

International benchmarking – a study on sustainable transition in city regions

Final report / October 6th, 2021



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Background, objectives and methods

Background & objectives

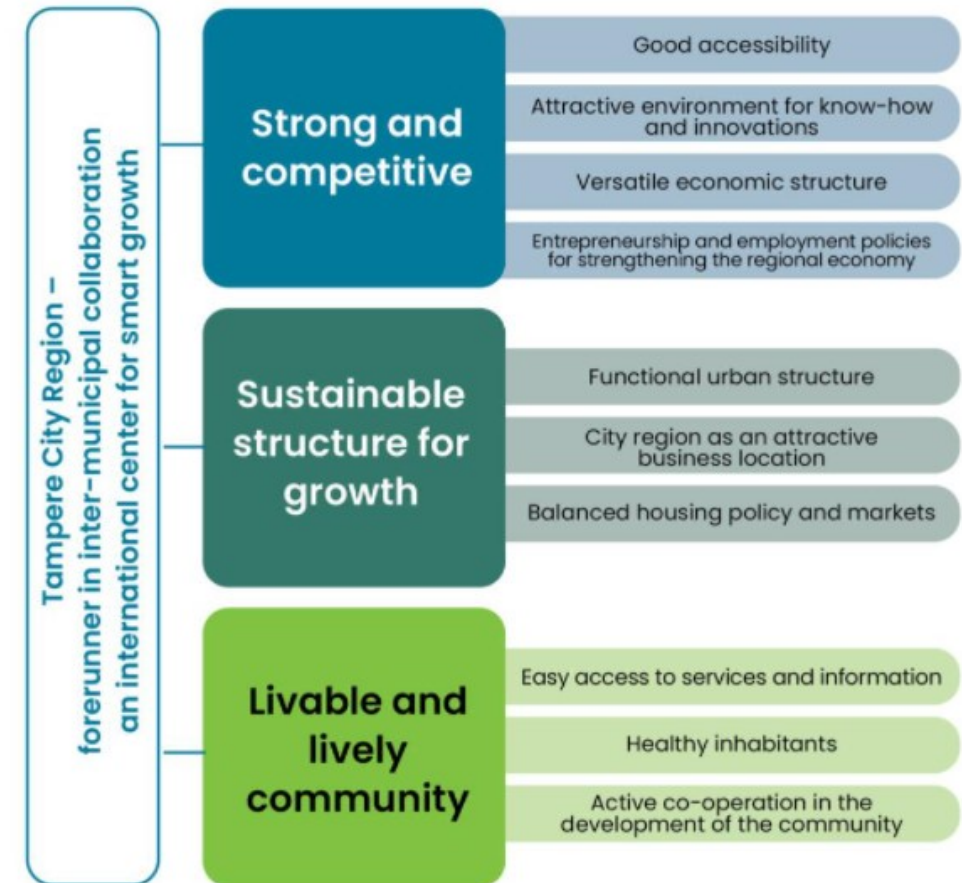
- ✓ Tampere city region is in the process of updating its regional strategy for the future
 - ✓ Tampere city region's vision is to be a **pioneer in municipal collaboration** and a **hub in smart international growth (or sustainable growth?)**
 - ✓ The objective of the strategy is to increase competitiveness, sustainable structure for growth and the wellbeing of the community
- ✓ The region is looking to increase its understanding on **common components of such city regions that can be considered pioneers in the green / sustainable transition.**
- ✓ The region also wants to gain perspectives on **how the pioneering cities/city regions work collaboratively** towards a green and sustainable transition.



Benchmarking cities and city regions that are themselves pioneers in the “green” sustainable transition (and of fairly similar size)

Tampere city region's strategies

- ✓ Tampere City Region is one of the most attractive growth centres in Finland.
- ✓ Region is a sustainable growth metropolis spanning eight municipalities and 0.4 million residents. It consists of the city of Tampere, towns of Kangasala, Nokia, Orivesi and Ylöjärvi and the municipalities of Lempäälä, Pirkkala and Vesilahti.
- ✓ "We are carrying out the most effective regional cooperation in Finland to improve the daily lives of our residents and the future of our region is sustainable. Together, we will build an international, carbon neutral city region."
- ✓ The Region wishes to be
 - ✓ a forerunner in inter-municipal collaboration
 - ✓ an international center for smart growth
- ✓ The region is committed to becoming carbon neutral by 2030



The Structural Plan 2040

- ✓ Being prepared for population growth (480,000 inhabitants by 2040)
- ✓ Densifying the urban structure
- ✓ Developing centers and sub-centers
- ✓ Producing more versatile and higher quality housing environments and houses (91,000 new housing units)
- ✓ Supporting economic growth and businesses (enabling the location for 70,000 new jobs)
- ✓ Renewing the modes of mobility (increasing the share of public transportation, cycling and walking)
- ✓ Improving the accessibility of services across municipal borders



Benchmarking: Choice of city regions

- ✓ Bristol city, United Kingdom
- ✓ Essen city & the Ruhr region, Germany
- ✓ Malmö city & Greater Copenhagen Area, Sweden and Denmark
- ✓ Nijmegen municipality & Arnhem-Nijmegen Green Metropolitan region, the Netherlands
- ✓ Portland city & Portland Metropolitan Area, United States



Picture: Sustain Europe

Benchmarking: Methods

- ✓ Qualitative research on the selected cities/city regions with a particular emphasis on
 - ✓ factors and components that have contributed to the city's/city region's sustainable transition
 - ✓ their strengths in sustainability and green transition, and how these strengths are being advanced
- ✓ Semi-structured interviews
 - ✓ With a sustainability representative from the city/city region
- ✓ Workshop, facilitated by Howspace platform
 - ✓ Led by project members from FCG
 - ✓ participants include the interviewed sustainability representatives from the cities/city regions, representatives from Tampere city region
 - ✓ the purpose of the workshop is to share experiences in sustainable transition and engage in discussions tasks relating to green and sustainable development of cities and city regions



Howspace.com, An AI-powered digital collaboration tool

Benchmarking: Methods

- ✓ Collecting reports & data of the cities & regions involved
- ✓ In-depth interviews with key experts (sustainability focus) from each city and/or region
- ✓ International workshop in September 2021
- ✓ Communication and shared analysis via digital interface (Howspace)



Thanks to all who contributed to and provided great reports like these!

**MONI
PUOLI
NEN
PORT
LAND**

**ALWAYS
A GREEN
CAPITAL**

A Retrospective on the Green Capital year 2018

Benchmarking: What green transition?

We started out by defining green transition and looking for pioneers in...









- ✓ Regional strategies, programs and leadership
- ✓ Regional roadmaps
- ✓ Facilitating a sustainable life for residents
- ✓ Engaging businesses committed to a global transition
- ✓ Support mechanisms and incentives

While doing this, we acknowledged the following limitations:

- ✓ International comparisons are hard to do, given different governmental and institutional contexts
- ✓ The project & analysis will only 1) scratch the surface and 2) contribute to building a network

Tampere city region: towards a vision for sustainable transition

- ✓ Tampere City Region's foresight in 2021 has focused on horizon scanning related to eight themes that frame and contextualize sustainable transition into Tampere City Region.
- ✓ During 2021 we have identified and analyzed different phenomena, trends and weak signals related to the themes.
- ✓ We have envisioned alternative futures for the eight themes. Next steps include creating a vision for the sustainable transition and naming strategic focus areas of development towards 2030.
- ✓ The benchmarking study is conducted as part of the foresight agenda.

THEMATIC FRAMEWORK FOR SUSTAINABLE TRANSITION	
	1. Ecological transition
	2. Transportation and culture of mobility
	3. Living and demographics
	4. Social sustainability & citizen participation
	5. Sustainable business
	6. Digital capabilities
	7. Education & welfare services
	8. Regional collaboration and co-operation

2

The benchmarked city regions
in a nutshell

Tampere city and region

Tampere city

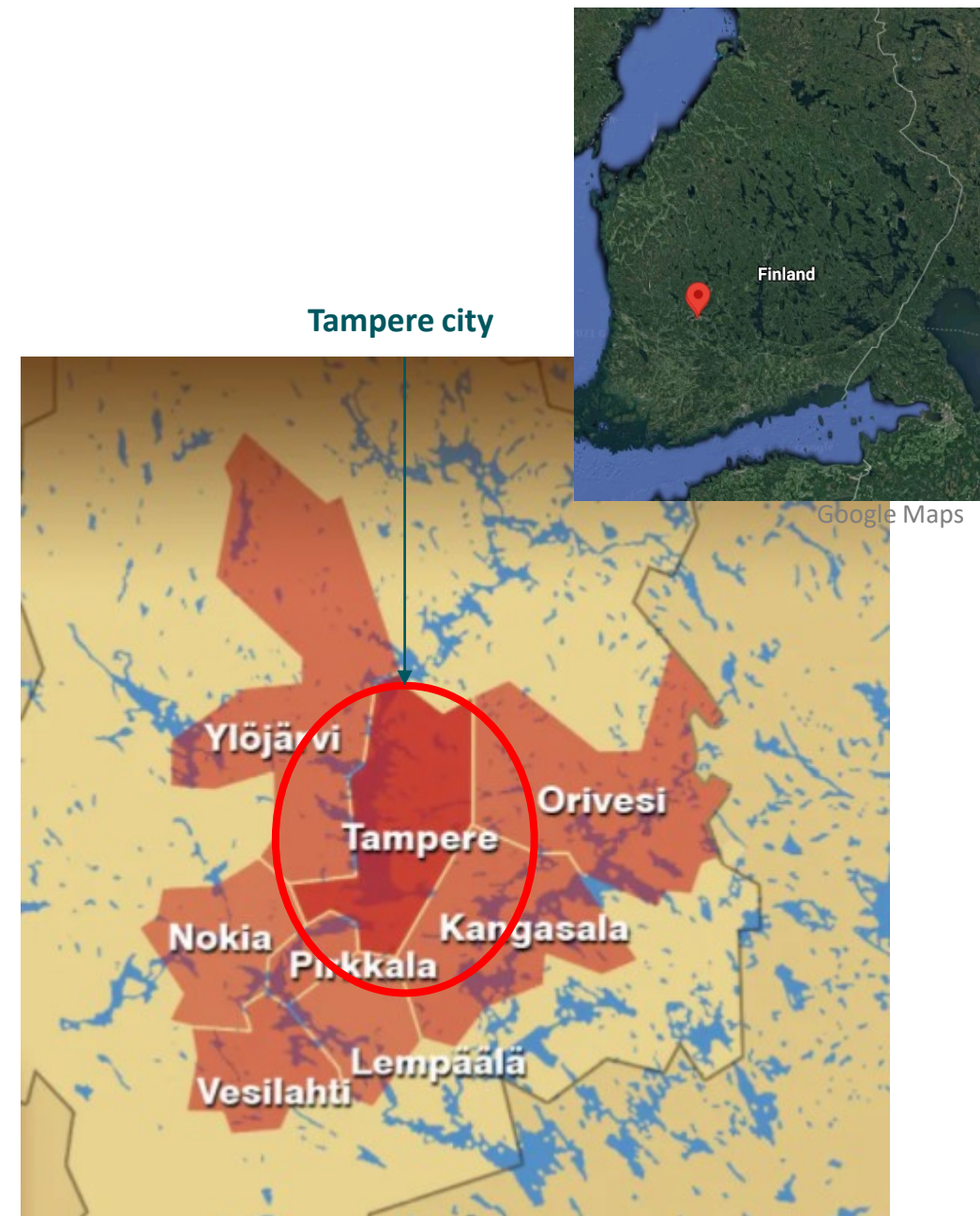
- ✓ 0,24 million people
- ✓ 525 km²

Tampere city region

- ✓ 0,4 million people
- ✓ 8 municipalities
- ✓ 4500 km²

Tampere city region is known for:

- ✓ The fastest growing metropolitan region in Finland after Helsinki metropolitan area. Great accessibility as located at the crossroad of main highways.
- ✓ Industrial past, currently a hub for advanced technology and research
- ✓ MAL agreements, i.e. co-operation agreements between the state and the municipalities of the metropolitan area. The MAL agreement agrees on the long-term development and financing of the urban area for a period of 4 years in the areas of land use, transport and housing



Bristol city and region

Bristol city

- ✓ 0,47 million people
- ✓ 110 km²
- ✓ Administration of sustainability: Sustainable City and Climate Change Department

West of England Combined Authority

- ✓ 1,2 million people
- ✓ 3 municipalities
- ✓ 1333 km²

Bristol city is known for:

- ✓ Its harbor, shipyards, and seafaring
- ✓ Collaborative approach to sustainability governance
Long association with Green movement
- ✓ Being one of UK's leading cities in digital technology



Google Maps

Essen city and region

City of Essen

- ✓ 0,58 million people
- ✓ 210 km²
- ✓ Administration of sustainability: Environmental, Building and Sports Department, underneath to which is Green Capital Agency (with 13 employees)

Ruhr Regional Association

- ✓ 5,1 million people
- ✓ 53 municipalities (11 independent cities, 4 administrative districts)
- ✓ 4439 km²
- ✓ Administration of sustainability: Department of Environment and Green infrastructure

City and region are known for:

- ✓ The Emscher and the Ruhr rivers
- ✓ Transformation from a mining past to a green city and region with a knowledge- and tourism-based economy



Google Maps

Ruhr Regional Association



Malmö city & Greater Copenhagen

City of Malmö

- ✓ 0,34 million people
- ✓ 333 km²

Copenhagen Greater Area

- ✓ 4,4 million
- ✓ 85 municipalities, 4 regions

City and region are known for:

- ✓ The sea and the wind
- ✓ Long tradition in sustainability work
- ✓ Malmö has experienced a big transformation from an industrial city to a knowledge city
- ✓ *The Bridge* between Sweden and Denmark (connecting Scandinavia and Central Europe)



Greater Copenhagen



Nijmegen municipality and region

Nijmegen municipality

- ✓ 0,18 million people
- ✓ 54 km²

The Arnhem-Nijmegen Green Metropolitan Region

- ✓ 0,74 million people
- ✓ 18 municipalities
- ✓ 1000 km²

City and region are known for:

- ✓ Sustainable mobility (in particular, cycling, and buses fuelled by locally produced biogas)
- ✓ High citizen engagement in sustainability matters

The Arnhem-Nijmegen Green Metropolitan Region



Nijmegen municipality



Google Maps

Picture: Arnhem Nijmegen region

Portland city and region

City of Portland

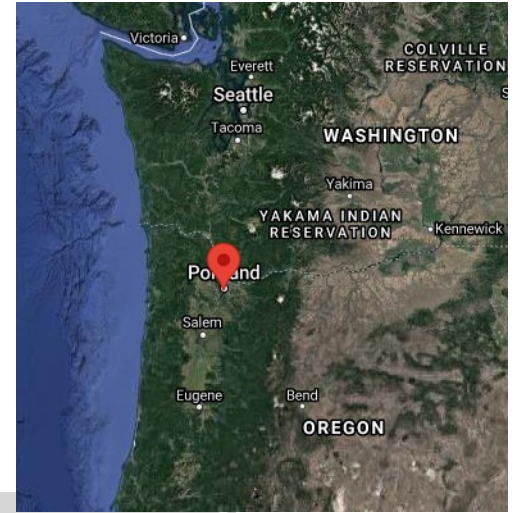
- ✓ 0,58 million people
- ✓ 376 km²

Portland metropolitan area

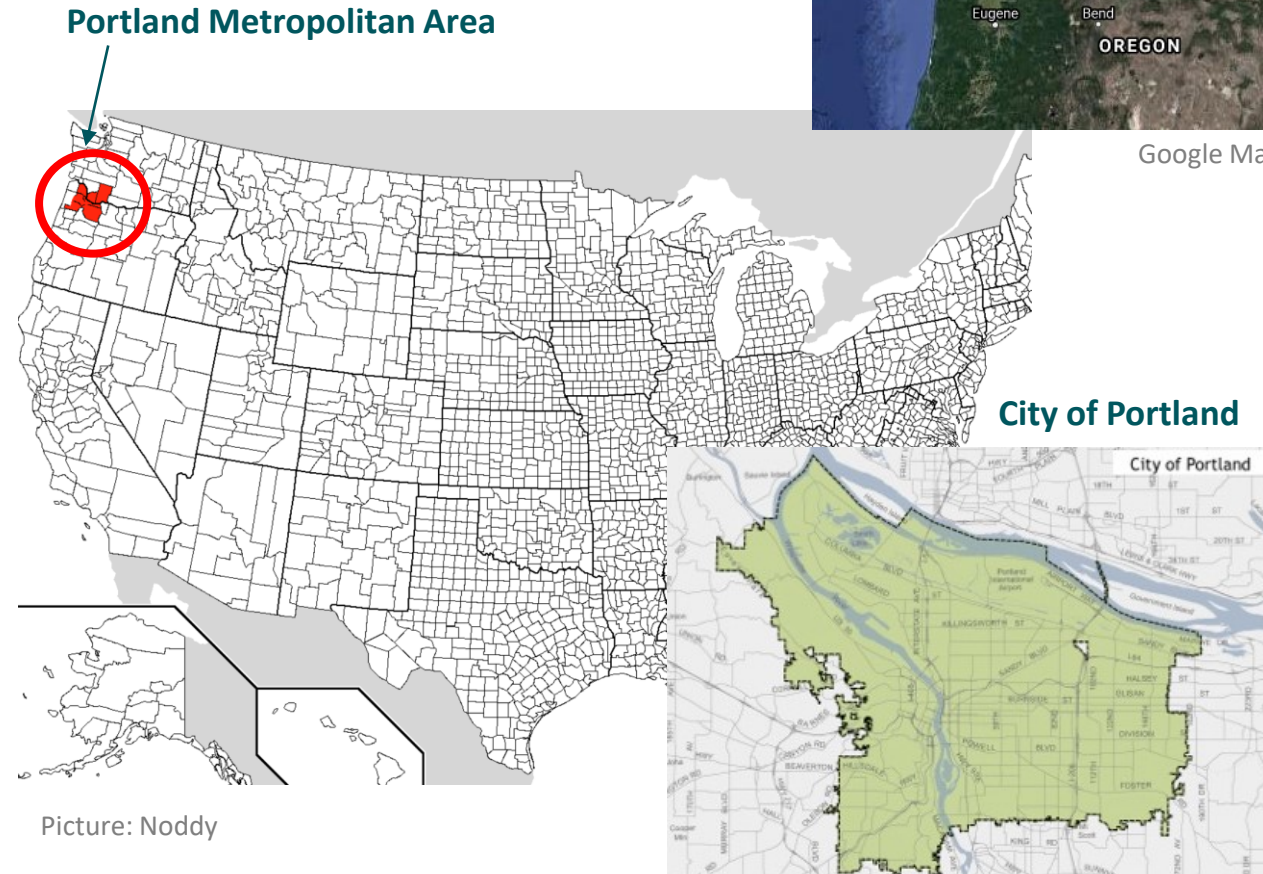
- ✓ 2,8 million people
- ✓ 7 counties
- ✓ 17 310 km²

City and region are known for:

- ✓ Strong connection with nature
- ✓ Sportswear business (e.g. Nike and Columbia)
- ✓ Urban growth boundaries & metropolitan level governance for coordinating land use



Google Maps



Picture: Noddy

Picture: City of Portland Home Energy Score

3

Thematic issues in
sustainable development
and green transition

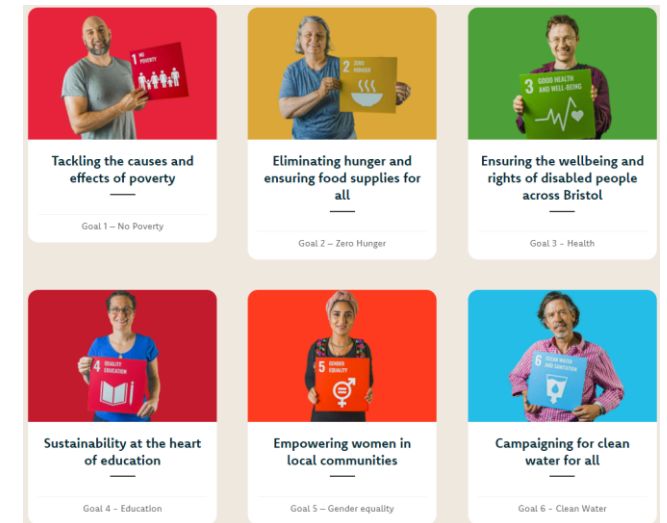
Sustainability governance

- ✓ For **Malmö**, with a long tradition in sustainability work, sustainability is overarching
 - ✓ Malmö Agenda 21 was approved in 1992 and Malmö's sustainability work was launched.
 - ✓ Agenda 2030 and SDGs are significant drivers for Malmö's sustainability work - *"Good life within the planetary boundaries"*
 - ✓ Goals are set in the Environment Program 2021-2030. Malmö has set a target to reduce greenhouse gases by 70 % by year 2030.
- ✓ SDGs help transpose the global to local
 - ✓ Global goals become local goals. SDGs are integrated in many ways in the city's administration and operations, even in recruitment processes.
 - ✓ The city budget is based on the 17 SDG's and there is no separate budget for sustainability work. Follow-up of the SDG indicators is done every year.
 - ✓ Malmö has twice produced Voluntary Local Reviews (VLR) (2019 & 2021)



Sustainability governance

- ✓ **The City of Bristol** uses SDGs for governance and monitoring
- ✓ The City produced the UK's first Voluntary Local Review (VLR) on Bristol's progress, including data on over 140 indicators
 - ✓ Prepared by the Cabot Institute for the Environment / University of Bristol.
 - ✓ Funded by the University of Bristol ESRC Impact Acceleration Account
 - ✓ Conducted in partnership with the City Office at Bristol City Council and members of the Bristol SDG Alliance.
- ✓ The City produces One City Plans
 - ✓ The third iteration published in 2021
 - ✓ Are an “attempt to focus the city on a sequence of key outcomes which we all agree to concentrate on and contribute towards and which take us to 2050”.
 - ✓ Measures are mapped against the SDGs and contain initiatives that contribute toward the local and global delivery of these goals
- ✓ In addition to information, the City wants to inspire, in collaboration with the [Global Goals Centre](#) and appointing *heroes* for each goal



Source: Bristol One City Plan, 2021

SDGs in leading sustainability

- ✓ A prime example is the SDG based administration in **Rheden municipality (Arnhem-Nijmegen region)**
- ✓ In 2018, Rheden municipality transformed its administrative structure and based it on these SDG clusters: welfare, sustainability, economic development, integrated area development, governance and security.
- ✓ The SDGs facilitate the organizational development towards a multidisciplinary challenge-driven municipal administration.
 - ✓ *“Rheden municipality base all their policy, how they report to their Municipal Council, but also how they report on it financially, on the Sustainable Development Goals” (Arnout Smit, Arnhem Nijmegen Green Metropolitan region)*
- ✓ For each SDG, the municipality has an **ambassador**. The aim is that every employee knows the global goals and delivers his/her contribution to the common achievement.
- ✓ **Children are taught in practical workshops** what each SDG is about, and Junior SDGs have been formed to concretize these are; excursions are arranged to boost the learning

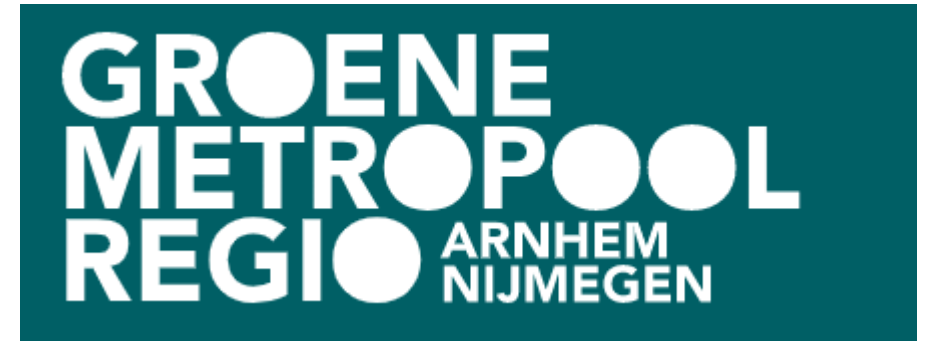


© Municipality of Rheden

Source: Sustainability Day at Schools in Rheden: An SDG Project
<https://www.youtube.com/watch?v=OOU5LRh1Sc4>

Regional collaboration

- ✓ Benefits of collaboration to smaller municipalities as illustrated in **Arnhem-Nijmegen region**
- ✓ Small municipalities have more spatial resources, but smaller human resources:
 - ✓ *“They can -- of course do a little more (in terms of wind and solar), but they may also have much smaller resources in terms of people working with sustainability.*
 - ✓ *And here they and the whole region can really benefit from regional knowledge sharing and uniting as a region for example when applying for funding for different projects” (Arnout Smit, Arnhem-Nijmegen region)*



© Municipality of Rheden

Regional characteristics in cooperation

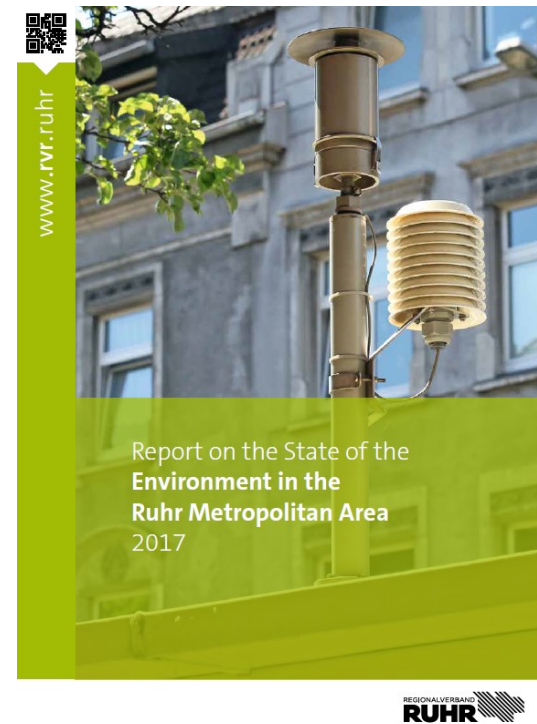
- ✓ **Cooperation through regional projects that involve all the municipalities, Ruhr Regional Association**
 - ✓ Emscher project, revitalisation of the river 1992-2022
 - ✓ Garden Exhibition 2027, all municipalities involved in making the gardens
- ✓ **On regional cooperation among municipalities and cities**
 - ✓ *“If you want the municipalities to work together you need a common project for which they can meet and collaborate. After one project, there will be another, perhaps in a different setting. The important thing is to create these opportunities for the municipalities to work together.” Anne Budinger, Ruhr Regional Association*

	Ruhr area
Population	Most densely populated area in Germany, >5 million people
Employment in mining	1957: ~500,000 1967: ~230,000 1977: ~150,000 2017: ~4,500
Phase-out date	2018
Ownership of the coal production	Private

Source: Transformation Experiences of Coal Regions: Recommendations for Ukraine and other European countries. #JUSTTRADITION4UA

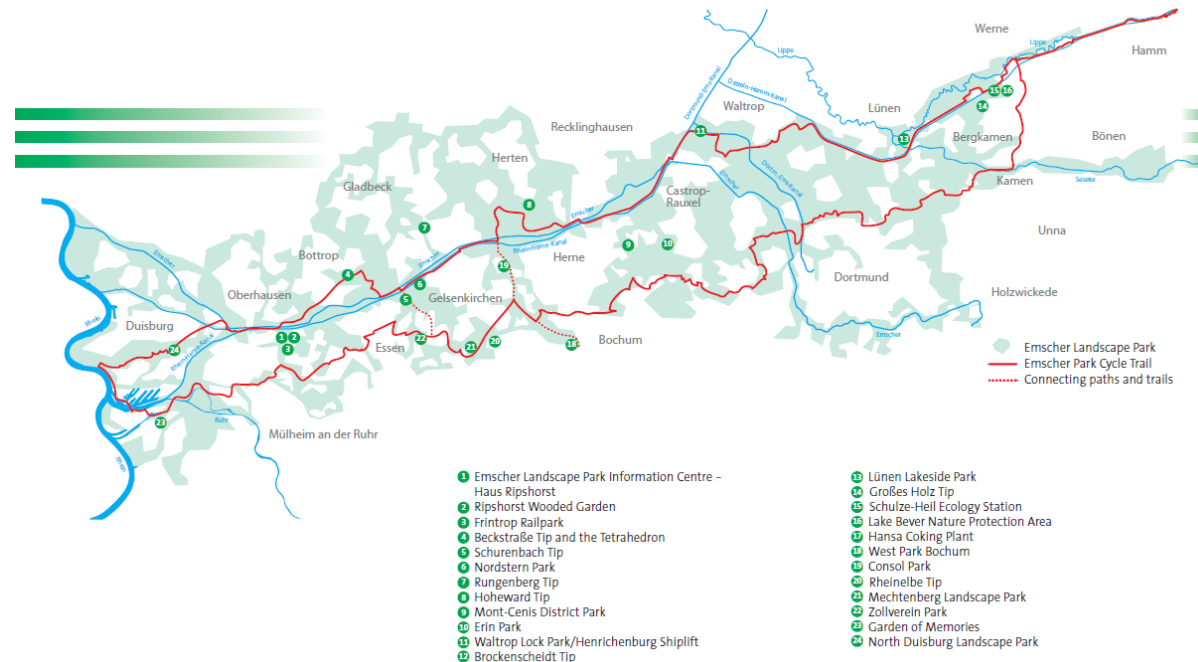
Benchmarking for inspiration

- ✓ **Vancouver's** Green Infrastructure Strategy inspired, in part, **Ruhr Region's** perspective on green infra, and the "regional garden" ideas
 - ✓ *"They [Vancouver] have, a huge green infrastructure strategy written -- five years ago. And they put really a huge effort in getting Vancouver and the Vancouver region carbon neutral and sustainable in a real sense. So, they implemented green infrastructure in basically every public space they had in the city and are still doing it." (Anne Budinger, Ruhr Regional Association)*
- ✓ **Ruhr Region's** planning system in turn is similar to Finland's, with multi-layered planning and guidelines given in regional plans
- Analysis of structures and key stakeholders could further inspire Tampere Region



Learning and scaling-up

- ✓ In the **Ruhr Region**, past experience is used for learning and scaling up:
 - ✓ *I think the biodiversity discussion started in 1989 with the Emscher Park, like the industrial building, or the Building exhibition, where we created the Emscher Landscape Park, the first big green infrastructure project of the region, I would say, but nobody said it's green infrastructure. And nobody said it's sustainable. And this is the main point, I think we're always looking back to and see how that worked, how well that worked, and how we could transfer that to other points... --" (Anne Budinger, Ruhr Regional Association)*
- ✓ IBA Emscher Park is also of wide importance because it takes place in a setting of polycentric urbanization in the Ruhr District, and on North Rhine-Westphalia state, with a population totaling 18 million, in several large cities.
- ✓ Polycentrism is potentially more sustainable, because smaller towns linked together can avoid the multiple problems of sprawl, e.g. preserving connectivity in nature.



Engagement and education

- ✓ **Ruhr Regional Association** has a tradition of environmental education, and it is blooming in turning slag heaps into high-biodiversity parks
- ✓ Residents can easily take informational tours to visit former slag heaps
- ✓ Children and schools frequently visit these natural parks, and the Association is currently aiming to build a special **environmental education centre**
 - ✓ *“We have a huge history in environmental education. So we are from very low level, like, -- you can book a tour on industrial and industrial nature and get someone to get you on a slag heap and show you what the amazing flowers and insects are living there. And this is basically for everyone, while we have a focus on kids.”*
- ✓ Educational perspective is also part of the work on climate adaptation with municipalities, step-by-step:
 - ✓ *We’re doing a lot in educating on climate adaptation. -- So what we are trying to do is educate the municipalities and help them to adapt to climate change, we have them with finding the right funding opportunities, we have them create a bigger network of people together and try to implement new climate change adaptation ways, what we're doing. So I think every step, even if it's a very little one, is helping to adapt to climate change. (Anne Budinger, Ruhr Regional Association)*

Engagement and green energy

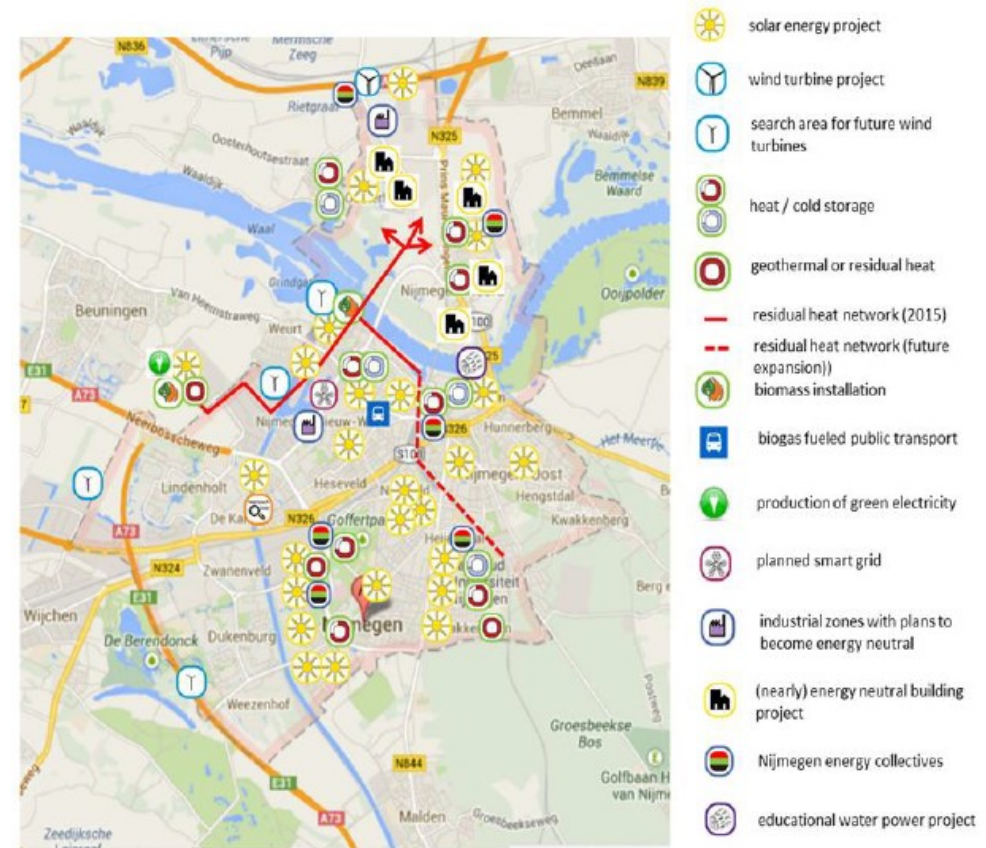
- ✓ **Nijmegen municipality** has four citizen initiated and owned wind turbines.
- ✓ In 2015, the wind cooperative, Windpower Nijmegen, invited the people of Nijmegen to invest in the wind park.
- ✓ Over 1,000 citizens availed of the opportunity to buy shares which amounted to an investment of €2 million. This money was used to fund the construction of the wind park, which commenced in spring 2016, with a bank financing the remainder of capital required.
 - ✓ *“As a municipality, we have been focusing on citizen engagement for decades now, and we have learned several things. One of them is that you have to be doing it consistently and consistently opening up to whatever ideas and needs the citizens come up with. Sometimes it’s hard to let go of our ideas and listen to the citizens and stakeholders first, but that is exactly what we need to do to make it work.” (Ültsje van Gorkum, Nijmegen municipality)*

With citizen initiated and owned wind farms, the advantage is that residents themselves can talk to each other where they would want the turbines to be located, but also receive the financial benefits that the project produces. (Arnout Smit, Arnheim Nijmegen Green Metropolitan region)



Extensive partnering for the green economy

- ✓ Nijmegen's educational institutes are seriously investing in sustainable energy, sustainable construction and closing cycles.
- ✓ Entrepreneurs, students & science are united to help market sustainable start-ups. Nijmegen is also entering new subjects such as urban agriculture and locally organised food supply chains on the agenda.
- ✓ **Power2Nijmegen** is a network for companies, knowledge institutes, local authorities and civilians to cooperate on projects towards making Nijmegen carbon neutral.



Public-private partnerships

- ✓ **Great Leap Programme** is **City of Bristol's** ambitious programme to transform Bristol into a zero-carbon, smart energy city by 2030.
- ✓ Led by Bristol City Council and Bristol Energy, the city's energy company, City Leap will establish a joint venture with another organisation or group of organisations to support the delivery of the UK's first carbon neutral city by 2030.
- ✓ This strategic partnership (joint venture) between Bristol City Council and private organisation(s) will invest in sustainable energy infrastructure in the city, e.g., heat networks, smart electricity management, energy storage, energy efficiency in buildings.

Through the strategic partnership the city benefits from the private organisation's financial resources but also expertise and capabilities. (Alex Minshull, Bristol City)



Picture: great.gov.uk

Public-private partnerships

- In **Portland**, public-private partnerships have played a big part in urban development
- The private sector is where most things happen in terms of what gets built, aside from infrastructure
- Through working together, it is possible to achieve more outcomes than if each agent is trying on its own
- **Prosper Portland** is an urban development agency that focuses on:
 - *building an equitable economy, based on four cornerstones: growing family-wage jobs, advancing opportunities for prosperity, collaborating with partners for an equitable city, and creating vibrant neighborhoods and communities.*

Source: Monipuolinen Portland 2018.



Picture by Pittock Mansion, Portland Oregon, downloaded from Unsplash

Mobility

✓ Regional cycling highways

✓ Arnheim-Nijmegen Green Metropolitan region

- ✓ The region has built bike lanes connecting the municipalities of Nijmegen and Arnheim that are located 15 km apart

✓ Ruhr Regional Association

- ✓ The region has started to build regional bike network of so-called fast bikes lanes that are built on old train tracks and thus have very few crossings. This project called RS1 will connect 10 major cities in the Ruhr area from Duisburg to Hamm, with a distance of 101 km
- ✓ The lanes will include lighting, winter maintenance and service stations located along it (Ruhr Regional Association)

✓ Referendum on cycling, City of Essen

- ✓ 30 000 citizens made a referendum to the City on increasing cycling paths in the city. It was successful and now the city has a 10-year-plan for cycling, with 220 M€ for improving cycling infrastructure.

✓ E-hubs

✓ Arnheim-Nijmegen Green Metropolitan region

- ✓ Transport hubs, locations where shared electric bikes, electric cargo bikes and electric cars can be rented via an app
- ✓ Located in both Nijmegen and Arnheim

Building the infrastructure is not enough to increase cycling. A strong emphasis has been put to behavioural change, i.e talking with employers about promoting their employees to go to work by bike. (Arnout Smit, Arnheim Nijmegen Green Metropolitan region)

The RS1 fast bike lane catchment area includes 1,65 million inhabitants, 430 000 employees, more than 60 headquarters and head offices



Picture: Inschuytgraaf.nl

Picture: ClimateAction

Structural and infrastructure challenges

- ✓ In Malmö, great challenges lie ahead, in e.g. the further electrification of the economy => pressures to grow the grid
 - ✓ *We have to electrify a lot, which is a big strain on our grid. It's not built for that. But we need to electrify quickly, really quickly, because the buses will be electric quite soon (Greater Copenhagen & Malmö)*
- ✓ Probably an issue for further international research & benchmarking...



Image: Electricity GBG, Smart City Sweden

Hydrogen and climate

- ✓ **Hydrogen is one solution for de-carbonising transport and industrial energy use**
- ✓ **Hydrogen lab, Arnheim-Nijmegen region**
 - ✓ A hydrogen lab that is based in the HAN University of Applied Sciences (HAN H2-LAB), Arnheim, facilitates work on all kinds of issues concerning hydrogen.
 - ✓ For many companies, it is complicated to carry out innovation research alone. That is why companies are increasingly using research institutions. The University of Applied Sciences of Arnhem and Nijmegen connects different organizations and the young generation to find answers to innovation issues through a *shared facility* hydrogen lab.
 - ✓ Hydrogen lab is part of a larger energy innovation lab called Connectr, which is provided by a consortium of companies. It is a platform for students, researchers, entrepreneurs and policy makers in the region to engage around energy issues.
- ✓ **Hydrogen Advisory Board, City of Essen**
 - ✓ The City has established a Hydrogen Advisory Board which brings together top companies and research institutions. The aim is to develop hydrogen projects in the region in the sectors of transportation and industry.

At the hydrogen lab, companies can test hydrogen applications. Hydrogen buses and especially hydrogen inland shipping is a big topic for our region because we have a lot of rivers and inland shipping.
(Arnout Smit, Arnheim Nijmegen Green Metropolitan region)



Image: Tommy Krombacher

Waste to resource

✓ Transformation of old slag heaps into recreational sites, Ruhr Regional Association

- ✓ The Ruhr region has many mining heaps left from its coal-mining industrial past.
- ✓ Already over 20 of these have been transformed into landmarks and opened up for the public since 1989. E.g Halde Haniel has been made into an amphitheatre (see photo)
- ✓ The Ruhr Regional Association is in the process of gaining ownership of all of these slag heaps and opening them up for public use.

✓ Recycling streets project, Nijmegen municipality

- ✓ The overall recycling rate in Nijmegen is +75%
- ✓ Citizens can bring their garbage that has some way to recycle, and this garbage is separated in 30 different fractions

We don't just want to just put up a fence on the slag heaps but to develop them into something useful for the public. There's a lot of pressure on these slag heaps because people want have them open and to use them. (Anne Budinger, Ruhr Regional Association)

The Halde Haniel is one of the oldest slag heaps in the Ruhr region. Today, it is a tourist attraction and it is popular for hiking and biking.



Image: Tuxyso

Ecological reconstruction

✓ City of Essen, Freedom Emscher project

- ✓ Coal mining grounds are transformed to thriving business areas with high quality of life and an urban centre with trade and industry.
- ✓ The development will also include additional residential areas as well as green areas and leisure activities on the water.
- ✓ The objective of the three project partners is to make the area fit for the future and to sustainably strengthen its economic power.

✓ Green infrastructure, Ruhr Regional Association

- ✓ The Ruhr region is known by its coal-mining, steel-production industrial past. Through planning in the past decades, green areas have been developed and today 74 % of the region is open/green spaces and 53 % of the region is urban core area is open/green space (Auer 2020)

The former coal-mining sites are still contaminated from the 100 years of coal mining, so they are more easy to transform into business areas than to housing.
(Sebastian Schelcht, City of Essen)

An important question in advancing a region's business interests is how do I get my experts to want to live here and work here. And this is very much location based, and one big factor here is green infrastructure and the livability of cities.
(Anne Budinger, Ruhr Regional Association)

This green infrastructure transformation brought us to a point where we can say yes, it's a great success. And it brought some quality of life, and it made our region much more livable than without. But it did not solve everything. (Sebastian Schelcht, City of Essen)

Social challenges

- ✓ Segregation and long-term unemployment as social challenges
- ✓ Persisting inequality of opportunities for ethnic, gender and language minority groups.
- ✓ Gaps in the available data on understanding how the city's service, treatment and exercise of authority are perceived among different groups of Malmö residents.

For Malmö, there's a huge labor market on the other side of us and in Denmark, and vice versa. But we are not fully understand what it is like to work on the other side, and the cross-border issues that we are really working hard to solve. So, if we can have a more flexible legal system that makes it easier to commute cross-border, then you could really start to match the labor forces on both sides of the border. (Greater Copenhagen & Malmö)



Image: White Arkitekter architects, Source: Voluntary Local Review Malmö 2021

Tackling social inequality

- ✓ **Project Transcity, City of Essen**
 - ✓ Involves citizens from neighbourhoods of North and South in the so-called local emission trading activity which involves emission calculations and trading emission certificates
 - ✓ The project increases exchanges between citizens of different neighbourhoods in Essen (Essen.de)
- ✓ **Black & Green Ambassadors programme, City of Bristol**
 - ✓ A programme in which 3-4 people from minority background have been recruited to be ambassadors of their community, and bring their voice to the city council.
 - ✓ *“Ambassadors will develop and deliver community-based research projects to raise awareness of environmental justice issues and inequality and bring the perspectives of people from Bristol’s Black, African, Caribbean, Asian and Minority Ethnic communities to the foreground.”* (Black & Green Ambassadors)
- ✓ **Social bonds, City of Malmö**
 - ✓ Green bonds have supported incorporating ecological aspects in investments projects such as infrastructure of building. Malmö would now like to apply this similar idea into social investments, to tackle social issues by using social bonds.
 - ✓ However, social bonds are legally more complicated than green bonds because the social effect can be difficult to prove. *“For instance, a good school could be a good social investment, but it's not allowed, because it's just a physical structure within the city organizations.”*



The programme is about bringing in minority communities voice directly, but also about becoming a role model within these communities. (Alex Minshull, Bristol City)

Social Sustainability in Housing

- ✓ In **Portland, Oregon**, sustainable and affordable housing is a Big Issue:
 - ✓ Homelessness, unequal living conditions
- ✓ **The Metro Region and State** are researching ways to improve and even out housing inequalities
 - ✓ *Build Small Coalition* creates solutions to tackle housing segregation
 - ✓ Additional houses on large plots are largely mainstream in the State
 - ✓ Even four apartment units allowed on former single family lots

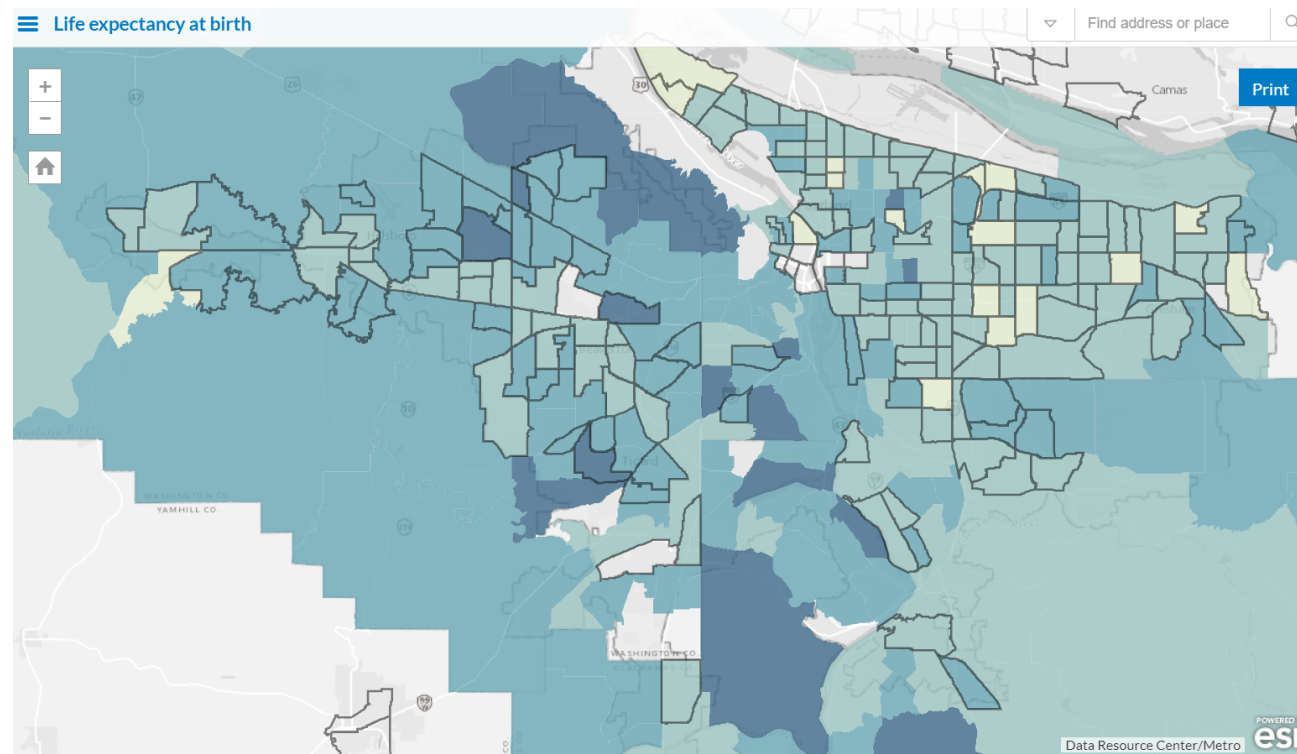
And then recently, the state of Oregon actually said that you have to allow up to four units per single family lot. - I'm thinking we might need to invest in how to do that well, and to show how to model the smaller format housing. (Megan Gibb, Portland Metro)



Image: Accessory Dwellings, Build Small Coalition

Regional Barometer to monitor inequality

- ✓ Oregon Metro's Barometer illustrates segregation between areas, housing conditions, communities, local climates, economy and transportation in the Region
- ✓ Life expectancy of local populations shown on [Metro maps](#) can be seen as a bold case of open data



Climate change adaptation

✓ River Waal, a national project in Nijmegen

- ✓ The “Room for the River Waal” project involved pushing a dike 350 meters inland and digging a new channel for the river thereby creating an island that is used as an urban river park. The successful completion of the project in 2016 resulted in a 35 cm reduction in the water height of the river. (Climate Adapt)
- ✓ Project helps to reduce flood risk by about 50% in the north side of Nijmegen (Arnout Smit, Nijmegen municipality)
- ✓ Budget: 359 M€

✓ Levels of climate adaptation plans in Nijmegen

- ✓ **National:** the Netherlands has a national Climate Adaptation Strategy (Nationale klimaatadaptatiestrategie, 2016)
- ✓ **Regional:** Nijmegen and the surrounding region has its own climate change strategy that was produced in the years after the national strategy
- ✓ **Local:** Nijmegen municipality is almost finished with its local climate adaptation strategy, as well as an implementation plan for local measures for climate adaptation. (Ûltsje van Gorkum, Nijmegen municipality)



Image: River Waal, by Sieber Swart

*What we do know pretty well is what we should do with the **discharge of heavy rains**; we do know where the problems are, we do know how much damage they can cause, and we do know which vulnerabilities there are. So we're just kind of planning how to adjust to that.*

*In terms of the **heat stress**, we have quite good information on how much of a problem there is and where cool areas are available for citizens. And where we should create extra either natural or artificial cooling areas. But we do not really know is **long dry spells** and how much problems you're going to have with that. (Ûltsje van Gorkum, Nijmegen municipality)*

Biodiversity as regional issue

✓ Examples of work on increasing biodiversity, Nijmegen municipality

- ✓ Municipality supports organisations that raise awareness about biodiversity as well as sustainable and community-based food production in and around Nijmegen
- ✓ Municipality has management plans for municipality-owned green areas to increase their ecological value
- ✓ Municipality initiates tree planting programmes
- ✓ Nijmegen has a rule that states that every citizen should have access to a green area within 300 m of his/her home.

✓ Biodiversity Net Gain, a UK government introduced model to planning in order to increase biodiversity

- ✓ The system in brief: All land use developments need to increase the biodiversity value of the site by 10%. If you cannot increase the biodiversity on the site, you have to pay for it to be done somewhere else, and be maintained

✓ Plan for biodiversity, Regionalverband Ruhr

- ✓ The sub-department of Climate Change & Climate Adaptation is in the process of writing a biodiversity strategy for the region



Image: Juana Clemente-Alloza

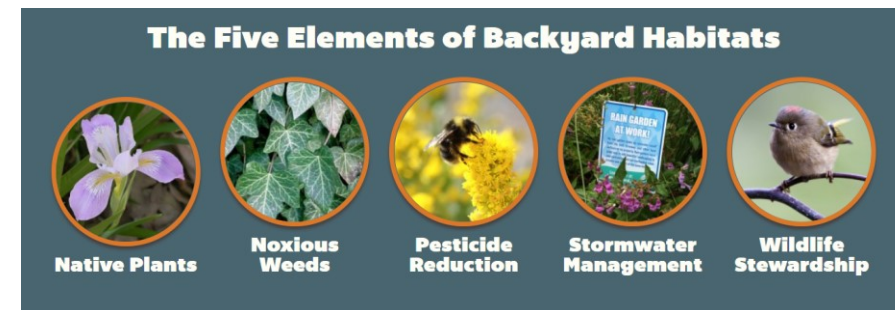
In Nijmegen, biodiversity is considered to be a very important part of sustainability. But it's an area in which it is challenging to define specific targets, for example for year 2040 or 2050. (Ültsje van Gorkum, Nijmegen municipality)

In a nutshell, there is a spreadsheet for counting the value of biodiversity. The development site then has to increase the biodiversity value by 10% or more.

We are currently surveying our land to understand its current value and where we could increase it. And then in effect we could sell that increase to developers who can't achieve the 10% increase on their own development site. (Alex Minshull, Bristol City)

Biodiversity and worldview

- ✓ **Portland:** Recognizing diversity as extraordinary beauty
- ✓ Seeing diversity also from an aesthetic perspective, helps cross political borders:
 - ✓ *“And that's actually, that value came from a conservative governor in Oregon, way back when he saw what California was looking like, and he was like, I don't want to spoil... The natural beauty is so abundant, you know, the gourds and the mountains and the forests and these beautiful old trees. I mean, it's, it's, it's like, I don't know how to describe it. It's so beautiful.”*
- ✓ A “Backyard Habitat” programme to ensure that biodiversity is preserved on private lands and properties as well



“We have a really great Backyard Habitat program, that's actually a beautiful innovation -- co-hosted by the region and the Audubon Society, which is like the bird organization. -- That's a great little program and pollinators love it. Salamanders love it -- some of those species can actually thrive. There's a whole connection, --we do have a huge tree canopy. -- [And] there's native trees -- but it is just a green, a sea of green.”
(Megan Gibb, Oregon Metro)

Images:

<https://backyardhabitats.org/>

<https://www.loveportland.com/news-blog/2020/1/29/its-gourd-season>

Decoupling

- ✓ **Portland and Multnomah County** are US national leaders in reducing carbon emissions.
- ✓ Portland's experience suggests that cities can reduce emissions as their economies and populations grow.
- ✓ Portland businesses are already exporting the products and services they've developed in response to climate change — from highly efficient building improvements to stormwater management. As the world moves to a low-carbon economy and invests in climate-ready communities, Portland businesses will reap the rewards of their leadership.
- ✓ Portland and Multnomah County have committed to reducing local carbon emissions by 80 % below 1990 levels by 2050, with an interim goal of a 40 % reduction by 2030.

POPULATION AND JOBS ARE UP, EMISSIONS ARE DOWN

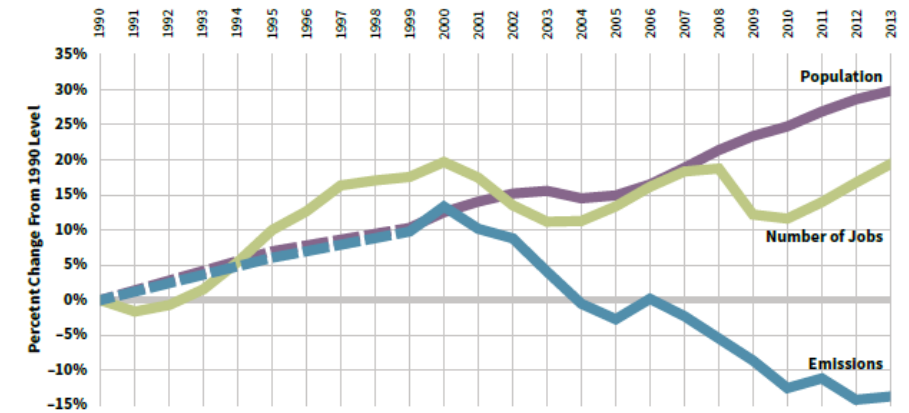


Figure 2. Change in Multnomah County carbon emissions compared to growth in population and jobs (1990–2013). Source: Portland Bureau of Planning and Sustainability

Portland's experience suggests that cities can reduce emissions as their economies and populations grow.

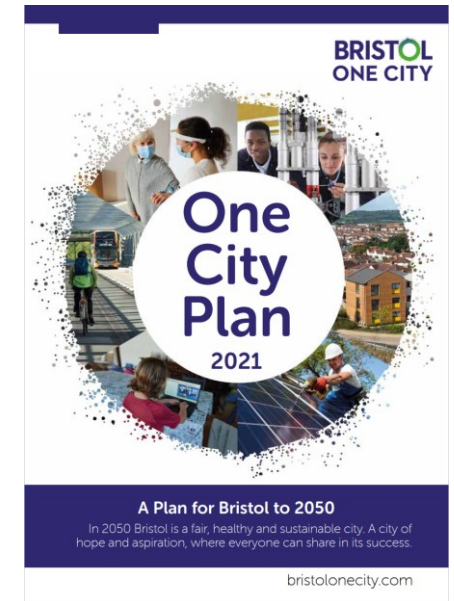
Even as Multnomah County has experienced a 31 percent increase in population and a 20 percent increase in jobs since 1990, total carbon emissions have fallen during the same period.

4

What ultimately drives
change?

Collaboration as Networking

- ✓ **Power2Nijmegen, Nijmegen municipality**
 - ✓ Power2Nijmegen is a network committed to an energy-neutral Nijmegen by 2045
 - ✓ Includes over 200 businesses and organisations that mostly exchange knowledge about the energy transition.
 - ✓ The municipality facilitates this by organising events, meeting and presentations approximately 4 times/year, with roughly 100-200 participants
- ✓ **One City Approach, Bristol city**
 - ✓ One City Approach seeks to create an informal voluntary partnership between all the public, private and NGO organisations in the city of Bristol in order to deliver better outcomes for the people of the city
 - ✓ One City Approach includes the making of One City Plans for Bristol in which the challenges and objectives for Bristol are set out. The One City Plan have been produced annually since 2019.
 - ✓ One City Approach includes “six thematic committees, known as the One City boards, which meet on a quarterly basis to discuss issues around 6 key themes for the city: Connectivity, Economy, Environment, Health and Wellbeing, Homes and Communities and Learning and Skills.” (Macleod, 2020).
- ✓ **Climate Contracts, City of Malmö**
 - ✓ Malmö has 'Climate Contract' partnerships with stakeholders to carry out pilot projects, e.g. Smart grid solutions. In these pilot projects based on partnerships, it is typical to strive higher than the city's own environmental goals.
 - ✓ There are also cooperation networks for the promotion of social issues, e.g.. Malmöandan, which aims to facilitate the transmission of residents' ideas to the city and to promote their implementation, through cooperative solutions that strengthen the well-being, health and meaningful life of Malmö residents.



Genuine collaboration, (with all the stakeholders) getting buy-in and co-design, takes a lot longer than if the city council just made the One City Plans on its own. (Alex Minshull, Bristol City)

Collaboration in Great Regional Projects

✓ Greater Copenhagen

- ✓ The economic corridor String was started as an Interreg project, 1999
- ✓ The **Fehmarn Belt Link** is currently being built, as a tunnel connecting Denmark and Germany, to serve a high-speed rail line Copenhagen–Hamburg.
- ✓ In the Greater Copenhagen area, it has been noted that companies want to be innovative and move forward at a fast pace, which also means that it challenges the way public bodies and other partners act when they need to be able to react faster than before.

✓ Western harbour, City of Malmö

- ✓ Western Harbour is a large redevelopment project in which a declining post-industrial area has been transformed into a modern sustainable development
- ✓ In Western Harbour, the city was able to attract construction companies to participate in the development of the area and to agreed ecological goals. In areas where the city owns land, the city also has good opportunities to set, for example, environmental targets for construction.

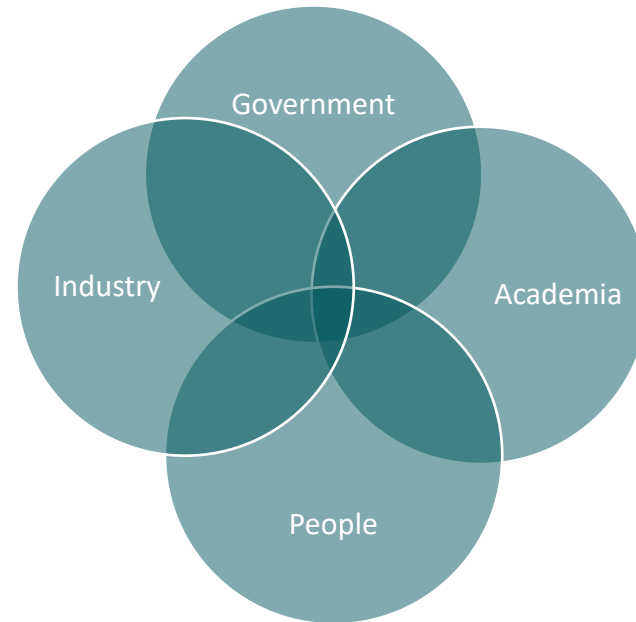
*Partnerships are seen as an important tool to advance sustainable development. City of Malmö aims to facilitate innovation and advance sustainable action through partnerships. Companies are attracted to partnerships with the city if their business can benefit from it or if they get an opportunity for a new experiment, through which they can advance further.
(Monika Månsson, city of Malmö)*

Change through different emphases in the Quadruple Helix

- ✓ A collaborative city strategy (Essen)
- ✓ SDG led leadership (Malmö)
- ✓ Breaking away from the silos (all regions)



- ✓ Innovation platforms and business partnerships (Malmö and other cities)
- ✓ Focusing on key sectors e.g. food, health, wind energy (Arnhem-Nijmegen), hydrogen fuels and vehicles (Essen and Malmö)



- ✓ Horizon, Interreg, EU research (Malmö, Essen)
- ✓ Regional projects in biodiversity & research (Essen)
- ✓ Specialized research, innovation and science policy (Essen, Arnhem-Nijmegen)

- ✓ “SDG heroes”, Black & Green Ambassadors and community-based research (Bristol)
- ✓ Critical knowledge, regional barometer and mapping inequalities (Portland)
- ✓ Residents as local investors (Nijmegen)

Funding examples

- ✓ **Governmental funds: Bristol city**
 - ✓ Sustainable City & Climate Change Department, including a new climate ecological programme
 - ✓ Annual budget around 2 M€ from public funding (city council, UK government)
- ✓ **City funds: Malmö**
 - ✓ The normal operations (public procurement, good food in schools etc.) for sustainability is almost completely funded by the taxes: sustainability does not have an earmarked budget. EU funding and national funding is applied for innovation or for big infrastructure projects.
- ✓ **European funds**
 - ✓ Horizon 2020 programmes, e.g. for cycling infrastructure, neighbourhood mobility (in city of Essen),
 - ✓ REWAISE (Resilient Water Innovation for a Smart Economy) project that aims to reduce the amount of drinking water and increase the circularity of water (in Malmö city and neighbouring municipality)
- ✓ **Private funds**
 - ✓ City of Essen, Essen51 project: Thelen Gruppe invests in the development of a neighbourhood with 2400 apartments.
 - ✓ Private-public partnership: Joint-venture e.g.

Comparisons are complicated: it is not only the department of sustainability in a city or region that is responsible for advancing sustainability – the key is the combined impact of all the departments (and all stakeholders). For instance, the department of energy is a key actor in de-carbonisation of a city.

Without certainty about financing (for the next 5-10 years) it is very difficult to plan projects. (Alex Minshull, City of Bristol)

Private actors recognize that they can benefit from the green infrastructure project that we have been implementing in Essen, by building houses close to green parks. (Sebastian Schelcht, City of Essen)

5

Recommendations for Tampere city region

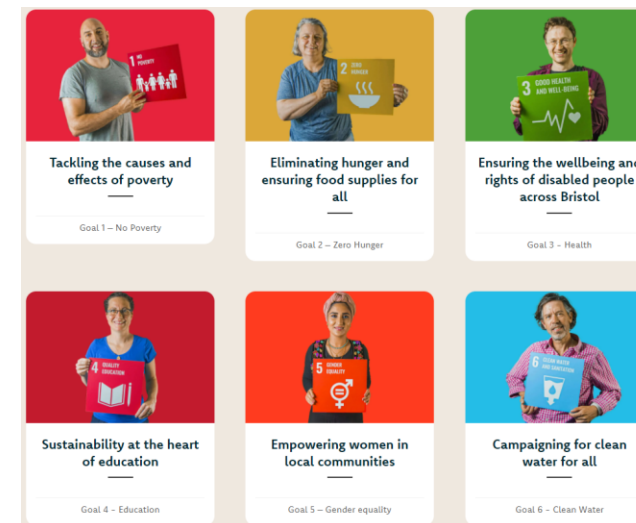
Learnings for Tampere city region

✓ 1. People as the primary resource

- ✓ Cooperation networks to promote residents' ideas (Malmö)
- ✓ Wind energy as everybody's business (Nijmegen)
- ✓ Sustainability ambassadors (Bristol)

✓ 2. Clearly defined "regional strengths"

- ✓ Food, health, energy (Arnhem-Nijmegen)
- ✓ Hydrogen technology development (Essen)



Learnings for Tampere city region

✓ 3. SDG led governance

- ✓ All governance conforming to and inspired by sustainable development goals (Malmö, Bristol)



✓ 4. A narrative of change

- ✓ Being and playing the part of national forerunner (Portland)
- ✓ Biodiversity as a prominent theme all the way to children and education (Ruhr region)



✓ 5. Personal carbon trade?

- ✓ As a means of social exchange (Essen)
- ✓ Also utilizing local currencies (Porto, Portugal)



Drivers?

Contradictions?

Obstacles?

Trade-offs?

Political intrigues?

Means and instruments?

6

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