef barrier and bolster erosion protection.
<b>CITY TARGET</b>	<b>CITY SNAPSHOT</b> In the Netherlands, 12 million m <sup>3</sup> of sand is replenished annually, but 20 million m <sup>3</sup> would be needed to keep pace with rising sea levels. <sup>53,52</sup>

## BIODIVERSITY SUPPORT

<b>HOW NATURE DOES IT</b> Forests provide protective locations for nests and dens, as well as structures to support plant growth. <sup>56</sup>	<b>TO WORK LIKE NATURE</b> Amsterdam is promoting and tracking sedum, grass and herb roofs, as well as rooftop gardens.
<b>CITY TARGET</b> Make Amsterdam a city for people, plants and animals; with green spaces in all neighbourhoods, and well-kept parks and forests. <sup>22</sup>	<b>CITY SNAPSHOT</b> In 2018, Amsterdam had at least 200 green roofs, with a total surface area of approximately 120,000 m <sup>2</sup> . <sup>54,55</sup>

WATER

AIR

A THRIVING CITY

SOCIALLY JUST AND ECOLOGICALLY SAFE

BIODIVERSITY SUPPORT

EROSION PROTECTION

ENERGY HARVESTING

CARBON SEQUESTRATION

TEMPERATURE REGULATION

AIR QUALITY REGULATION

WATER PROVISIONING

# WHAT WOULD IT MEAN FOR AMSTERDAM TO RESPECT THE HEALTH OF THE WHOLE PLANET?

Cities have ecological impacts far beyond their borders, thanks to the intensive resource use inherent in their consumption of products such as food, electronics, clothing, and construction materials.<sup>9</sup> These impacts put pressure on planetary boundaries, and so threaten Earth's critical life-supporting systems, such as a stable climate, healthy oceans, clean air, ample freshwater, and thriving ecosystems.<sup>10</sup>

This lens of the City Portrait shows the extent to which a city is currently overshooting planetary boundaries through its consumption patterns and use of Earth's resources, including:

- resources consumed within the city, such as fossil fuels used by cars and buses, and waste that goes to landfill or is incinerated
- resources used in the manufacture of products that are imported into the city, such as fertiliser, water, land, and fossil fuels that are used worldwide to produce food and clothing on sale in the city

A city that thrives within planetary boundaries is one whose global use of resources stays within the boundaries of the green ring, as shown on the opposite page. The red wedges of overshoot indicate the extent to which the city's resource use is currently exceeding those boundaries – where, for example, 2.1 signifies that the city's pressure on the planet is more than double its share.

City-scale boundaries are currently calculated on a global equal per capita basis, regardless of the city or nation's level of income. Given the historic responsibility of high-income countries for excessive resource use, however, cities in these nations should commit to moving back within planetary boundaries far faster than cities in less wealthy nations.

## Focus on becoming a climate neutral and fully circular city

The City of Amsterdam plans to move towards a circular economy as quickly as possible - and by 2050 at the very latest.<sup>11</sup> To realise a circular economy, a fundamental shift is needed in current approaches to production and consumption, and the City is focusing on strategies in the built environment, consumer goods, and biomass. The Municipality has already adopted various circular programmes, including *Amsterdam Circular: Learning by doing*, and the *Circular Innovation Programme*.<sup>12</sup> Furthermore, by 2050 Amsterdam plans to be a 'Climate Neutral' city and reduce its CO<sub>2</sub> emissions to 95% below 1990 levels, by focusing on buildings, transport, electricity, industry and the port.

## Calculating city-scale pressure on the planet

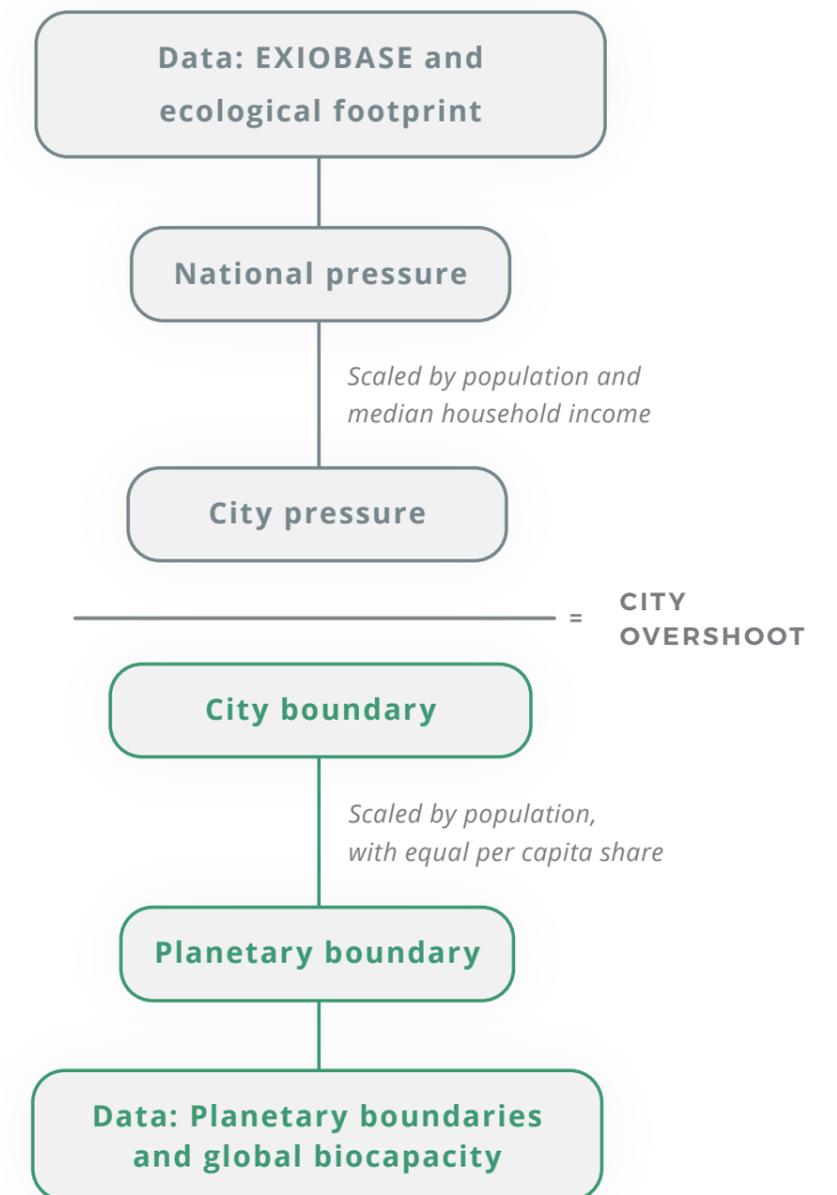
Methodologies for calculating city-scale pressure on planetary boundaries are relatively new, constrained by data availability, but evolving fast. The approach taken here – as illustrated in the diagram below – is to calculate the extent of a city's overshoot of planetary boundaries by comparing that city's permitted share of pressure with its actual pressure.

To calculate the city's permitted share of planetary boundary pressure, the global budget for pressure on each planetary boundary is downscaled to that city's share of the global population, currently on the basis of an equal per capita allocation.

To calculate the city's actual pressure on planetary boundaries, data on national resource use are downscaled to the level of the city, on the basis of that city's share of national population and income.

These calculations take a consumption-based approach to resource use, ascribing ecological impacts to the place of

consumption, rather than the place of production. They are based on a modelling technique known as input-output analysis, which can be used to estimate the total resource use associated with the consumption of goods that have been produced worldwide. Where appropriate, the modelled results are supplemented with city-level data, such as for non-circular waste.



# WHAT WOULD IT MEAN FOR AMSTERDAM TO RESPECT THE HEALTH OF THE WHOLE PLANET?

## OCEAN ACIDIFICATION

### CITY TARGET

Reduce the city's in-boundry CO<sub>2</sub> emissions to 55% below 1990 levels by 2030, and to 95% below by 2050.<sup>22</sup>

CO<sub>2</sub> dissolved in seawater has increased the level of ocean acidity by 30% since the beginning of the Industrial Revolution.<sup>73</sup>

## EXCESSIVE FERTILIZER USE

The Dutch agricultural sector is responsible for 61% of the total amount of nitrogen emissions, mainly caused by fertilizers.<sup>72</sup>

## OVERFISHING

Fish consumption has more than doubled in the Netherlands since 1990, putting the country in the top 25% of fish-consuming nations in the world.<sup>70,71</sup>

## FRESHWATER WITHDRAWALS

The Netherlands has the highest water footprint in Europe, with almost 90% of total water consumption embedded in imports such as meat, cotton and food.<sup>67,68,69</sup>

## EXCESSIVE LAND USE

The amount of land required worldwide for Dutch consumption in 2013 was around two and a half times the area of the Netherlands.<sup>63,64</sup>

## CLIMATE CHANGE

### CITY TARGET

Reduce the city's in-boundry CO<sub>2</sub> emissions to 55% below 1990 levels by 2030, and to 95% below by 2050.<sup>22</sup>

In 2017, Amsterdam's in-boundry CO<sub>2</sub> emissions were 31% above 1990 levels. Furthermore, 63% of the city's total CO<sub>2</sub> emissions are produced beyond city boundaries, embedded in the building materials, food and consumer products that the city imports.<sup>74,75</sup>

## AIR POLLUTION

50-60% of air pollution in China is associated with products and services that are exported to other countries including the Netherlands.<sup>76</sup>

## OZONE-LAYER DEPLETION

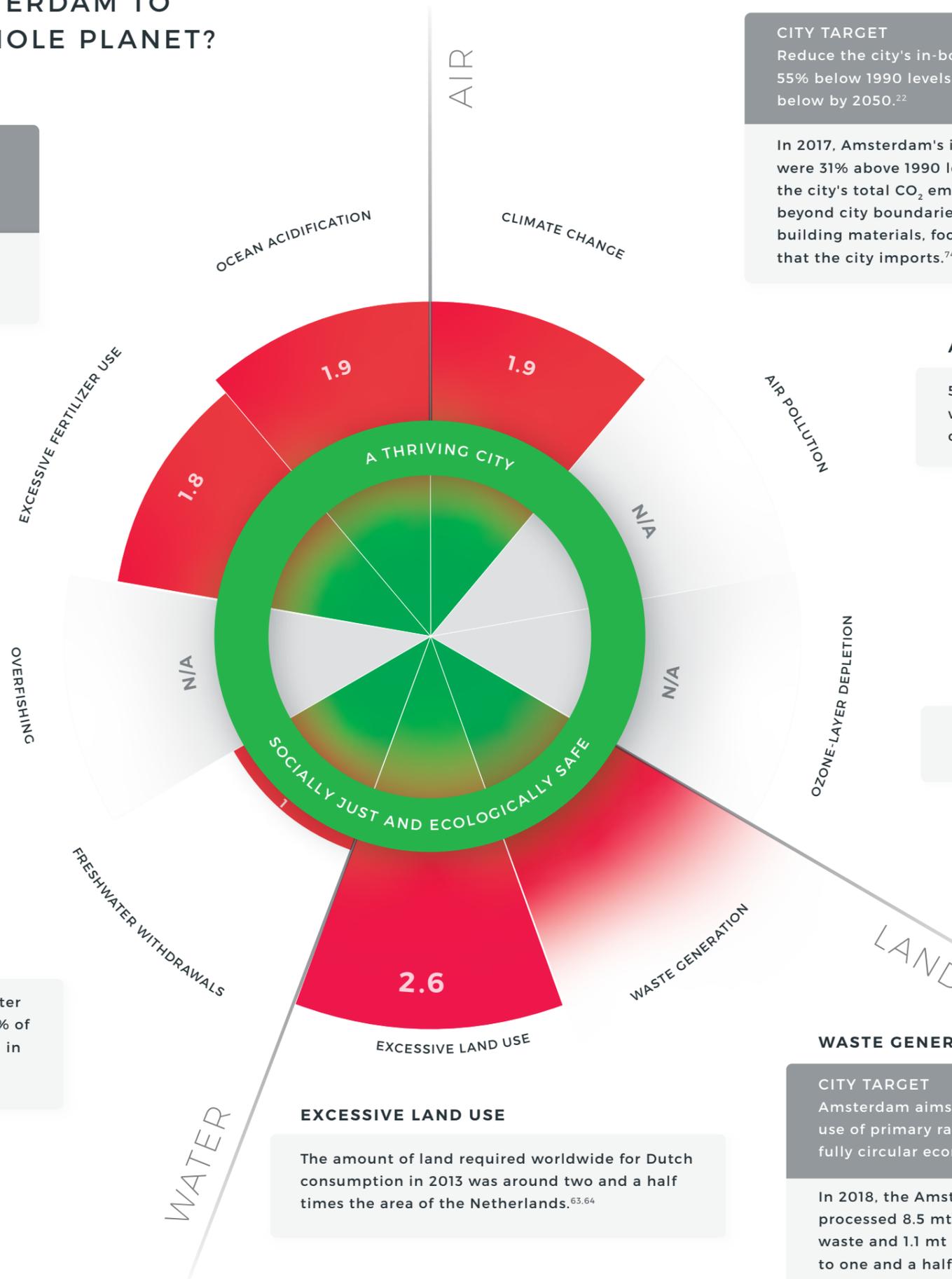
Since 1986, global use of ozone-depleting substances has declined by over 90%.<sup>77</sup>

## WASTE GENERATION

### CITY TARGET

Amsterdam aims to have a 50% reduction in the use of primary raw materials by 2030, and be a fully circular economy by 2050.<sup>66</sup>

In 2018, the Amsterdam Metropolitan Area processed 8.5 mt of industrial and commercial waste and 1.1 mt of household waste - equivalent to one and a half Egyptian Pyramids.<sup>65</sup>



# WHAT WOULD IT MEAN FOR AMSTERDAM TO RESPECT THE WELLBEING OF PEOPLE WORLDWIDE?

**Cities have many impacts, positive and negative, on the wellbeing of people worldwide – through their purchases and remittances, their investments and innovations, their educational opportunities and cultural influence. Given the global ecological impacts of cities’ consumption patterns, this lens focuses on the wellbeing of people who produce the goods that are purchased by city institutions, businesses, civic organisations and households. These purchases support the jobs of millions of people worldwide, but those jobs too often entail exploitative working conditions.**

**All of the data and examples included in this lens are drawn from publicly available research on labour conditions in the food, clothing and electronics supply chains of products and recognised brand names that are on sale in Amsterdam, as in other cities worldwide.**

**The reality of these labour conditions stands in marked contrast to the Sustainable Development Goals, which are commitments to the wellbeing of all people, agreed to by the world’s governments.**

## **Focus on Amsterdam’s purchasing and procurement**

Amsterdam, like cities worldwide, is connected to complex global supply chains, through myriad purchases. In addition, The Port of Amsterdam is one of Western Europe’s top five sea ports and is, for example, the world’s single largest importer of cocoa beans, mostly from West Africa.<sup>13</sup> The labour conditions for people employed in these diverse global supply chains are often exploitative, undermining their rights and wellbeing.

In response to this harsh reality, however, Amsterdam is also home to some of the most innovative companies that have been set up precisely to reverse this situation by doing business in ways that respect the wellbeing of people worldwide. Such initiatives include:

- Tony’s Chocolonely, a chocolate company aiming to eliminate modern slavery from cocoa production through open and transparent supply chains.<sup>14</sup>
- Moyee Coffee, a speciality coffee company promoting ‘fair chain’ production that retains far more of the value created in the countries of origin.<sup>15</sup>
- Fairphone, a smart-phone manufacturer dedicated to responsibly sourcing raw materials that do not involve dangerous working conditions or child labour.<sup>16</sup>

The city is also home to many committed civic organisations working to transform the situation, including:

- The Clean Clothes Campaign, a global network working for 30 years to ensure that workers fundamental rights are respected in the global garment trade.<sup>17</sup>
- Fairfood, a solution-oriented NGO using blockchain among other technologies to bring transparency to global food supply chains and ensure living wages and incomes for those employed within them.<sup>18</sup>
- Fashion for Good, a global platform for innovation, aiming to make all fashion good, by sparking and scaling innovation and bringing the whole industry together.<sup>19</sup>

Companies and campaigns such as these play a key role in raising awareness amongst the public and in offering ethical alternatives to shoppers. Most crucially, they begin to create a new ecosystem of enterprises, demonstrating that a different economy – instilled with social and ecological values – is possible.

The Municipality of Amsterdam is also incorporating concern over global labour conditions into its own procurement practices. In 2016, the Municipality – as a major institutional purchaser in the city – adopted city-specific responsible procurement guidelines (the Maatschappelijk Verantwoord Opdrachtgeven en Inkopen, or MVOI). These procurement guidelines are based on the City’s social and ecological targets, along with municipal programmes on ‘social rates of return’, the sustainability agenda, and the circular economy.

The MVOI includes, among other policies, guidelines on International Social Conditions (ISC) that focus on labour standards related to products procured by the City through global supply chains. The Municipality intends to integrate these ISC guidelines into its procurement strategy, and recently used them to procure natural stone, uniforms and work gear for City employees, and electronics hardware for City IT departments. These responsible procurement practices, however, are not yet fully integrated into City processes, nor are they being officially monitored, and so are not yet reflected in this lens of the portrait.

# WHAT WOULD IT MEAN FOR AMSTERDAM TO RESPECT THE WELLBEING OF PEOPLE WORLDWIDE?

## HEALTH

**GLOBAL TARGET / SDG 3**  
Ensure healthy lives and promote well-being for all at all ages.<sup>4</sup>

**GLOBAL STATUS**  
Dangerous working conditions often lead to:

- accidents and injuries
- long-term health problems
- raised suicide rates<sup>78</sup>

ELECTRONICS

"We all have problems with our lungs and pain all over our bodies"  
- female cobalt miner, the Democratic Republic of the Congo<sup>78</sup>

## FOOD

**GLOBAL TARGET / SDG 2**  
End hunger, achieve food security and improve nutrition.<sup>4</sup>

**GLOBAL STATUS**  
Malnutrition is often prevalent amongs vulnerable factory workers, due to low wages and excessive hours of work.<sup>79,80</sup>

TEXTILES

"Our salary is so low that I can't afford the food in the factory canteen - even that is out of my reach." - Garment worker, Cambodia<sup>81</sup>

## CULTURE

**GLOBAL TARGET / SDG 11,4**  
Strengthen efforts to protect and safeguard the world's cultural and natural heritage.<sup>4</sup>

**GLOBAL STATUS**  
Globalisation can inspire innovation worldwide but it can also undermine the diversity of local identities and cultures.<sup>89</sup>

In East Africa, the influx of cheap second-hand clothing exported by Western countries both damages local craft industries and undermines regional textile markets.<sup>88</sup>

## COMMUNITY

**GLOBAL TARGET / SDG 12.4**  
By 2020 achieve the environmentally sound management of chemicals and all wastes . . . and significantly reduce their release to air, water and soil in order to minimize their adverse impacts on human health and the environment.<sup>4</sup>

**GLOBAL STATUS**  
Industrial activity often contaminates the soil, air and water resources of surrounding communities.<sup>85,86</sup>

FOOD

In Paraguay, some large soybean farms have been in violent conflict with local communities over land use, sometimes resulting in arrests and even death.<sup>87</sup>

ELECTRONICS

"Mining for lithium so that people in other countries can switch to the electric car will kill our communities and our landscapes."  
- Indigenous leader, Argentina<sup>85,86</sup>



## PEACE & JUSTICE

**GLOBAL TARGET / SDG 16**  
Promote peaceful and inclusive societies for sustainable development, access to justice for all, and effective, accountable and inclusive institutions at all levels.<sup>4</sup>

**GLOBAL STATUS**  
Workers in poorly regulated global supply chains can face forced labour, intimidation and violence.<sup>90,91</sup>

FOOD ELECTRONICS

In 2016, 12 of the 13 major mines in the eastern Democratic Republic of Congo were controlled by armed groups.<sup>90</sup>

In Thailand's seafood industry, migrant workers face violence, trafficking and modern-day slavery.<sup>91</sup>

## EQUALITY IN DIVERSITY

**GLOBAL TARGET / SDG 5**  
Achieve gender equality and empower all women and girls.<sup>4</sup>

**GLOBAL STATUS**  
Employers often exploit the vulnerability of marginalised communities.<sup>95</sup>

TEXTILES

In Asia, female garment workers often face forced overtime, sexual harassment and being fired if pregnant.<sup>92,93,94</sup>

## EDUCATION

**GLOBAL TARGET / SDG 4**  
Ensure inclusive and equitable quality education and promote lifelong learning opportunities.<sup>4</sup>

**GLOBAL STATUS**  
The use of child labour in industrial and agricultural supply chains very often undermines children's education.

ELECTRONICS

In the Democratic Republic of Congo, children work 12-hour days for \$1-2, carrying sacks of cobalt - a mineral used to make batteries for mobile phones.<sup>84</sup>

## JOBS

**GLOBAL TARGET / SDG 8**  
Promote full and productive employment and decent work for all.<sup>4</sup>

**GLOBAL STATUS**  
Globalization has created job opportunities for millions of workers. However, these jobs often entail:

- forced overtime
- insecure contracts
- stressful conditions
- restrictions on unions<sup>82,83</sup>

FOOD

In Ghana, more than 3,500 workers on cocoa plantations are engaged under conditions of forced labour.<sup>82</sup>

# THE CITY PORTRAIT AS A TRANSFORMATIVE TOOL

The City Portrait is a tool – a starting point for new ways of thinking, shared inspiration and transformative action towards becoming a city that thrives for people and planet, locally and globally.

Its potential as a transformative tool will be best realised when put into practice:

- by a network of changemakers, bringing government, business and academia together with innovators from SMEs, start-ups, the commons, and community networks
- on multiple levels, connecting analysis and action from the global level to the city through to the neighbourhood and household
- using a wide range of tools and methods that continually evolve through innovation and learning
- as an iterative cycle of co-creation, instigating new action, and amplifying what's already working
- in the spirit of the Doughnut principles for practice (see p. 18)

## CREATING THRIVING CITIES a transformative approach

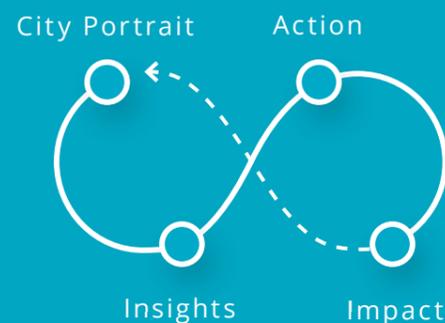
### LEVELS OF ANALYSIS



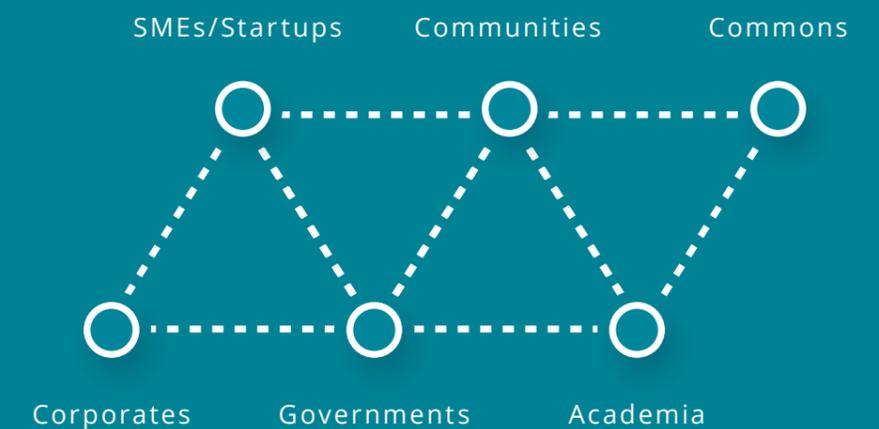
### TOOLS AND METHODS



### CYCLE OF CO-CREATION



### NETWORK OF CHANGEMAKERS





City portrait workshops taking place in Portland and Philadelphia, as part of the Thriving Cities Initiative.

Amsterdam is ideally positioned to build on its existing ambition and use this tool for transformative action, in order to become a thriving city across all four of the lenses. The city is home to a dynamic network of city changemakers already finding innovative ways to put Doughnut thinking into practice.

- The Amsterdam Doughnut Coalition, formed in December 2019, brings together over 20 organisations that already use Doughnut thinking in their work, ranging from design agencies and neighbourhood initiatives to universities, think-and-do tanks, social enterprises and the Municipality (see image on p.19).
- The City of Amsterdam, in collaboration with Circle Economy and diverse city stakeholders, have produced the Circular Amsterdam Roadmap 2020-25, employing the global Doughnut to assess and select 17 circular directions for city action.
- The concept of ‘Doughnut Deals’ was invented in the neighbourhood of Bijlmer in 2019, to recognise community-based projects that help bring the city into the Doughnut from both sides, by creating social and ecological benefits.
- We Make the City 2020 plans to include a celebration of these Doughnut Deals as they emerge and the concept spreads across the city.
- The Amsterdam University of Applied Sciences has invited Kate Raworth to become its first Professor of Practice, and to create a transdisciplinary initiative with HvA students over the coming three years.
- The ‘Amsterdam Approach’ to collaborative innovation is exemplary for open co-creation, involving citizens’ networks, start-ups, SMEs and civil society alongside government, business and knowledge institutions.<sup>20</sup>

This city, more than any other, is ready to demonstrate what can be achieved when a holistic tool for co-creation is shared within a network of highly effective changemakers, connected by a set of insightful methods and a dynamic process of action and learning. As Amsterdam heads towards celebrating its 750th year in 2025, there could not be a better time for the city to act as an inspirational example of 21<sup>st</sup> century transformation in action.

# FROM PUBLIC POTRAIT TO CITY SELFIE

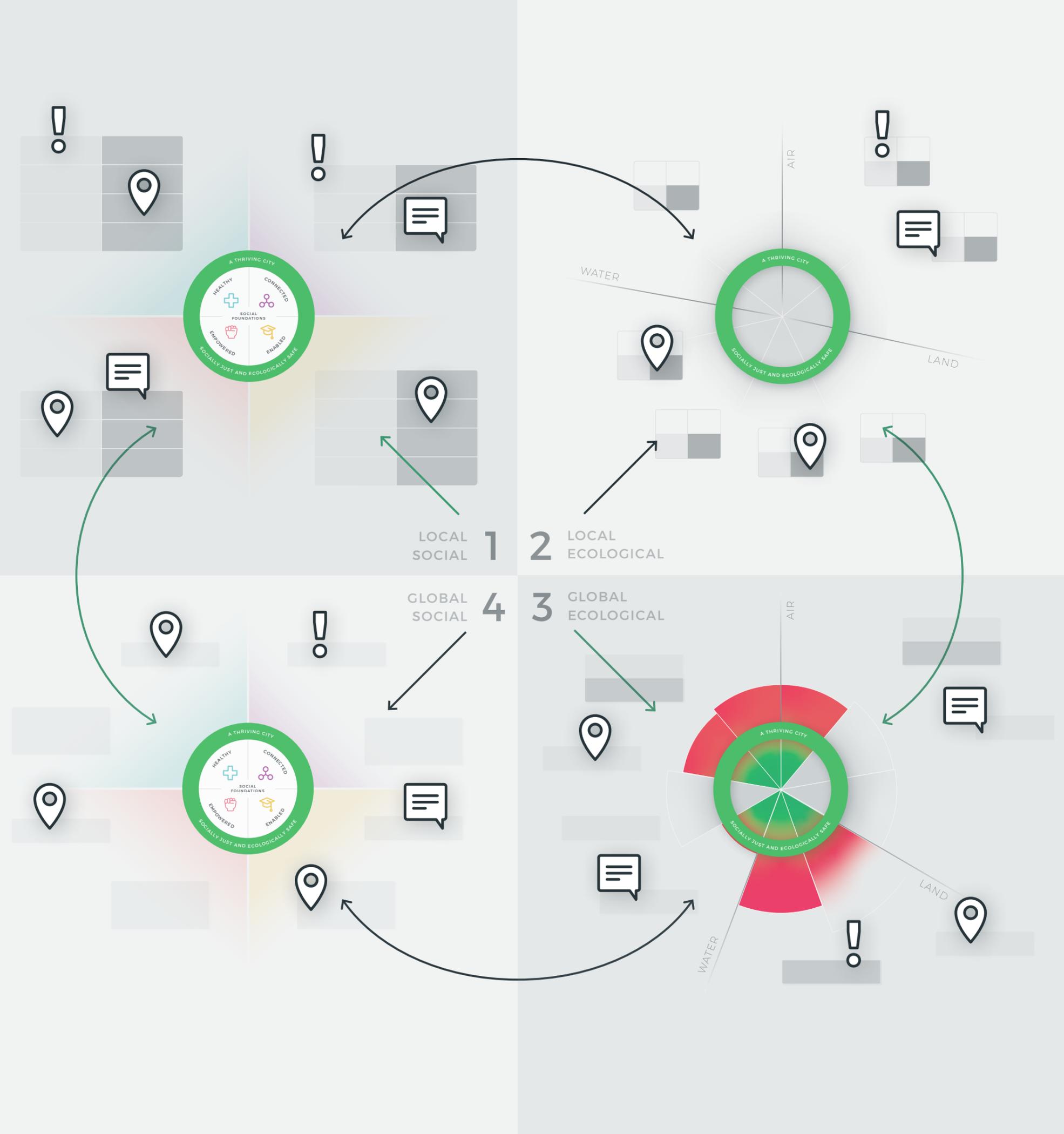
This first version of the Amsterdam City Doughnut has been created based on publicly available data and reports, essentially making it a public portrait of the city.

What if city changemakers were to layer onto it all of the ongoing initiatives that are helping to bring Amsterdam into the Doughnut and make it thrive? In doing so, they would effectively create the first 'City Selfie': a living image of transformations underway, thus helping to make visible the seeds of a thriving Amsterdam that is already emerging.

The ready community of changemakers in Amsterdam can be pioneers of this process, inviting all contributors to bring:

-  existing policies, projects, initiatives and start-ups
-  stories, histories and images from diverse neighbourhoods
-  visions, proposals and new initiatives for transforming the city.

The resulting and unique City Selfie would be a diverse, lively, ever-changing, challenging, but also energising, portrait of a city that is already in transformation.

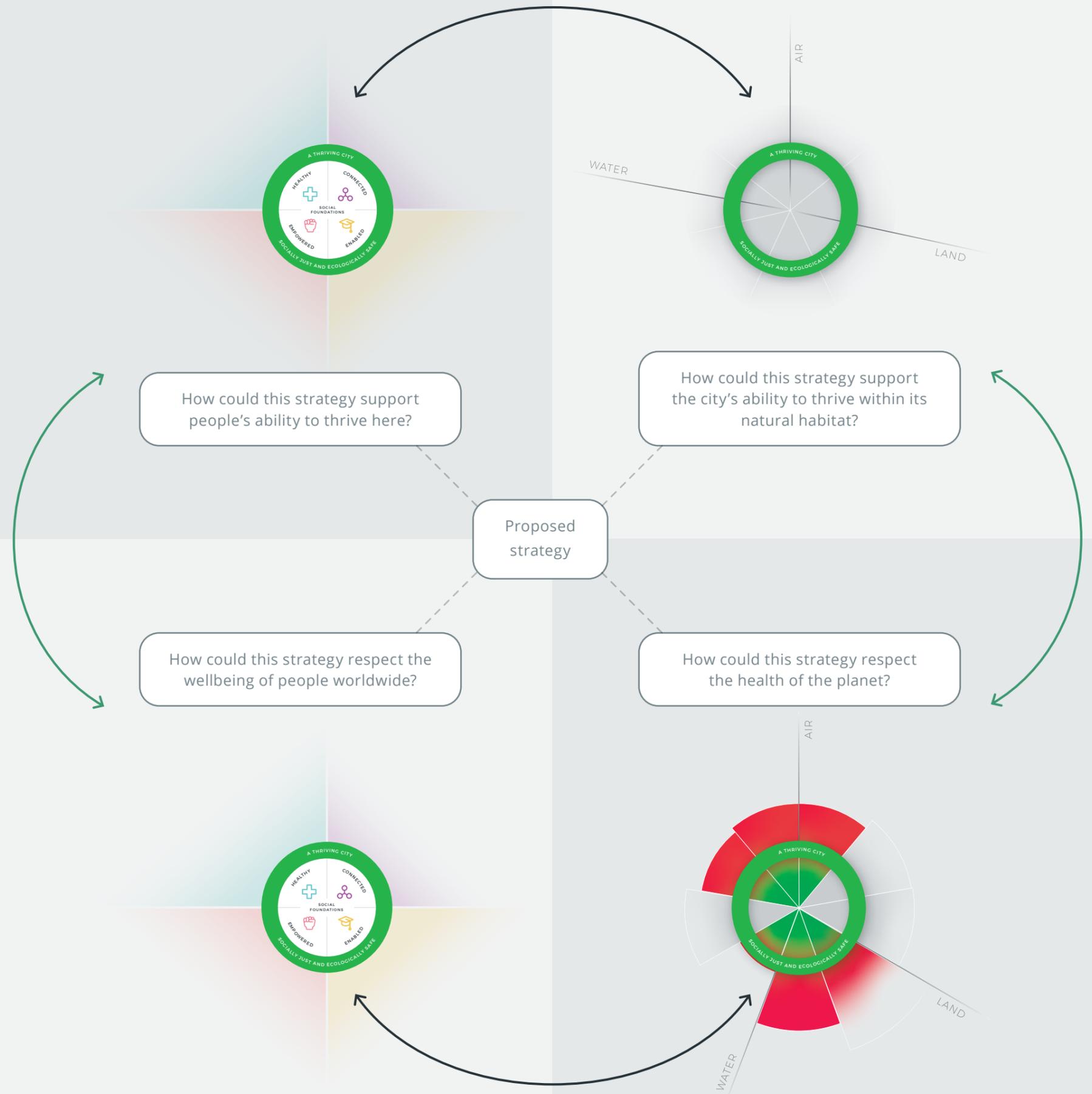


# NEW PERSPECTIVES FOR POLICY DEVELOPMENT AND ANALYSIS

The City Portrait can be used by policymakers and stakeholders as a starting point for reflecting on the opportunities and challenges, synergies and tensions, of alternative policy initiatives under consideration. By taking a holistic perspective on possible actions, they can build the insights gained into the policy design process. If the portrait is first turned into a City Selfie, the interconnections and insights will be even richer.

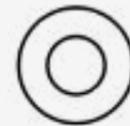
Amsterdam's ambitious approach to circular economy, for example, has implications for every lens of the portrait, and is likewise affected by the interconnections between them. The many possible directions that the circular economy strategy can take can be explored in greater depth through the portrait, including by asking:

- What will be the benefits of the city pursuing this strategy – socially and ecologically, locally and globally?
- Where are the possible synergies between the lenses and what's needed to unleash them?
- What tensions might arise as a result of city action across the different lenses? How might they best be resolved?
- What changes are needed in city norms and city-wide systems, along with changes in the predominant values and behaviour of city residents?
- How can the city's diverse network of changemakers create synergy between their existing initiatives and collaborate
- What kinds of changes are needed within the City's own organisation in order to address the interlinkages of social and ecological issues and solutions?



# PRINCIPLES FOR PUTTING THE DOUGHNUT INTO PRACTICE

Doughnut Economics Action Lab requests that all projects and initiatives using the Doughnut as a foundational concept be designed and implemented in ways that aim to embody the core principles of *Doughnut Economics*,<sup>21</sup> as set out in these principles.



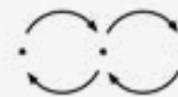
**Embrace the 21<sup>st</sup> century goal.** Aim to meet the needs of all people within the means of the living planet. Seek to align your organisation's purpose, networks, governance, ownership and finance with this goal. Expect the work to be challenging, innovative and transformative.



**See the big picture.** Recognise the potential roles of the household, the commons, the market and the state - and their many synergies - in transforming economies. Ensure that finance serves the work rather than drives it.



**Nurture human nature.** Promote diversity, participation, collaboration and reciprocity. Strengthen community networks and work with a spirit of high trust. Care for the wellbeing of the team.



**Think in systems.** Experiment, learn, adapt, evolve, and aim for continuous improvement. Be alert to dynamic effects, feedback loops and tipping points.



**Be distributive.** Work in the spirit of open design and share the value created with all who co-create it. Be aware of power and seek to redistribute it to improve equity amongst stakeholders.



**Be regenerative.** Aim to work with and within the cycles of the living world. Be a sharer, repairer, regenerator, steward. Reduce travel, minimize flights, be climate and energy smart.



**Aim to thrive rather than to grow.** Don't let growth become a goal in itself. Know when to let the work spread out via others rather than scale up in size.



*The launch of the Amsterdam Doughnut Coalition,  
December 2019*

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**Doughnut Economics Action Lab** works with innovative practitioners to turn the ideas of Doughnut Economics into transformational tools and practice, so that people and planet can thrive.

**Biomimicry 3.8** is the world's leading bio-inspired consultancy, empowering changemakers with 3.8 billion years of research and development in nature to create more resilient and life-friendly products, processes, facilities, and communities.

**Circle Economy** aims to empower a global community of businesses, cities and governments to accelerate the transition to a circular economy through practical and scalable insights and solutions that address humanity's greatest challenges.

**C40 Cities** works with over 90 of the world's largest cities to drive meaningful and measurable action on climate change, on the scale required to limit global heating within 1.5°C.

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