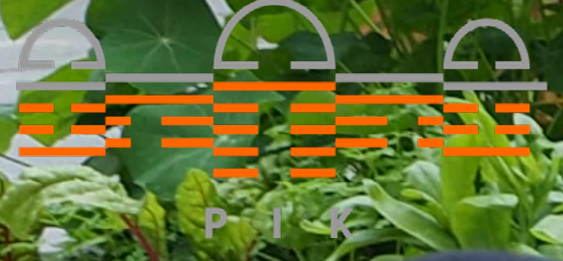




EAT



Gehl



UNIVERSITY OF COPENHAGEN



Shifting Urban Diets: Lessons from Copenhagen

This report summarizes the Shifting Urban Diets project, which translated global food systems science to the city context and piloted a series of methods in the City of Copenhagen. The report follows a final dissemination event for the project, which took place in Copenhagen and online in November 2021.

April 2022



Healthy & sustainable food consumption in cities

The complexity of planning, designing and governing cities is endless. Urban planners and city officials worldwide are increasingly using a systems approach to shape the services people depend on.

Cities, both contributors to health and climate crises and dynamic sources of innovation and community, are strong catalysts for change. In our rapidly urbanizing world, how we manage urban food systems is critical. City actors, from municipal authorities to retailers and local organizations, face the huge test of ensuring that healthy, tasty, and sustainable food is accessible to all residents.

In the Nordic region, cities are working to apply an **integrated food systems approach to improve the health of their population and reduce their climate footprint.**

Three Nordic capital cities – Copenhagen, Oslo, and Stockholm – have signed the [C40 Good Food Cities Declaration](#), setting ambitious targets for achieving a Planetary Health Diet for all by 2030.

Other municipalities, such as Gothenburg and Södertälje in Sweden, have been working to improve their food procurement practices and citizen engagement mechanisms, among other activities.



Lejre, Denmark, © Lejre Kommune

About EAT's 'Cities and Urban Diets' work

EAT works to support cities and urban areas adopt food system solutions that will help address their most pressing challenges, while enhancing climate resilience, reducing environmental impact, and improving health equity. EAT's Cities and Urban Diets program aims to make healthy and sustainable food the default choice for all city dwellers.

Today, over half the world's population lives in urban areas, expected to increase to 68% by 2050.¹ Achieving a global food systems transformation will depend on shaping healthy and sustainable food consumption patterns in cities and towns.

EAT's cities-oriented projects are informed by and aligned with the EAT-Lancet Commission's recommendations for a Planetary Health Diet. EAT's existing cities work supports a range of activities including the global Food Systems Network delivered in partnership with C40 Cities; high-level international engagements following the UN Food Systems Summit; EU projects addressing citizen-driven innovation and integrated policy approaches (FoodSHIFT 2030 and Food Trails, respectively); and city-specific science translation and technical assistance, following our work with Copenhagen in our Shifting Urban Diets project (2019-2021).

¹ United Nations, Department of Economic and Social Affairs, Population Division (2019). World Population Prospects 2019: Highlights (ST/ESA/SER.A/423)

Methods to help achieve cities' climate targets

Three methods were developed and tested to understand the impact from food consumption on climate targets in Copenhagen, and to support a shift in urban diets towards improved health and sustainability:

- 1. Establishing a science-based target for the greenhouse gas emissions of a city's food consumption**, enabling cities to align actions with sustainability goals and measure progress
- 2. Steps to create healthy food environments** through public space interventions, based on how physical environments influence food-consumption behaviors
- 3. Guidance for kitchen staff and chefs** to deliver a Planetary Health Diet in schools

The three approaches are detailed in the following pages.

About the Shifting Urban Diets project

Copenhagen aims to be a world-leading green and livable city with easily accessible healthy and sustainable food, but like other cities, faces challenges to systematically address interrelated health and sustainability issues.

"Shifting Urban Diets: Operationalizing Food System Targets for Health and Sustainability" worked with the City of Copenhagen and partners to translate the findings of the EAT-Lancet Commission on Food, Planet, Health into local action and interventions. Copenhageners are currently consuming 1.4 tons CO₂-equivalents per year over what the EAT-Lancet Planetary Health Diet prescribes. Under the umbrella of the 2019 Food Strategy, Copenhagen is working towards reducing its food-related greenhouse gas (GHG) emissions by 25% by 2025, decreasing food waste, and serving 90% organic food in public kitchens. Copenhagen has approximately 900 public kitchens, which provide around 70,000 meals each day, of which 10,000 are in schools. There is potential for these public meals to be healthier and more sustainable, setting the trend for a Planetary Health Diet in the city and helping achieve the city's food-related goals.

The three-year project (2019-2021), co-funded by EIT Climate-KIC, worked to demonstrate how scientific targets for food systems can be implemented at a city scale, with Copenhagen as a prototype and other cities consulted throughout.

The project was organized in four main workstreams. The Potsdam Institute for Climate Impact Research (PIK), University of Copenhagen, and World Resources Institute (WRI) established a baseline and science-based target for the GHG emissions of Copenhagen's food system. Meanwhile, urban design and research firm Gehl focused on understanding how neighborhood-level food environments influence young people's food choices. In parallel, City of Copenhagen trained kitchen staff and supported public kitchens to prepare healthy and sustainable school meals that align with the EAT-Lancet recommendations. Pulling these strands together, EAT worked to disseminate the methods developed in the project across the science, policy, and business communities.

With this project, City of Copenhagen is one of the first cities to put global consensus on food systems for sustainability, climate, and health into action, as demonstrated in 2019 upon signing the Good Food Cities Declaration. EAT is now working to scale and replicate elements of the project in other city contexts.

Project partners included: EAT, City of Copenhagen, PIK, WRI, University of Copenhagen, Gehl, and City University of London

1. Science Based Targets

Science-based targets (SBTs) are environmental targets that allow actors to align their practices with sustainability goals and the limits that define the stability of earth systems.¹

Shifting Urban Diets worked to establish an SBT for **Copenhagen’s GHG footprint from food**, its ‘foodprint’. The city’s foodprint reflected food consumption in the city as a whole – not simply from publicly procured food consumed in public institutions such as schools, hospitals, elderly homes.

The SBT method developed in this project describes a city’s current foodprint, **illustrates the emission reductions needed to achieve a target in line with global scientific targets for healthy diets from sustainable food production systems**, and which food groups have the greatest impact on the city’s emissions.

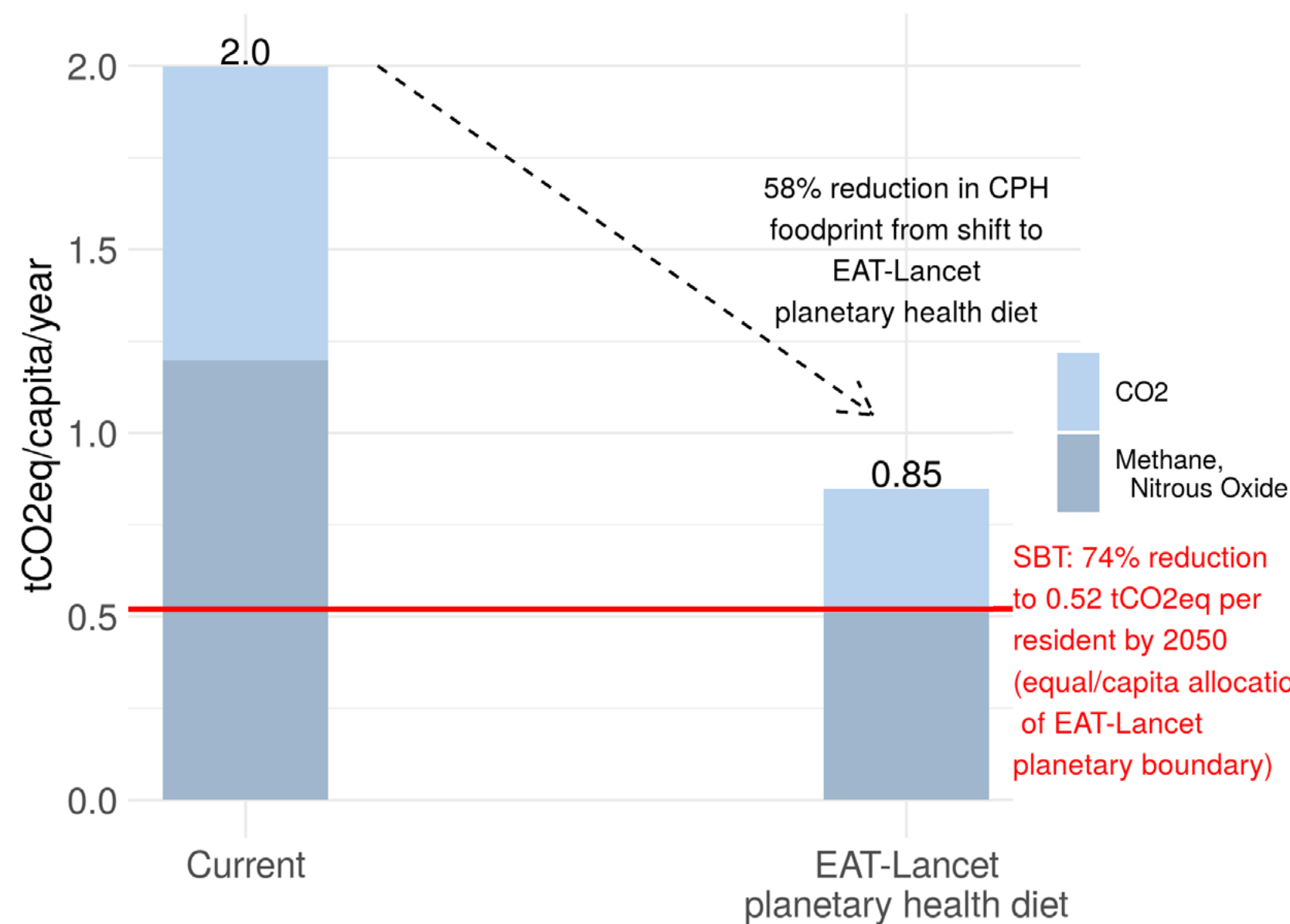
To estimate Copenhagen’s current foodprint, data on 60 food categories was obtained from Food and Agriculture Organization Statistics Food Balance Sheets for Denmark and downscaled to the capital city. The food consumption data was multiplied by emission factors to estimate per capita emissions using life-cycle analysis (LCA) methodology.

If all Copenhagen residents shifted their diet to the EAT-Lancet Planetary Health Diet, the current foodprint would decrease by 58%. This project’s research found that a full shift to the EAT-Lancet Planetary Health Diet in Copenhagen by 2050 would likely achieve the SBT.²

¹ SBTN. 2020. Science-Based Targets for Nature: Initial Guidance for Business
² Based on the EAT-Lancet Commission on Healthy Diets From Sustainable Food Systems (2019) underlying assumption that the world decarbonize the global energy system by 2050.

This is a very ambitious target; in order to achieve it, any future food strategies in Copenhagen must address the GHG footprint of food from household consumption (from supermarkets, restaurants) in addition to the city’s publicly procured food.

As cities around the world develop food strategies attempting to address both human and planetary health, this work lays a foundation for setting and achieving an SBT. Any city would be able to replicate this work, provided they are able to estimate their own current foodprint.

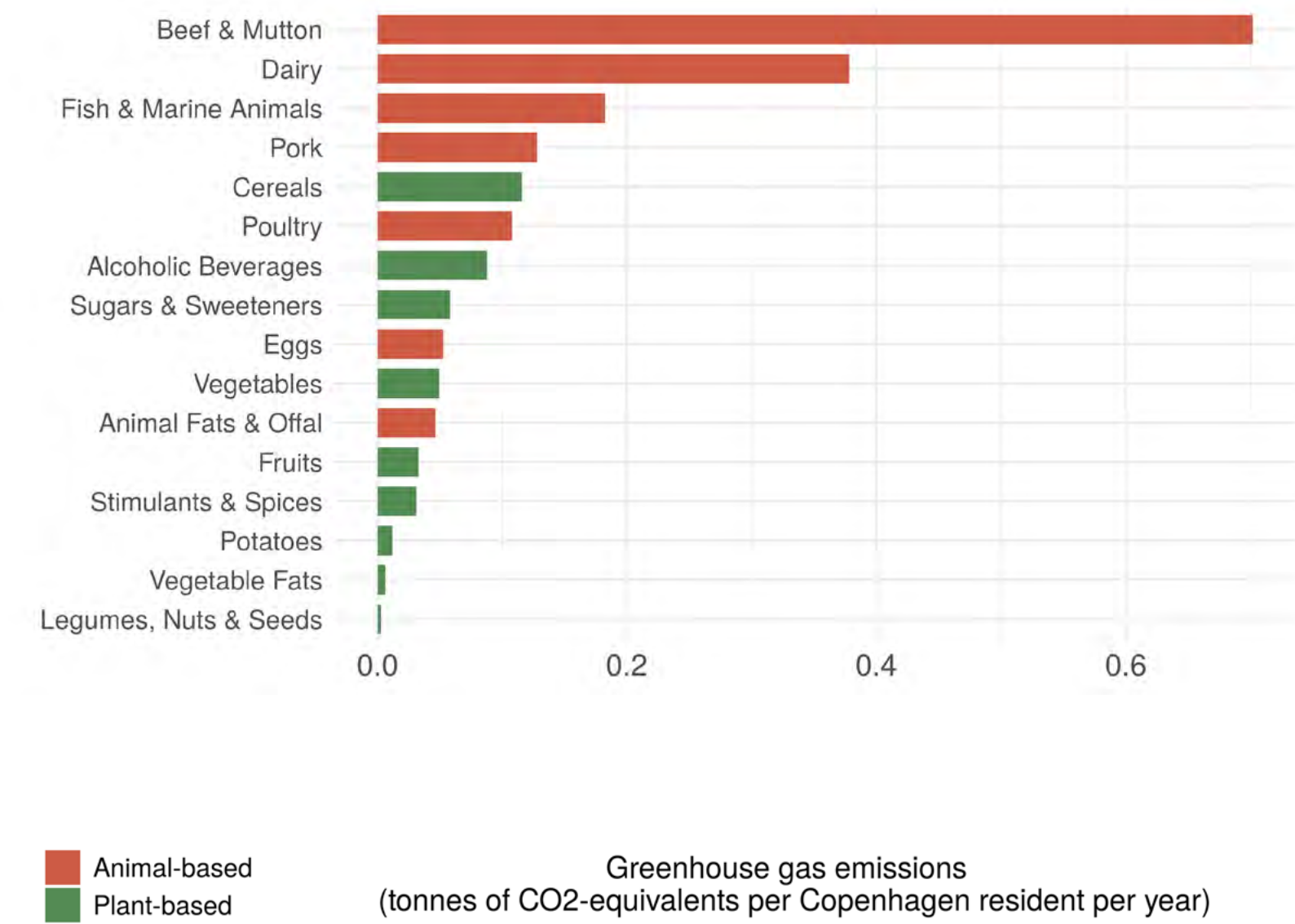


Current and potential tonnes of CO2 equivalent per Copenhagen resident per year from food consumption, ©PIK

To continue supporting cities and other stakeholders to learn from the SBT approach implemented in this project, partners are designing an excel-based tool to compare public procurement (or other city food data) to the EAT-Lancet Planetary Health Diet and are also drafting a scientific publication detailing the methods and learnings in greater depth.

The second two workstreams of the Shifting Urban Diets project provide methods to help achieve the SBT.

The SBT was developed by Potsdam Institute for Climate Impact Research (PIK) and University of Copenhagen.



GHG emissions in tonnes of CO2-equivalents per Copenhagen resident per year by food group, ©PIK

2. Healthy Food Environments

Food environments describe how people interact with their local food system – how they are exposed to, purchase, and consume food. The food environments workstream of the Shifting Urban Diets project consisted of neighborhood-level analyses, mapping the **built environment’s influence on people’s food behavior in public space**, and understanding how this food behavior is influenced by, and has an influence on, public life in the city.

Urban food environments are enmeshed in matters of public health, social life, and the urban environment. However, this holistic perspective is lacking in most accounts of the 21st century food system. The Shifting Urban Diets project explored these interdependencies through an investigation of the relationship between public space, public life, and food behavior (collectively known as the foodscape) in a comparative study of food environments in two neighborhoods in Copenhagen.

This project showcased how the food system, the urban planning process, health outcomes, and the patterns linked to peoples’ everyday behavior are interdependent and integrated, each influencing one another. The project tested and deployed an integrated methodological approach to analyzing and deciphering foodscapes – focusing on youth (young teenagers using the public space in the two case study neighborhoods) and implementing prototype interventions to encourage healthier and more sustainable food behavior amongst this target group.

The results of this research show that there is in fact a close **interdependent relationship between our public spaces, the public life within them, and our food behaviors**. Behavioral patterns, related to food or not, unfold in public space and are influenced and dictated by the quality and programming of that public space (i.e., seating available, the design of furniture and urban elements, the variety, density and affordability of food options, and the signals that those food places send). The design conditions of public space strongly influence how people experience their food environment, and therefore dictates the food chosen by people. Urban designers can help contribute to behavior change toward healthier food consumption at scale.

The Food Environments work in this project was led by Gehl.

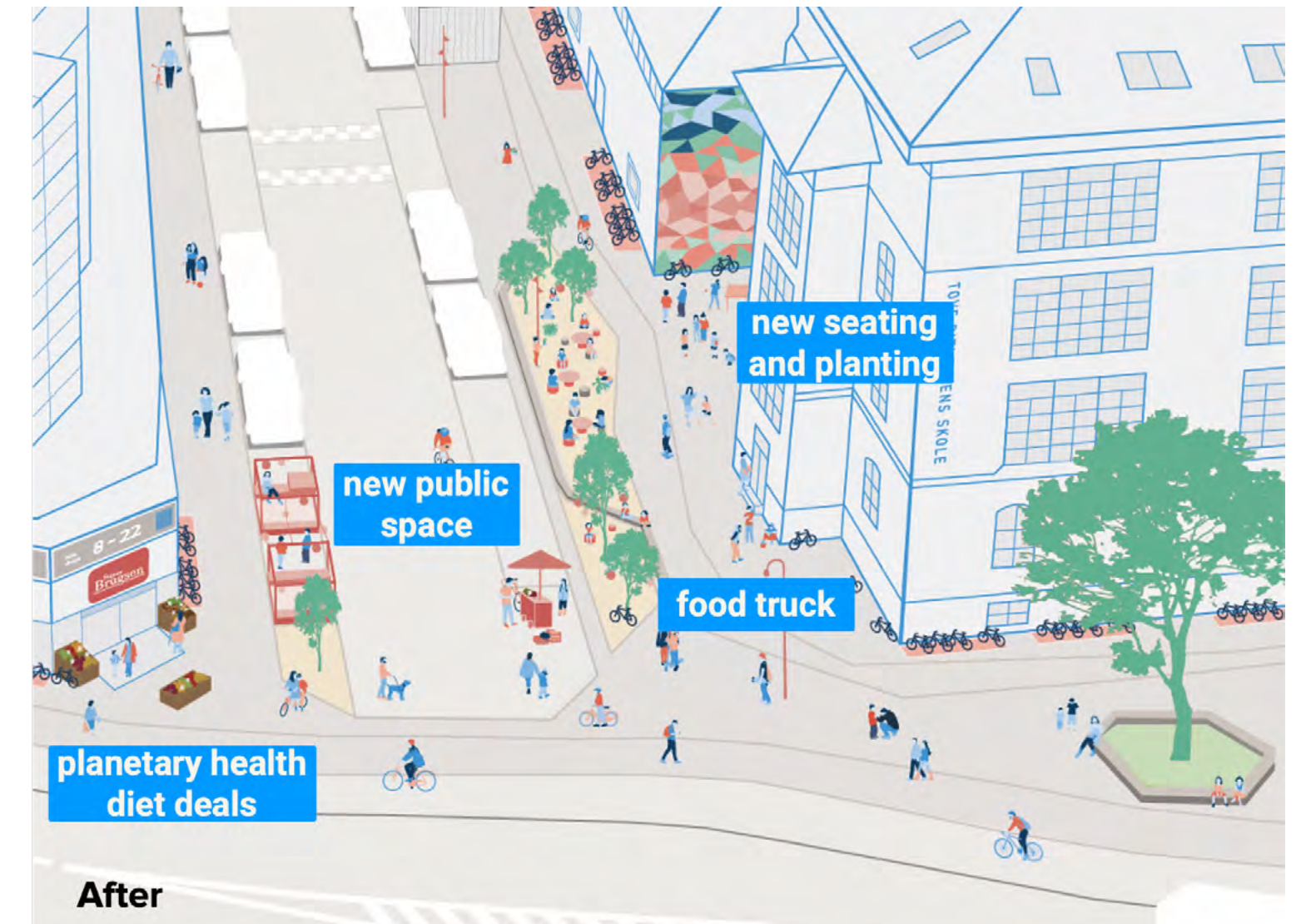


Illustration of a foodscape with interventions to encourage healthier and more sustainable food behavior, ©Gehl



Implementation of prototype interventions in Nørrebro, Copenhagen with seating, edible plants and a food truck offering planetary health diet meals, ©Gehl



GHG emissions in tonnes of CO₂-equivalents per Copenhagen resident per year by food group, ©Gehl

3. Training Kitchen Staff & Climate-Friendly Menus

Shifting diets by making the food in public kitchens (such as schools, elderly homes, and other municipal facilities) healthier and more sustainable can be effective and meaningful. Firstly, the public sector purchases significant quantities of food, so even small shifts in menus can have a substantial impact. Secondly, a daily encounter with flavorful and nutritious meals made from sustainable produce can change people's food taste over time and inspire them to make better food choices at home.

Building new competence amongst kitchen staff in Copenhagen's Food Schools and developing healthy and sustainable menus was one of the methods established to work towards the city's food-related emissions reduction target. Food schools are ordinary public schools that are equipped with a professional kitchen, kitchen staff, and a canteen, where students and teachers can eat together – and where students are involved in meal preparation.

The project activities included analyzing menus and finding potential for modifications, developing new menus that meet the definition of a healthy and sustainable diet, implementing training activities with kitchen staff, and creating guidelines to aid others in this process. This work was developed in tandem with the City of Copenhagen's Food Strategy, which aims to lower GHG emissions from public meals by 25% by 2025, and at the same time strengthen social communities, food culture and food literacy. The project findings show that if the schools implement a diet based on Copenhagen's municipal

guidelines, it is possible to reach the 25% reduction in GHG emissions that the city aims to achieve by 2024. In fact, the target can be reached with a 50% implementation of the new diet: if the diet corresponding with the guidelines was fully implemented, it would be possible to reach a reduction of around 40% of GHG emissions from food.

Lasting change cannot simply involve the kitchen staff but needs to address the whole organization of the school, such as inviting kitchen staff to school meetings and other decision-making fora; showcasing the work by sharing recipes, pictures, and knowledge with parents via social media and communication channels; training teachers to be "food ambassadors" at the lunch table; and better integrating food into the curriculum (for example, featuring local, seasonal vegetables in math or geography lessons).

A recommendation for other municipalities is to better understand what competencies exist within the municipal organization. Most often, the municipality is best suited to create the policy framework (a Food Strategy) and secure adequate resources for operation. To succeed with transforming the public meal system, there needs to be strong professional knowledge on food preparation. Thus, it is very valuable for the city to include an external partner in their efforts to overcome the challenge of building and executing competence-building courses and professional counseling for kitchen staff. Finally, the municipality needs to be realistic about resources allocated to shifting meal production. Experience from Copenhagen shows that

although food costs do not have to rise when transitioning to a more climate-friendly and organic diet, costs to support the operational framework can be substantial. This covers kitchen construction costs, staff training courses, and creating the right social environment for the food to be consumed in.

This project's findings contribute to a better understanding of the role of public kitchens in food systems transformation, with recipes and further guidance available in Danish on the Municipality's dedicated 'Food and Meals' website: www.maaltider.kk.dk.

This work was led by Copenhagen Municipality.



Planetary Health Diet dishes served at C40 World Mayors Summit in Copenhagen, prepared by schools engaged in the Shifting Urban Diets project. ©Mathilde Schmidt, 2019

Gathering Nordic actors to transform food systems

With the Shifting Urban Diets project ending in 2021, EAT and City of Copenhagen convened a hybrid gathering on November 25, 2021: the **Nordic Stakeholders Exchange** celebrated the project's achievements in Copenhagen since 2019, and shared its approaches, methods, results, and learnings with others. The event brought together diverse actors working in food systems transformation in the Nordics and beyond, planting seeds for future collaboration.

The event followed the [2020 kickstart to collaboration](#) among city leaders in the Nordic region, and brought together more than 35 participants representing local authorities in Denmark, Norway, Sweden, and Iceland, as well as multinational food-product corporations, innovation agencies, research institutions, and international organizations, such as WWF-Sweden, Coop Danmark, Danone, Novo Nordisk, Forum Virium, Vinnova, Livsmedelsverket, Stockholm Resilience Centre, and City University of London. Other officials working in close collaboration with Copenhagen through the EU-funded Food Trails project also expressed interest, joining on behalf of Birmingham, Bergamo and Milan.

The workshop agenda and list of participants can be found in Annexes A and B, respectively.

The stakeholder exchange had the following objectives:

- 1. To share final results**, methods and lessons from Copenhagen with other actors interested in adapting or replicating approaches the project developed and implemented.
- 2. To receive input** from participants about the elements that are most helpful, interesting, or replicable in their contexts.
- 3. To assess interest in follow-up initiatives**, to scale these methods beyond Copenhagen.

The exchange was held in a hybrid format, with attendees joining both in Copenhagen and online. First, a presentation from the Shifting Urban Diets team shared the project's journey, methods, and findings. Representatives from Oslo and Gothenburg municipalities also presented their cities' strategic goals and measures towards sustainable food systems, including steps related to climate-friendly school meals and reducing food waste. The event was held in one of the Copenhagen's 16 public "Food Schools," where lunch

is cooked onsite by students and chefs, and where food, meals and sustainability are central values to students and staff.

Two in-person interactive activities followed, corresponding with the project's on-the-ground approaches: one testing a digital tool to **evaluate how public spaces and physical urban environments influence food consumption** behaviors, with urban design firm Gehl; and one on **developing sustainable, healthy and tasty school meals**, with the school's chef and the City of Copenhagen.



Final Shifting Urban Diets event: Nordic Stakeholders Exchange at the Kalvebod Fælled Skole, Copenhagen ©EAT

Testing Gehl's tool for assessing food environments

Participants in this group used a mobile phone application to evaluate the “foodscape” in a public space near the Food School. The app was used to track and collect data on the pedestrian and bicycle traffic passing through the area, identifying gender and age. A questionnaire in the app was also used to evaluate the food retail options in the area, scoring for elements such as ambiance, seating options, how food is ordered, etc.

Gehl described how this app digitalized the types of surveys and data collection that would normally be performed on paper, allowing for easier compilation and comparison of results. This is the tool Gehl uses when conducting food environment work; the results collected from the researchers using the app build an overview of the foodscape in a given area, and the standardized, digitalized approach facilitates comparison against other foodscapes.

Location	Close proximity to where physical activity takes place	Walking distance from home and/or school	Accessible day and night
	Varied seating options for large and small groups	Access to sheltered outdoor spaces	Safe and secure protected from traffic, noise, crime etc.
	Colourful and interesting aesthetic	Ability to take ownership	Ability to be spontaneous active or passive
Offering	Welcoming and accepting staff	Affordable food options	Varied ways to stay opportunity to bring own food, buy to stay or take-away, stay with friends who buy

A checklist made for and with youth to assess food place quality

Checklist developed by Gehl when designing public space for young people, ©Gehl



Youth participate in a workshop to design public spaces, ©Gehl



Youth participate in a workshop to design public spaces, ©Gehl



Youth participate in a workshop to design public spaces, ©Gehl

Visiting Copenhagen's Food Schools

Event participants visited one of Copenhagen's Food Schools' canteens, at Kalvebod Fælled Skole. The Food School is an ordinary public school but equipped with a professional kitchen and kitchen staff. One week at a time, a small group of students aged 10-14 spend their day working as kitchen staff, participating in the daily food preparation, and earning valuable practical experience. By spending time preparing meals from scratch, the students discover new produce, dishes, and flavors.

The way food is served matters. Students working in the kitchen present the meals to their fellow schoolmates, who are more open to eating what their friends have prepared. Alongside health and sustainability, the schools place emphasis on flavor and presentation, having learned that we also eat with our eyes. The dishes are presented differently according to age groups: younger students have separate plates and elements of the meal are not mixed; whereas older students are served "family style" and the eldest have these in take-away boxes.

The chef solicits feedback weekly, using an internal survey and a suggestion box for comments and ideas. The chef also prepares a monthly menu plan, shared with parents ahead of time; this brings parents into the process and reduces food waste, as the number of students is known when purchasing produce.

The chef also plans meals with shared ingredients, so that leftovers can be integrated the next day. Involving students, teachers and parents in meal planning is key to successful development of healthy, tasty and sustainable meals.

The work done in Copenhagen shows that there are many entry points to making fun and fulfilling food experiences at school, providing energy for the rest of the day.



Visit of the Kalvebod Fælled Skole's kitchen with Emil Kiær Lund, Food Consultant, Children and Youth Department at City of Copenhagen ©EAT



Copenhagen student preparing food ©City of Copenhagen



C40 World Mayors Summit in Copenhagen, with schools engaged in the Shifting Urban Diets project preparing Planetary Health Diet dishes. ©Mathilde Schmidt, 2019

What other Nordic cities are doing

Oslo, Norway

Sustainable food is a key focus area for the City of Oslo – a signatory of the Good Food Cities Declaration. In 2015, the city decided to increase its share of organic food procurement to 50% and increase the share of fair-trade products purchased. In 2019, the city set additional goals for achieving a sustainable food system, such as reducing the city’s food waste by 50% by 2030; halve meat consumption in public kitchens by 2023; and setting specific requirements for animal products to support sustainable production and animal welfare.

In 2022, the City of Oslo introduced vegetarian food as the standard for all municipal events, as part of their efforts to reduce GHG emission from food. The City reversed the script, with event attendees having the option to ask for meat dishes. The City also plans to introduce a free vegetarian meal for high school students, ages 15-18, in the fall of 2022, making their way through to elementary schools in 2024. Going forward, the city is working on its procurement strategy for food and beverage to further make progress.

Gothenburg, Sweden

The Swedish city of Gothenburg serves 60,000 meals daily in its 160 public schools, using 48% organic products. The City put a strong focus on sustainability in school meals, with each served meal representing 0,7 CO2-equivalents. The schools offer two lunch options daily, with at least one vegetarian every day, and fully vegetarian two days a week.

Reducing food waste has also been at the center of the city’s work for sustainability, measuring progress by sorting all waste, weighing, and registering food waste in schools on a daily basis.

Gothenburg set ambitious goals for 2030, aiming for 0,5 CO2-equivalents per lunch served, purchasing 80% organic produce, a maximum of 30 grams of waste per serving, and halving its disposable items.

The way forward

Now the goal is to **test the Shifting Urban Diets methods in additional cities** and develop a publicly available action **toolkit on how to implement them.**

To make this happen, EAT is planning a follow-up project called “City Guide to a Planetary Health Diet” – a three-year initiative to build a toolkit of approaches to shift urban food consumption behavior. The City Guide project will test and verify methods that contribute to making healthy and sustainable food the default option for city dwellers.

We aim to start this work in Oslo, and to engage this cohort of Nordic stakeholders, along with groups such as the C40 Food Systems Network, throughout the project.

The experience of implementing the Shifting Urban Diets methods in additional Nordic cities, along with input from a wider group of stakeholders, will be turned into a practical and adaptable toolkit.

The toolkit will guide the application of these methods in a range of city contexts, with the ultimate ambition to help

shift food consumption behavior around the world. The end-users will be municipalities, urban planners and designers, community organizations, food service professionals and chefs, or food retail outlets.

With tested tools to measure climate impact and implement interventions to reduce GHG emissions and improve diet, the City Guide project can empower urban food practitioners to achieve commitments such as the C40 Good Food Cities Declaration and make progress towards the Sustainable Development Goals and the Paris Agreement – using food systems change to address some of society’s most pressing challenges.



C40 World Mayors Summit in Copenhagen, with schools engaged in the Shifting Urban Diets project preparing Planetary Health Diet dishes. ©Mathilde Schmidt, 2019



Shifting Urban Diets: Nordic Stakeholder Exchange

Thursday, November 25 2021, 13:00–16:00 CET

Host: City of Copenhagen and EAT

Location: Copenhagen Kalvebod Fælled Skole & online

This exchange served to:

- Celebrate the spearheading work done in Copenhagen;
- Share the methods, outcomes, and lessons;
- Receive input on aspects most interesting to others; and
- Transition to scaling these methods beyond Copenhagen.

Participants: 35

- CICERO
- City, University of London
- City of Birmingham
- City of Bergamo
- City of Copenhagen
- City of Gothenburg
- City of Malmö
- City of Milan
- City of Oslo
- City of Reykjavik
- City of Södertälje
- Coop Denmark
- Copenhagen Food System Centre
- Danone
- EAT
- Forum Virium
- Gehl
- Novo Nordisk
- Potsdam Institute for Climate Research (PIK)
- Stockholm Resilience Center (SRC)
- University of Copenhagen
- Viken fylkeskommune & Matvalget
- WWF-Sweden

Agenda

12:00	Lunch in the food school for in-person attendees
13:00	<p>Welcome remarks</p> <ul style="list-style-type: none"> • Emil Kiær Lund, City of Copenhagen • Emily Norford, EAT
13:05	<p>Shifting Urban Diets: Overview of methods, key results, and lessons from the project</p> <ol style="list-style-type: none"> 1. Establishing a Science-Based Target, Ingram Jaccard, Potsdam Institute for Climate Impact Research (PIK) 2. Urban food environments, Jeff Risom, Gehl 3. Public meals & procurement, Emil Kiær Lund, City of Copenhagen
13:45	<p>Next steps & close: Ambitions for the future and scaling</p> <ul style="list-style-type: none"> • Emily Norford, EAT
13:50	<p>Presentations from other Nordic cities presenting their work in the field</p> <ul style="list-style-type: none"> • Oslo, Norway • Gothenburg, Sweden <p>Q&A segment</p>
14:30	<i>Transition to in-person activities on two Shifting Urban Diets methods: Testing the tools</i>
	<p>Food environments, facilitated by Gehl</p> <ol style="list-style-type: none"> 1. Introduction on methodology and tools 2. Go on site (Vestamager metro) to test tool used to understand how people use public spaces and influences to food behaviors
	<p>Public kitchens, facilitated by City of Copenhagen and Food School Chef</p> <ol style="list-style-type: none"> 1. Introduction on methodology and guides 2. Visit food school and kitchen, meet with the chef; understand considerations when developing a menu for climate-friendly school meals
15:30	Close & Thanks

Thank you to everyone who supported the Shifting Urban Diets project from 2019-2021.

If you have any questions, please get in touch with EAT:
emily@eatforum.org
<https://eatforum.org>
Kongens gate 11, 0153 Oslo, Norway



Gehl

