Interreg

North-West Europe

Co-funded by the European Union

Cool Neighbourhoods

REPORT

SUBGROUPS AND STAKEHOLDERS NEEDS

WP1 - Activity 1.1- Deliverable 1.1.3

MAY 2025

Provincie Antwerpen

Index

Introduction

This report presents the findings of a needs analysis conducted to identify knowledge and capacity gaps regarding heat stress resilience in public spaces. The analysis also explores the preferred methods for embedding and disseminating this knowledge within partner organizations in the future.

To achieve these goals, three methods were employed:

1. **Interactive Mentimeter Quiz**: Partners participated in a quiz designed to assess current knowledge and capacity on various themes related to heat-resistant design.
2. **Microsoft Forms Survey**: The quiz was shared with partners to be completed within their organizations, providing additional insights.
3. **Expert Interviews**: In-depth interviews were conducted to gather detailed perspectives and expertise.

The insights gained from this analysis will serve as the foundation for the development of tailored training modules, a key deliverable of the Interreg NWE project - Cool Neighbourhoods.

Interactive Mentimeter Quiz

Target group

The project partners present at the partner event 20/09/2024 in Antwerp: Middelburg, Except, Sioen, UA, Pro-Sud, Wimereux, CAPSO, Ville Saint Omer, HZ, VDE, Goes

Themes to survey

- Technical jargon:
  Surveying general knowledge about heat stress and climate adaptation

- Analysis & data: Surveying knowledge about which public domains are affected by heat, existing data/indicators, …
- Measures: goal: Assess knowledge on different types of measures to fight heat stress, effect of different measures, nature-based solutions VS technical solutions.
- Participation: Assess knowledge about which organisations are involved in heat-resilient design, internal within the organisation and external + what are the benefits and challenges of an integrated approach?
- Costs & benefits: Assess knowledge on costs and benefits of a heat resilient approach.
- Execution: Assess knowledge on maintenance of heat resilient public spaces

Quiz and results: refer to annex 1, p 18.

Conclusion

From partners' responses, we learn that these are the key learning needs.

Concrete Measures and Technical Solutions

There is a strong need for information on concrete interventions and technical solutions to address heat stress, including:

- The effectiveness of measures to reduce heat.
- Quick and easily implementable solutions.
- Site-specific practices and best practices.
- Growing conditions for trees.

Cost-Effectiveness and Long-Term Planning

A desire to gain more insight into the cost-benefit aspects, such as:

- Comparative cost-benefit analyses in different contexts.
- Subsidies, incentives, and the financial feasibility of measures.
- Developing long-term plans that are both sustainable and cost-effective.

Awareness and Participation

Engaging citizens in climate adaptation and addressing heat stress requires:

- Strategies to increase awareness about heat stress.
- Methods to engage citizens and make the impact of their actions visible.
- Inspiring examples of participatory projects.

Governance

There is a need for practical support, such as:

- Applying consistent decision-making models.

Knowledge Sharing and Information Sources

There is a strong demand for:

- Design tools, educational materials, and expertise for effective approaches to heat stress.
- Reliable information sources and tools.
- Insights into how other countries and pilot projects are tackling participation and implementing measures.

Microsoft Forms Survey

This survey aimed to assess knowledge gaps related to heat stress resilience in public spaces. The input helps us to create effective training modules for local actors to strengthen this knowledge. There were no right or wrong answers. Everybody shared their actual experience.

Method

Microsoft forms survey in English, Dutch and French (Ca va chauffer) to ensure accessibility and help assess broadly existing knowledge gaps in heat stress management. This survey was distributed through local networks of all the partners.

Conclusions

From all the 162 responses from civil servants, executive staff, spatial planners, participation experts, maintainers, project leaders, … collected in the multilingual survey (English, Dutch, and French), these are the most important learning needs.

Concrete Measures and Technical Solutions

There is a strong demand for information on technical solutions and practical interventions to tackle heat stress, specifically regarding:

- The effectiveness of greening urban spaces and integrating greenery.
- Efficient water management, such as infiltration techniques and rainwater reuse.
- The selection of suitable vegetation for urban areas and spaces with limited options.
- Cost-effective methods for heat stress-resistant (re)construction and urban planning.
- Technical do’s and don’ts for urban contexts with limited outdoor space.
- Tips and cost-effective solutions specifically for schools, such as adaptable interventions in playgrounds.
- The effect of building materials and colours on in- and outdoor temperatures.
- Tailored solutions for commercial spaces and small businesses.

Impact Heath on Health and Vulnerable Groups

Participants emphasized the importance of understanding the health impacts of heat stress, particularly for vulnerable groups:

- Strategies to reduce heat stress in daily life, including hydration methods and non-air-conditioning solutions.

Communication, Participation & Awareness

Raising awareness and engaging stakeholders requires a better understanding of:

- How to effectively communicate the health risks of heat stress to different target groups.
- Strategies to inform and raise awareness among citizens about the impact of heat stress.
- Methods for behavioural change and engaging local communities in climate adaptation.
- Effective communication methods tailored to different audiences. Participatory approaches to involve citizens in co-developing solutions.

Good and Local Practices

Respondents indicated a need for concrete, applicable tools and examples, such as:

- Demonstrations of successful measures and practical case studies.
- Best practices for implementing and effectively disseminating new knowledge within organisations.
- Practical guidelines for translating theoretical knowledge into local actions.
- Guidelines for schools and youth organizations on climate adaptation measures.

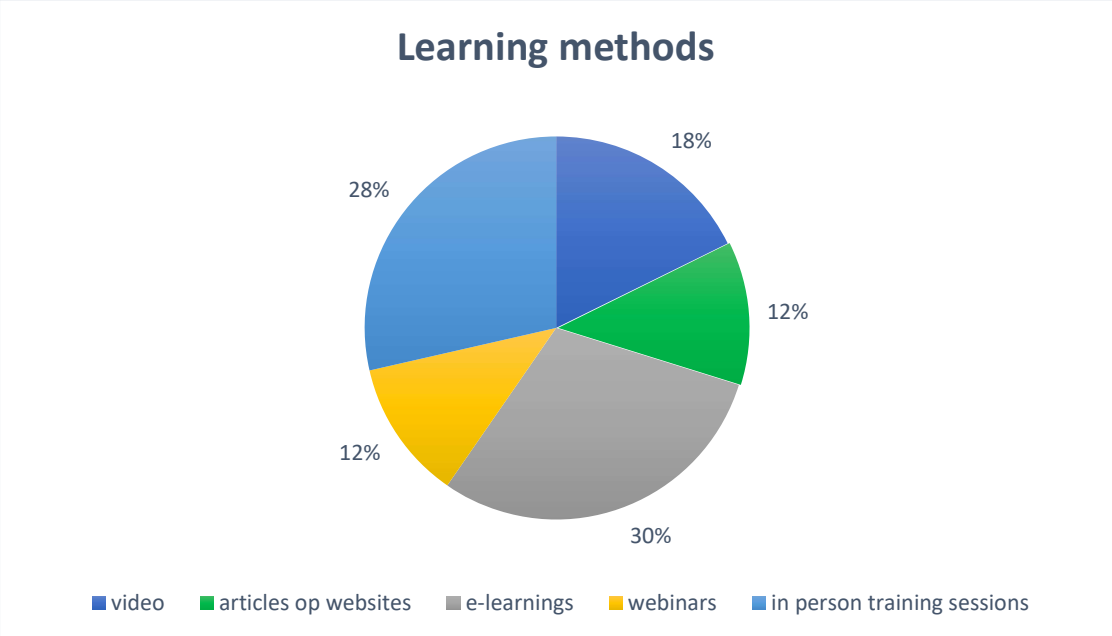
Policy

The survey revealed an interest in better understanding policies, including:

- The role of government and local authorities in facilitating climate adaptation.
- Regulations and incentives for urban climate adaptation.

Preferred learning methods

The respondents gave these answers regarding their preferred learning methods:



In-depth Interviews Experts

These interviews aim to pinpoint gaps in expertise, locate the most current knowledge, and gather insights for developing training modules.

Method

In-depth interviews professionals around climate adaptation from a heat perspective. Each partner was tasked with nominating at least two experts. PoA (Province of Antwerp) made a selection to ensure a broad, international and varied range of expertise. An interview guideline and templates for conducting interviews were also shared with the partners.

Experts

Urban climate experts, landscape architects, public health specialists, and other relevant professionals.

A big thanks to

- Thécla Kirsch, advisor in sustainable construction and Kristina Hondrila, Director from Oekozenter, www.oekonzenter.lu, Luxembourg
- Myriam Bentz, urban architect in the ministry of housing and spatial planning, Luxembourg
- Prof.dr. Steven Caluwaerts, University Gent, Department of Physics and Astronomy + Royal Meteorological Institute of Belgium, www.ugent.be, Belgium
- Prof. dr. ir. arch. Griet Verbeeck, University Hasselt, Department Architecture and Arts, Research in sustainable living and housing, Belgium
- Elise Debergue, Climate Change Adaptation Project Officer, CERDD (Resource Centre for Sustainable Development in Hauts-de-France), cerdd.org, France
- Laurent Caux, Territorial Project Officer, Prefecture of Pas-de-Calais – DDTM (Departmental Directorate for Territories and the Sea), www.pas-de-calais.gouv.fr/Services-de-l-Etat/Les-Services-de-l-Etat/DDTM, France
- Clément Ringot, Architect and Landscape Designer, BIOS Atelier, www.biosatelier.eu, Belgium
- Iris Chervet, Architect, Urban Planner and Landscape Designer, Atelier Iris Chervet, www.irischervet.fr, France
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- Bas Kole, strategic consultant in civil engineering and water management, Netherlands
- Bas Wattel, ecologist, Municipality of Middelburg, Netherlands

- Luc Wallays, landscape architect, OMGEVING, www.omgeving.be, Belgium
- Michel Joosse, teamleader management, maintenance, replacement and construction public space, Municipality of Middelburg, Netherlands
- Christiaan Weiler, Architecture coordinator, CBK Zeeland, Netherlands

Desired output

- New knowledge from the experts' point of view
- Knowledge that local authorities lack
- Advice on how to bridge this knowledge gap

Insights from the experts' point of view

Experts highlighted these **key areas** where there is a lack of knowledge and where the challenges lie. They also gave very worthy advice in the interviews to tackle the challenges of urban heat islands (UHI) and climate change. In short, a comprehensive approach combining long-term strategies, innovative actions, and cross-disciplinary collaboration and out of the box thinking is essential according to the experts.

Lack of knowledge on green and innovative infrastructure

Challenge: Shifting the focus from traditional infrastructure to green infrastructure, ensuring that more space is dedicated to nature rather than expanding parking lots or other urban sprawl.

Advice: One of the most immediate and impactful actions is the planting of trees and expanding green areas within cities. These efforts provide much-needed shade, reduce the urban heat effect, and contribute to enhancing biodiversity. The renovation of existing buildings to improve their energy efficiency and reduce their ecological footprint is also a crucial action. Instead of focusing on new construction, prioritizing retrofits can help cities reduce overall emissions and make buildings more resilient to heat. Incorporating passive cooling techniques, such as natural ventilation and strategic shading, can help minimize the need for air conditioning, which exacerbates heat.

Explore innovative design and solutions that blend nature with urban spaces. Green roofs and green walls can significantly improve building resilience, while also creating additional green spaces in densely built environments. These modifications not only improve the comfort of indoor environments but also contribute to the larger goal of enhancing climate resilience at the urban level.

For instance, experts are increasingly looking at bio-climatic designs that consider the future climate conditions and the specific needs of plants and vegetation in an urban context. This could involve training professionals to understand plant behaviour in

response to rising temperatures and selecting species that are more adaptable to future climates.

This also means that architecture is increasingly taking on a new role in society. An expert indicates that if architects want to survive, they have to adapt and develop new approaches and focus on creating bio-based components, integrating nature-inclusive designs, sustainable energy systems and social services in the building. This illustrates that by shifting the focus from purely financial returns to other forms of value, such as environmental and social impact, architects can create innovative and impactful projects that may not fit traditional financial models but will provide long-term benefits to society.

Lack of political and public awareness and communication

Challenge: One significant challenge is the fear among authorities of communicating the impact of Urban Heat Island (UHI) effects to citizens. The concern is that raising awareness about excessive city heating and climate change may negatively affect factors like real estate value and public opinion. This creates a barrier to addressing heat resilience in an open and transparent way.

There is also the lack of public awareness regarding the benefits of greenery as a solution for climate adaptation and heat resilience. Citizens tend to prioritize immediate conveniences like parking spaces over the long-term ecological benefits of green spaces, such as cooling and biodiversity. Despite the availability of climate data, such as climatic maps and flood risk maps, local authorities have only recently started to consider these data in addressing urban heat problems

Advice: Raising awareness and fostering public participation is key to creating a collective understanding of the challenges posed by climate change. There is a clear need for better communication and education to raise awareness among the general public about the importance of green infrastructure for both ecological health and human well-being.

The successful implementation of climate adaptation strategies depends on strong community engagement and political commitment. Bringing climate change to the political agenda and ensuring that citizens participate in decision-making processes are critical actions.
Experts suggest that local authorities should prioritize the co-development of projects with residents, ensuring that climate adaptation strategies align with the needs of the people they are meant to serve.

Citizens should be informed about the importance of adapting their homes and communities to heat and climate risks. For example, promoting better natural ventilation and solar shading in buildings, alongside educational campaigns on the

benefits of greening urban areas, can encourage sustainable practices at the individual level. Good examples should be shared more as inspiration to show people what is possible and thus how to benefit from measures on heat stress.

Social disadvantage and vulnerability

Challenge: Heat stress is invisible, but heat waves have a major impact on elderly people, children and those in deprived neighbourhoods. These communities are particularly vulnerable to heat-related illnesses.

Advice: Experts stress the importance of visualising and monitoring the various liveability indicators in urban areas such as socio-economic background, vulnerable people, housing comfort, social cohesion, safety, distance to green spaces, number of green spaces, health, recreation.

It is important of working closely with vulnerable populations to develop solutions that are equitable and accessible. Solutions such as providing heat plans with cool spaces during heat waves, shaded walkways or water features designed for children can be effective ways to alleviate heat stress while meeting community needs.

Complex stakeholder engagement

Challenge: Both internal and external stakeholder engagement can be complicated. Internally, different departments may have conflicting priorities—such as road departments focused on road expansion while water management departments prioritize water drainage. Externally, community participation may complicate the process, especially when residents have conflicting views on the necessity of certain interventions.

Advice: Clear and transparent communication about the benefits of heat resilience strategies is necessary to build consensus and ensure broad support for projects.

Lack of cross-disciplinary and integrated planning

Challenge: Successful heat resilience strategies require cooperation between different departments, such as urban planning, social affairs, water management and ecology. However, there is often compartmentalisation between different stakeholders.

Advice: Urban planners and local governments need to bring together different experts to ensure that projects address multiple concerns (e.g. water management, social needs and infrastructure). Integrating different perspectives into one coherent strategy is vital for effective heat resilience planning.

Lack of understanding the link between ecology and sociology

Challenge: Align ecological goals (e.g., increasing green spaces) with social and economic concerns. For instance, removing parking spaces to plant trees may be seen

as inconvenient by residents. There is insufficient data on how heat waves affect people's quality of life, especially in vulnerable communities.

Advice: A shift in public mindset is needed to show that the social and ecological aspects can go hand-in-hand—both improving the quality of life and increasing ecological benefits. **Engaging residents in the transformation** process are crucial to overcoming these social resistance points.

Work on hard data showing the social and health impacts of heat stress on urban populations. Procure not only on cost but also on impact. Select on socially lowest cost rather than lowest price.

Lack of data driven approach

Challenge: There is a need for more data on the effect of heat stress, greening, heavy rainfall, drought and PET (perceived temperature) on the liveability of urban areas and neighbourhoods.

Such data would demonstrate how green spaces contribute to multifunctional use, improve real estate values, and support local economies. Currently, it is external agencies that have to submit data to municipalities. Municipalities do not generate the data themselves. As a result, the data is only applied to projects where landscape agencies are involved. When conducting ordinary works, there is not enough knowledge available to include/realise climate adaptation in the plans.

Sometimes data is available at the local level, but staff at these municipalities do not know that this data is there.

Advice: Urban planners must consider the liveability data such as social economic background, vulnerable people, comfort, social cohesion, safety, distance to green, amount of green, health, recreation and aesthetics to make informed decisions and tracking the social, health, and economic impacts of heat. This data-driven approach can help cities prioritize interventions in the areas most in need and ensure that resources are allocated effectively.

Lack of long-term planning

Challenge: Transforming cities to be more heat-resilient requires a long-term approach, but political cycles often focus on short-term goals, which hinders effective action. Moreover, many local governments do not have a good understanding of the environmental impacts of their decisions. There is a tendency to see regulations as constraints rather than opportunities to create more sustainable urban spaces. Many cities fail to anticipate and adapt to future climate risks in a coordinated manner.

Advice: The transformation of urban spaces requires continuity beyond election cycles, with a focus on resilience and adaptability rather than quick fixes. Experts stress that

governance must be structured at the right scale to ensure that local governments can engage in long-term thinking. Building a long-term vision for cities, independent of short-term political cycles, is essential to sustainable urban development.

Need of new regulatory

Challenge: The reformation of local regulations to support climate adaptation. Regulatory changes, such as modifying zoning laws to prioritize green spaces and reduce the number of parking spaces, can facilitate the transformation of urban areas into more climate-resilient environments.

Advice: Updating regulations to accommodate unconventional water sources, such as greywater and rainwater harvesting, can significantly contribute to reducing water consumption and mitigating the effects of heatwaves.

Some experts indicate that using nature-based solutions and nature-inclusive construction should become mandatory in all urban development.

Urban infrastructure planning should also integrate climate adaptation into all levels of decision-making. This involves a shift in focus from purely efficient construction to ensuring sufficiency, which prioritizes quality over quantity in urban design. By emphasizing sustainable materials and energy-efficient buildings, cities can move away from reliance on air conditioning and other energy-intensive cooling methods.

Heritage preservation and cooling

Challenge: In heritage cities, there are conflicts between preserving historic aesthetics and implementing cooling measures. Striking a balance between preserving a city's heritage value and implementing modern climate adaptation measures is a complex and ongoing challenge.

Advice: Experts argue that monument conservation must evolve to meet the need for sustainability and that current regulations must be reconsidered to allow for more heat-resistant urban spaces.

Gap between theoretical knowledge and practical application

Challenge: Climate adaptation is often seen as an intimidating and complex issue. While many engineers are aware of the challenges, they do not always specialise in climate adaptation or lack the resources and networks to operationalise solutions. Which makes that many projects struggle with how best to implement heat resistance solutions. Poor coordination between different technical departments (e.g. road management and water management) complicates project implementation, as conflicting priorities may arise**.**

Advice: To support the implementation of innovative strategies, there is a strong call for training urban planners, architects, and city officials in the technical aspects of climate adaptation. This includes providing in-depth education on the ecosystems of plants, hydrology, and bio-climatic design. Understanding how different plants interact with urban environments and how water behaves in the built landscape will allow cities to create more effective, sustainable green spaces.

Furthermore, fostering cross-disciplinary collaborations among urban planners, engineers, architects, and hydrologists is essential to ensure that cities are equipped with the knowledge and tools to adapt to climate change. This collaboration is key to developing integrated solutions that address both water management and the environmental impact of urbanization.

Another innovative approach is the integration of wind considerations in urban planning. By understanding and harnessing natural wind patterns, cities can improve air quality and facilitate natural cooling in both public and private spaces.

Lack of understanding and management of water in the urban environment

Challenge: Many cities focus on green spaces for aesthetic purposes or to increase biodiversity, but experts emphasize the importance of water management in public spaces to combat heat. Water management is often housed in specific departments, such as urban planning or road management, but it is a cross-sectoral issue that requires cooperation between multiple sectors.

Advice: Stop viewing water as something to be 'fought' with infrastructure such as dykes and pumps and instead focus on adaptation to water. Focus on water management because natural cooling solutions, such as incorporating vegetation and using rainwater, not only help reduce heat but also help prevent flooding during heavy rainfall. The gap needs to be closed through better education and planning.

Lack of understanding the interaction between water and soil

Challenge: Experts emphasize that water infiltration into the soil not only improves soil quality but also supports changes in farming practices and land use. This process can help mitigate urban heat by retaining moisture and cooling the environment.

Advice: Focus on more research and understanding of how soil and water management can be better integrated into urban planning and adaptation strategies. This includes adopting greywater recycling systems, which offer a sustainable water source, particularly during heatwaves. Cities can also integrate rainwater harvesting and permeable surfaces to improve water retention and reduce flooding. By embracing soil softening and creating spaces that encourage water infiltration, cities can mitigate the heat island effect and improve water management. A **holistic approach** to urban water

management involves collaboration between multiple departments, from urban planning to water and green space management.

Understanding Subsidies

Challenge: Another area of knowledge deficiency is the integration of subsidies for water management, particularly in urban areas. Understanding how to access and use water-related subsidies from agencies such as the Water Agency (Agence de l'Eau) is crucial for municipalities looking to test and implement new water management strategies.

Advice: Experts note that these opportunities for funding and support are underutilized, and there is a need for more guidance**.**

Conclusion

From the experts' point of view, the training program for local authorities should focus on:

- Increasing knowledge about heat, water, climate change and its impact on the city and liveability.
- Strengthening the capacity of local policymakers to place climate adaptation on the political agenda and develop concrete long-term strategies.
- Promoting collaboration between various municipal departments and external experts to develop integrated solutions.
- Improving knowledge of new technologies and innovations for urban climate adaptation, such as green infrastructure and sustainable water & wind management practices.
- Teaching practical skills for adjusting regulations and creating policy environments that enable climate adaptation.
- Encouraging community engagement in the climate adaptation process.

Insights from a trainers' perspective

Within the Province of Antwerp, we have already built up a lot of experience with our training module on dehardening for local governments. These insights, combined with the feedback gathered from participants and colleagues, can be found below:

- There are different needs per persona, so it's crucial to develop a user-centred design.
- The three weather extremes: heat, flooding and drought are inextricably linked.
- Dare to differentiate, indicate per module who the target group is.
- Properly include council member at the beginning and at the end.
- Civil servants need follow-up after guidance: How get to work in concrete terms.
- More attention to intervision.
- More attention to participation and communication.
- It works to let a concrete case grow during the process.
- Keep contact with municipality alive, also after the project.

Conclusion

Based on needs analysis and input from partners, local authorities, experts, and trainers, the key insights that can serve as the foundation for the training program.

The training modules should respond to these needs:

- Actual information about heat stress, water management, ecosystems and the **health impacts** of heat stress and **strategies** to mitigate them. This should include various indicators around **liveability** such as socio-economic background, vulnerable people, housing comfort, social cohesion, safety, distance to green space, amount of green space, health, recreation and aesthetics.
- **Practical, immediately implementable interventions**. This includes:
    - clear information on **technical solutions** to reduce heat (such as urban greening, efficient water management strategies, and proper vegetation selection)
    - **insights into the effectiveness** of these measures
    - **cost-benefit analyses**
    - **financing options** like subsidies
    - **good practices**
- The **use of consistent decision-making** models and **practical tools**, supported by relevant **good practices**.
  Local authorities and involved professionals (such as architects, engineers, and planners) require:
    - **identify** and address local risks using **data** and correct interpretation of data.
    - **guidance** to translate technical data and climate models into feasible, **long-term adaptation strategies.**
    - Practical knowledge on implementing nature-based solutions.
    - information on how different departments and stakeholders can work together in an **integrated way.**
- **Raise awareness of the benefits** of green infrastructure and climate adaptation by
    - **effective communication strategies**
    - **participation strategies**

  These strategies are crucial for **engaging** both citizens and policymakers, thereby encouraging behavioural change, and making the **impact** of implemented measures visible.

Training programs should be **user-centred**, clearly differentiating modules per target audience (from municipal council members to civil servants), and must provide support for putting the acquired knowledge into **practice**.

Apart from the training, establishing long-term contacts and peer to peer coaching is essential in strengthening climate adaptation work.

Annexes

Annex 1 Results quiz Mentimeter

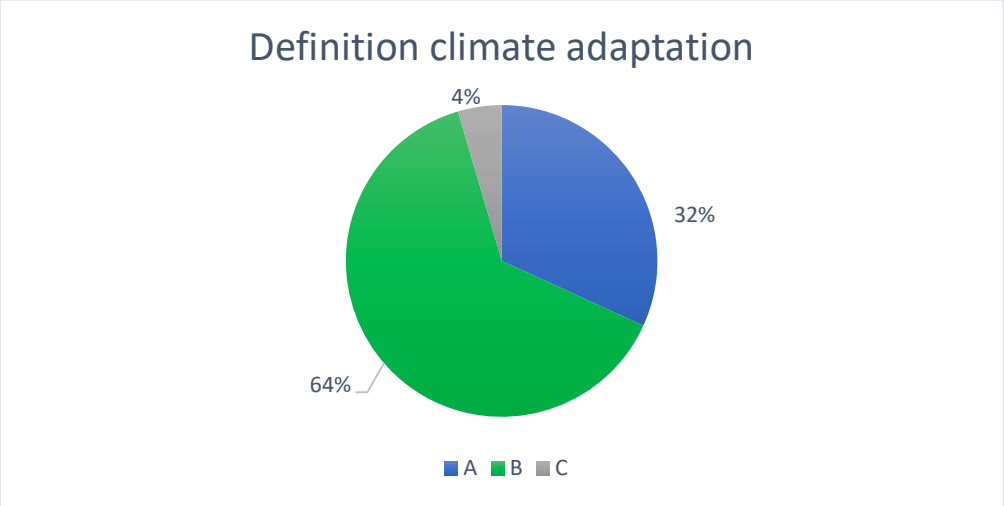
Technical jargon

What definition of Climate adaptation is correct?

A) Adapting to climate change involves ensuring that the climate stays stable and unaffected by human activities through conservation efforts.

B) Adapting to climate change means taking action to adjust to its present and future impacts.

C) Climate adaptation is the process of reversing climate change by restoring ecosystems to their original state

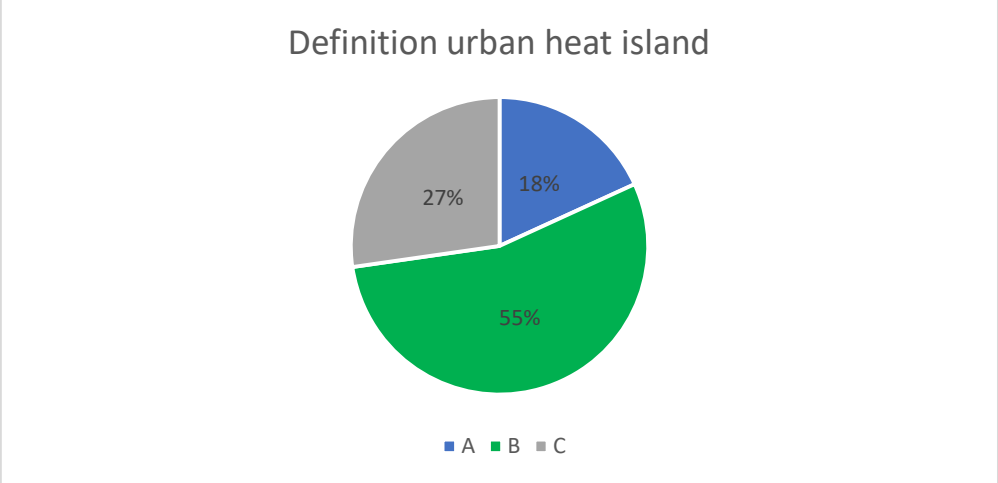


What definition of urban heat island is correct?

A) An urban heat island occurs when it has not rained in one place for an extended period.

B) An urban heat island occurs when a city experiences much warmer temperatures than nearby rural areas.

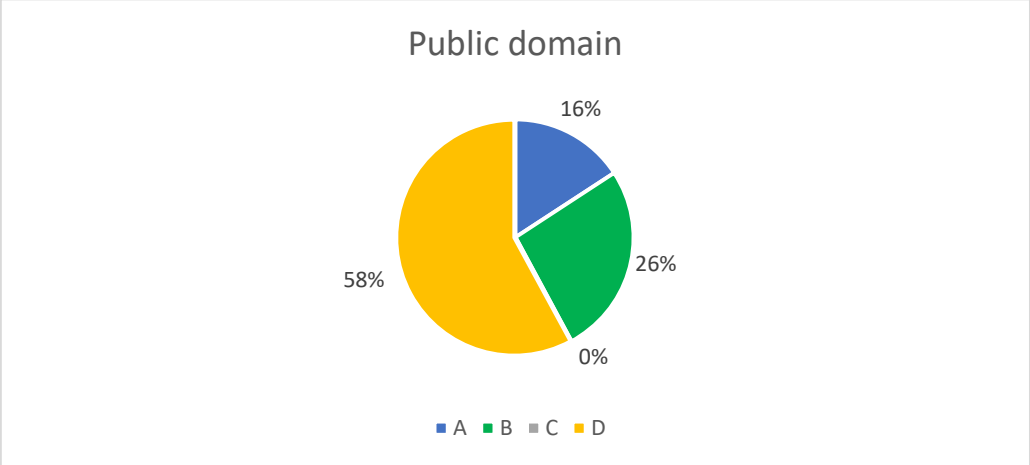
C) An urban heat island causes higher UV radiation, increasing the risk of overheating, sunburn and dehydration for people and animals.



Analysis and data

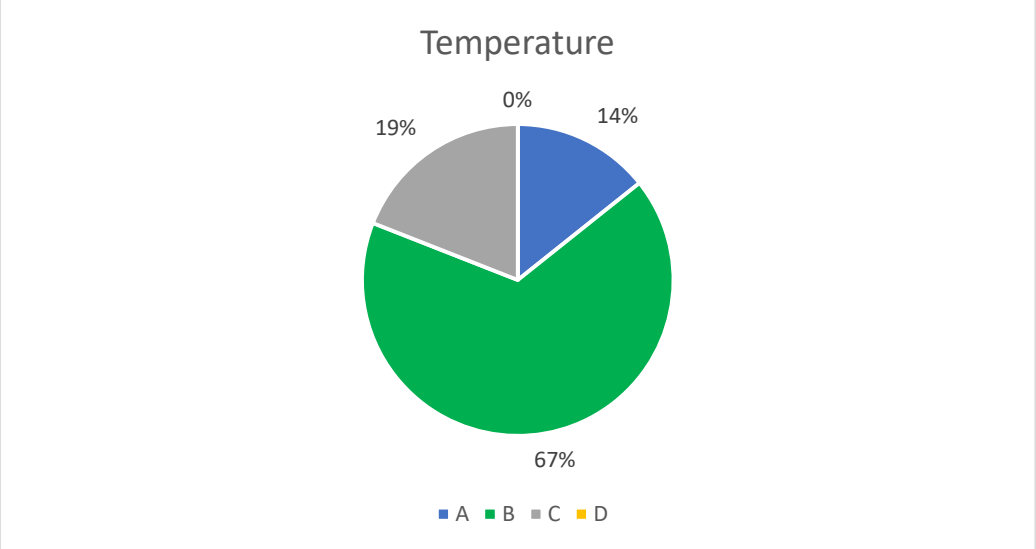
Which of the following municipal domains are most affected by heatwaves and high temperatures in cities?

A) Urban green space management
B) Public health and well-being
C) Sewage
D) All of the above



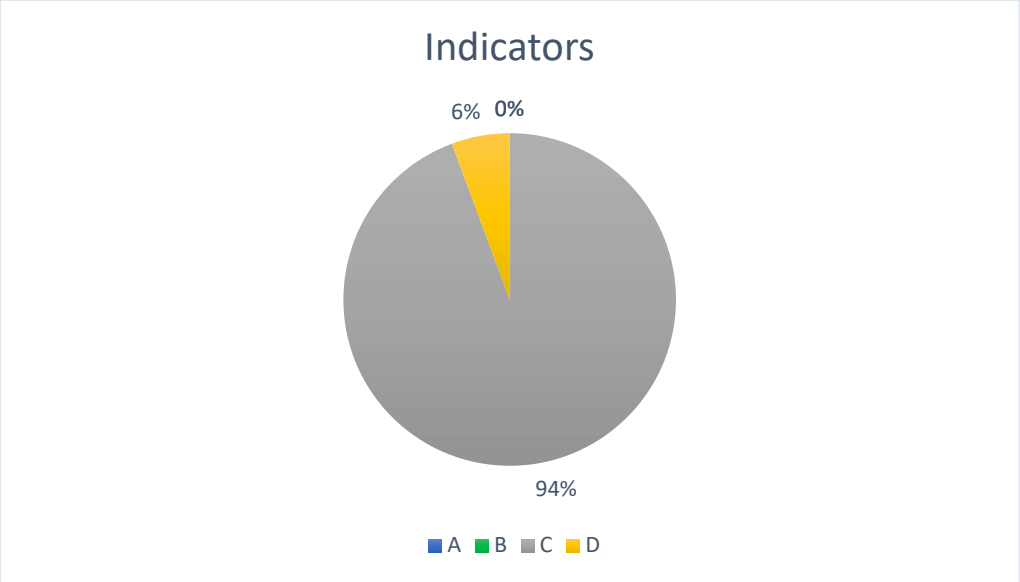
What is the maximum recorded temperature difference in the gardens around the pilot site PIVA in the city of Antwerp during the hottest midnight of 2021 (June 18th)?

A) 12,4°C
B) 9,6°C
C) 5°C
D) 3,7°C



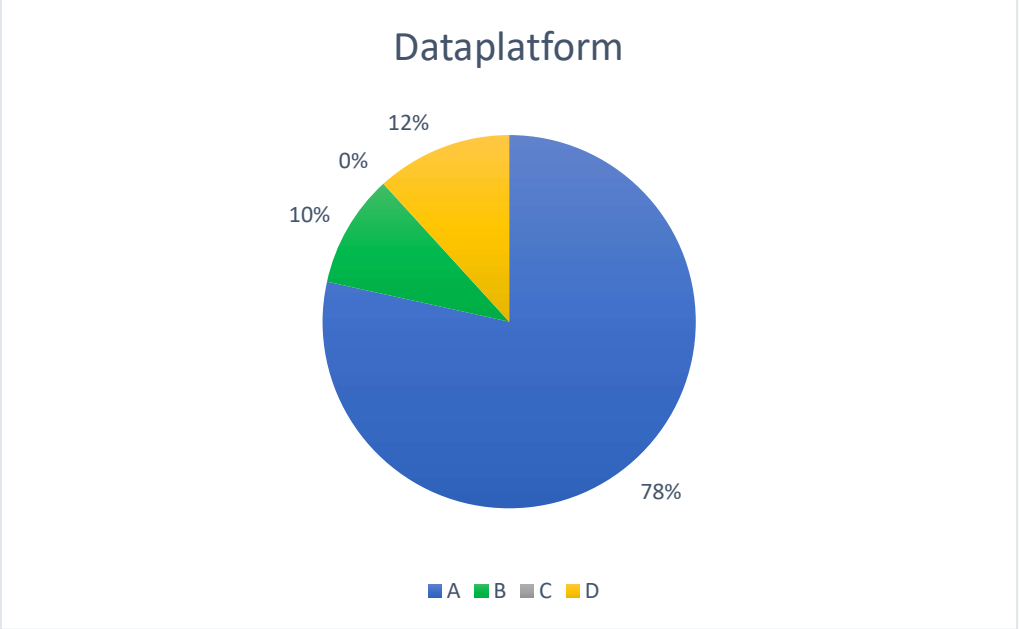
Which of the following indicators is most commonly used to measure heat intensity in local neighbourhoods?

A) Average wind direction
B) Soil moisture
C) Surface temperature of asphalt
D) Average air quality



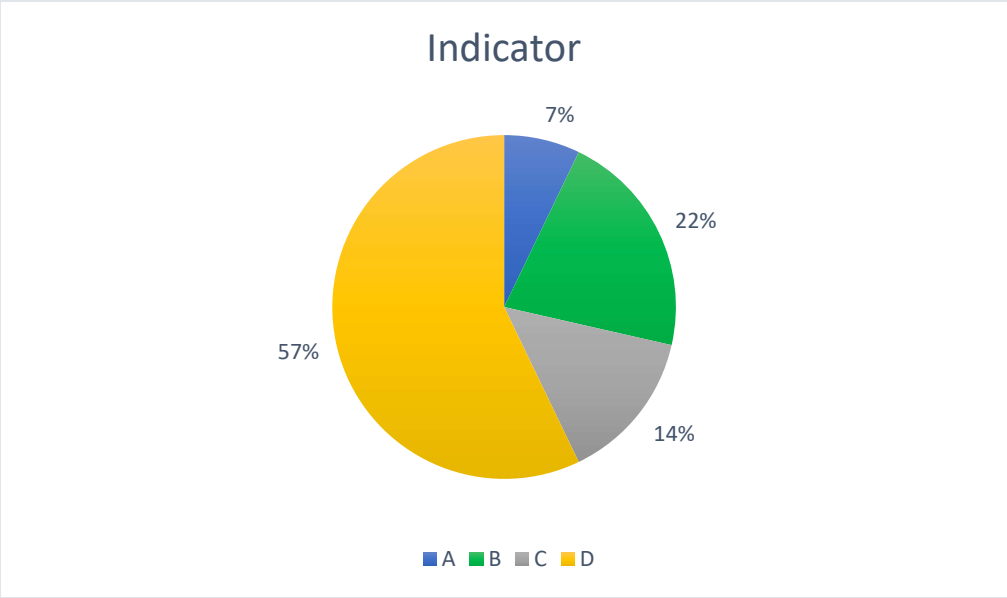
Which of the following platforms CANNOT provide me with data on heat?

A) Copernicus
B) Climate-ADAPT
C) European heat Initiative
D) Eurostat



Which indicator does NOT contribute to mapping heat stress on neighbourhood level?

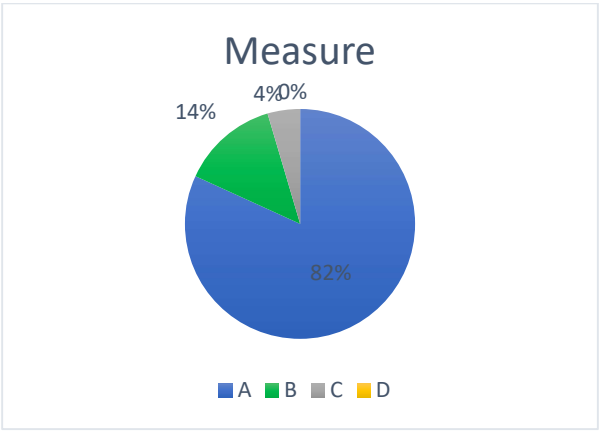
A) Number of heat waves per year
B) Air pollution levels
C) % of tree canopy cover
D) Number of connections to district heating networks



Measures

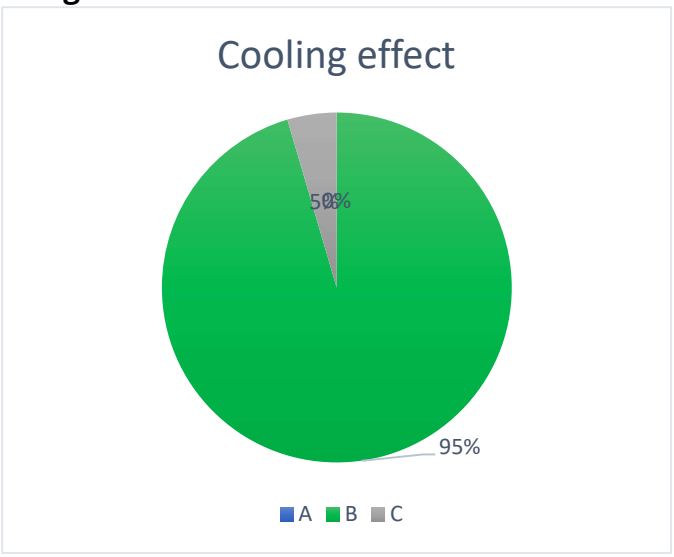
Which measure does not contribute directly to combatting the Urban Heat Island effect?

A
B
C
D

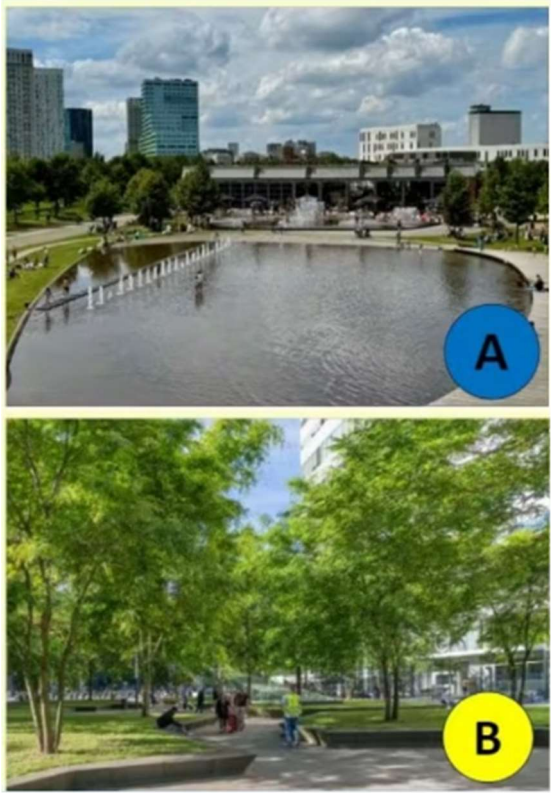


Which measure has the greatest cooling effect?

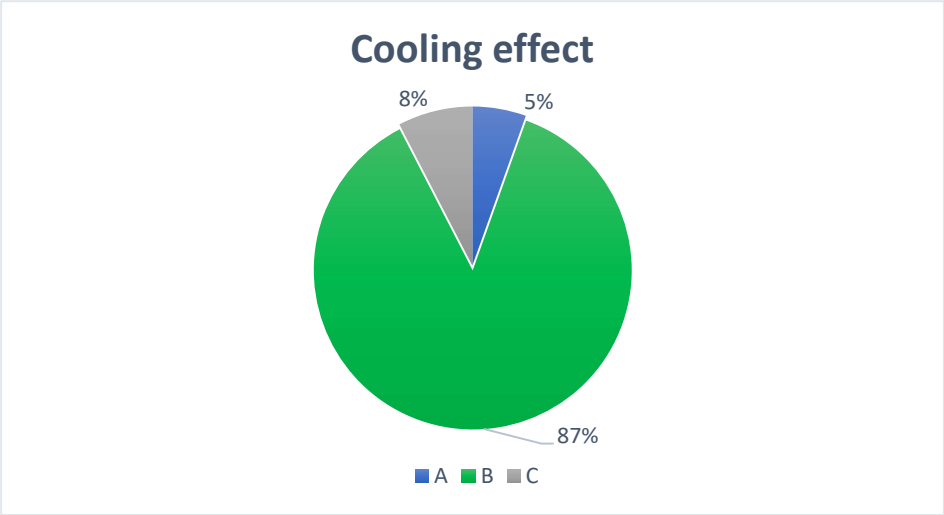
A
B



Which measure has the greatest cooling effect in the long term during a heatwave?



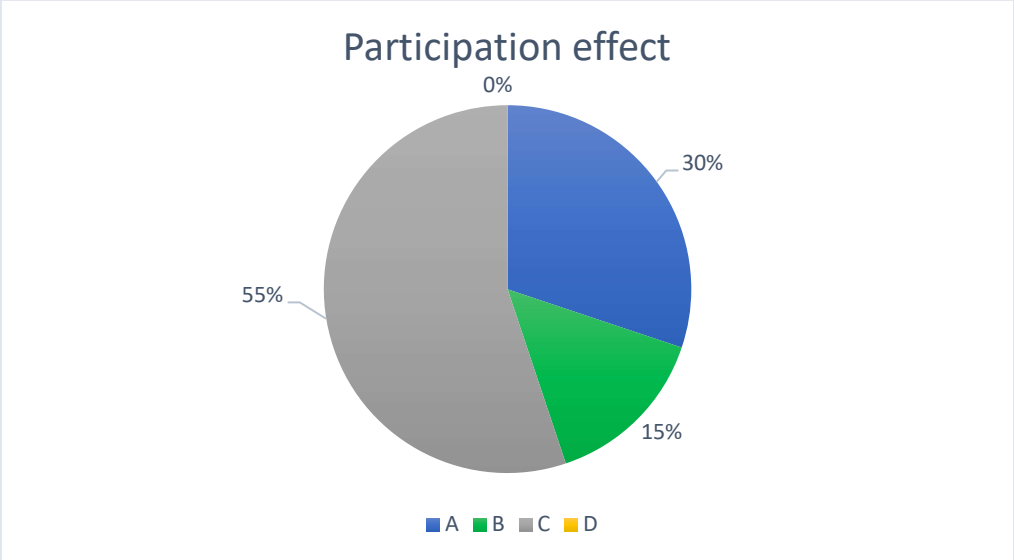
A)
B)
C) Both



Participation

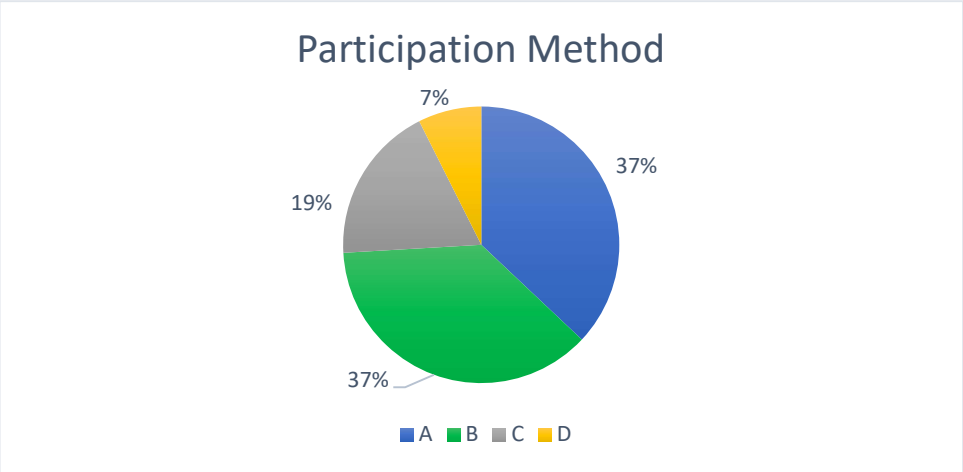
What is an important effect of resident participation in combating climate change in local communities?

A) It increases the costs of climate adaptation projects.
B) It reduces the need for government intervention
C) It enhances the effectiveness and sustainability of climate measures
D) It lowers the priority of climate change on the political agenda



Which method is most effective for promoting resident participation in climate projects?

A) Send out a questionnaire
B) Host informational sessions and workshops to increase awareness
C) Offer Incentives such as grants for active participation
D) Visit residents in their neighbourhood to gather feedback



Costs and benefits

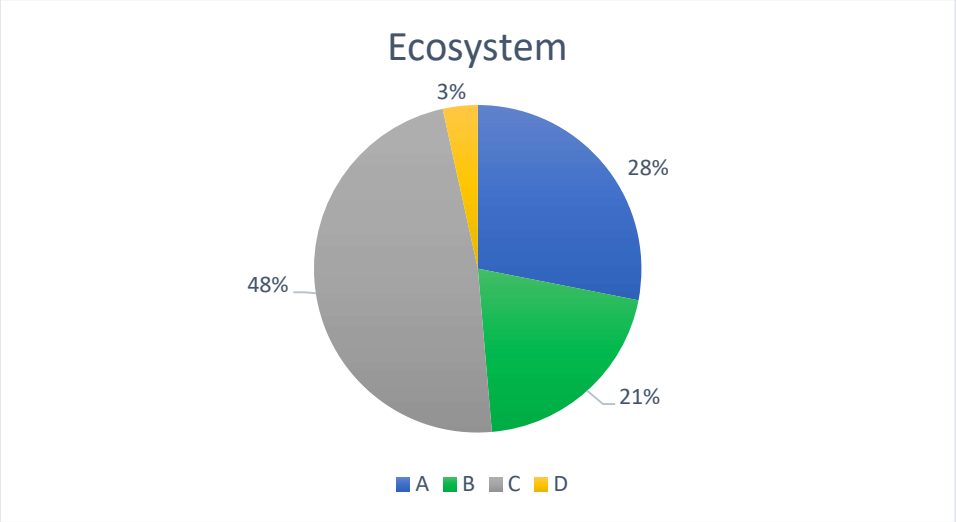
Which of the following examples is NOT an ecosystem service?

A) Pollination of crops by bees

B) Recreation and relaxation in natural areas

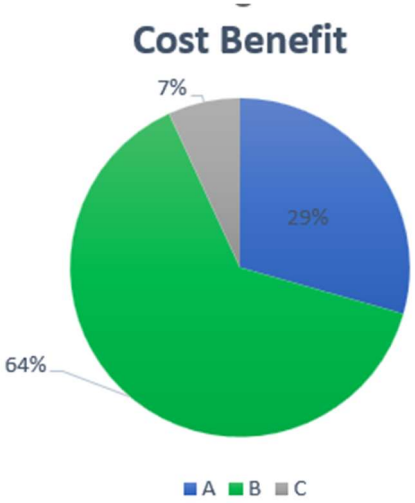
C) Building a dam for energy production

D) Carbon storage by forests



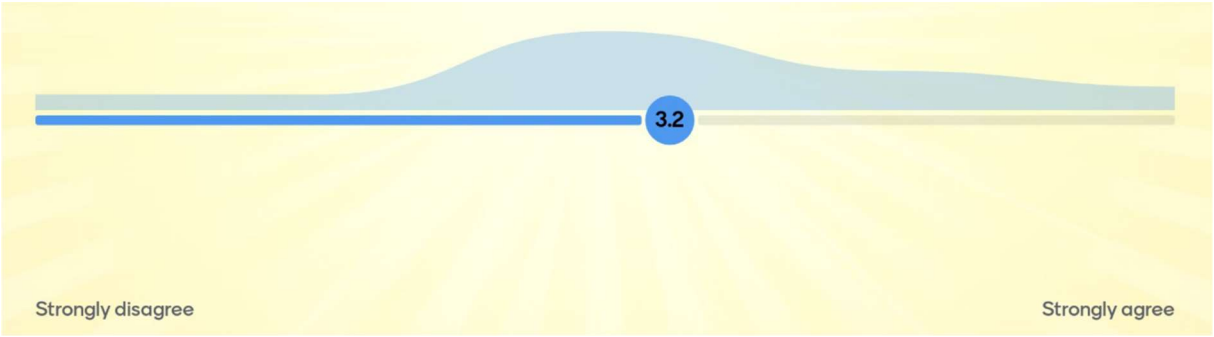
Which measure has the best cost-benefit ratio?

A)
B)
C)



Execution

I have sufficient knowledge about designing public spaces to be heat-resistant



I would like to learn more about…

- Heat stress
- Concrete measures
- Political vision
- Heat stress measures (concrete interventions)
- Challenges
- Measurements and cost-benefit

- Growing conditions for trees
- Making long term sustainable plans for heat stress
- The need for design tools/education/materials/expertise
- Cost-Benefits (comparative)
- Technical solutions & costs
- How participation will work in pilots of other countries
- How to increase and show Impact of citizens action on climate
- Information sources
- How effective different measures are to reduce heat
- Cost benefits in different surroundings
- Cost-benefit
- Site-specific best practices
- Quick and easy ways to cool down the temperature
- Measures for increasing heat-stress awareness.
- To engage citizens in Climate Adaptation including heat stress
- Subsidies or other incentives
- Good examples
- Best practices
- apply consistent choices and decision model
- Integrating heat stress measurements in smart urban cities

Annex 2 Microsoft forms survey en results

The_heat-is-on_survey_results.pdf

Annex 3 Guideline Interview Experts

Guideline interview + template output

I am [your name] from [your organization].

This interview is part of the European project *Cool Neighbourhoods*, which focuses on reducing heat risks at a hyperlocal level. The project takes place in 9 pilot areas across the Netherlands, Belgium, France, and Luxembourg, representing three types of neighbourhoods: inner city, green hubs, and economically deprived areas. Our goal is to green over 30,000 m² of public space.

Beyond addressing physical heat factors, the project also focuses on enhancing neighbourhood liveability—improving health, recreation, social cohesion, and more. We aim to address local heat risks while exploring how cooling interventions can make a meaningful impact.

To support local authorities, we are developing training modules. To do this effectively, we need to identify key areas of expertise as well as existing knowledge gaps. Through this interview, we hope to gather your insights and suggestions on these topics.

The interview will take just under an hour.

Name	
Date interview	
Organisation	
Scope of your work?	
What is your specific expertise?	• … • …
How do you address heat risks and cooling in your work? (e.g., strategies, tools, interventions)	• … • …

Do you work directly with municipalities or other local authorities?	Yes: What kind of local authorities? No: If you don't work directly with local authorities, who are your main clients or partners?
What challenges do you notice local authorities/partners face when dealing with heat and cooling?	• … • …
What gaps in knowledge or expertise do you observe in municipalities regarding climate adaptation and heat?	• … • …
How does your expertise complement or add value to the work of local authorities?	• … • …
Based on your experience, what are the 3 most important actions or strategies a local government should adopt to address heat and climate adaptation effectively?	1. … 2. … 3. …
Are there any innovative or emerging approaches you think could benefit local	• … • …

authorities in addressing heat risks?	
Can we contact you later to provide feedback on the developed trainings?	• …
Thank you so much for your time and your insights.	

Annex 4 Consolidated action list according to experts

- ☐ Plant trees to provide shade and improve the urban environment.
- ☐ Implement more green spaces in urban areas, using them to reduce heat and improve climate resilience.
- ☐ Create green roofs and walls to combat Urban Heat Island (UHI) effects and increase biodiversity.
- ☐ Improve water retention strategies (e.g., desilting and retention basins).
- ☐ Adopt more sustainable water management practices, considering grey water, soil permeability, and infiltration.
- ☐ Work on soil softening and greening areas to allow better water absorption.
- ☐ Utilize greywater systems in public spaces during heatwaves to reduce reliance on potable water.
- ☐ Promote renovation of existing buildings over new construction, focusing on reducing ecological footprints.
- ☐ Encourage energy-efficient buildings with good natural ventilation and shading to mitigate heat effects.
- ☐ Engage citizens in the design and implementation of urban climate adaptation projects.
- ☐ Initiate heat action plans to raise awareness about vulnerable areas and involve communities in identifying solutions.
- ☐ Facilitate social meetings in public spaces designed for cooling, fostering both climate resilience and community interaction.
- ☐ Provide residents with information on how to mitigate heat within their homes (e.g., through better use of natural ventilation and cooling strategies).
- ☐ Facilitate ongoing dialogue between local authorities, citizens, and experts to co-develop climate adaptation solutions.
- ☐ Initiate cross-disciplinary collaboration involving departments like town planning, water management, and green spaces for better integration.
- ☐ Update local regulations to prioritize green infrastructure, such as more green spaces instead of car parks, contributing to both climate resilience and aesthetic quality.
- ☐ Promote energy-efficient cooling technologies in urban areas (e.g., passive cooling in buildings) to reduce the reliance on air conditioning, which exacerbates heat.
- ☐ Develop a long-term territorial planning tool that is independent of political timelines to ensure that climate adaptation and UHI mitigation strategies are planned and implemented beyond political terms.
- ☐ Focus on socio-economic discussions about climate adaptation, integrating climate change into local political agendas and making it part of the local debate between citizens, politicians, and experts.

- □ Invest in training for urban planners, architects, and city officials on the environmental and hydrological impacts of their decisions. Focus on a deeper understanding of plant ecosystems, evapotranspiration, and the complex interactions between plants and urban climates.
- □ Equip professionals with technical knowledge in water management, plant engineering, and sustainable urban planning to improve the adaptation of cities to climate change.
- □ Encourage innovation in hydrology and plant engineering through research and collaborations with experts to design more effective urban ecosystems that can thrive in a warming climate.
- □ Incorporate wind into urban climate strategies, understanding the local wind patterns to improve urban cooling and air quality.
- □ Shift focus from efficiency to sufficiency in urban design, encouraging quality over quantity. This could include optimizing building designs that allow for natural ventilation and reducing dependency on artificial cooling systems.
- □ Promote passive measures in buildings, such as shading and heat-resistant materials, to avoid pushing buildings to use excessive energy for cooling.
- □ Challenge outdated regulations (e.g., cultural and heritage restrictions) that hinder the implementation of new climate adaptation solutions.
- □ Redefine urban development priorities by creating urban spaces where climate adaptation strategies, such as water retention and green infrastructure, are prioritized over traditional urbanization.
- □ Strategy: Integrate biodiversity with urban planning, ensuring that green spaces serve not only as a cooling mechanism but also as biodiversity hubs.
- □ Collect and analyze data on the social, health, and economic impacts of heat to create a solid foundation for making informed decisions about climate adaptation. Use this data to prioritize interventions in the most vulnerable areas.
- □ Expand the use of greywater systems and non-potable water for irrigation and cooling in urban areas, especially during heatwaves.
- □ Implement bio-climatic plant systems in urban planning, focusing on selecting plants that adapt well to global warming and heat stress.
- □ Develop comfort tools that ask residents about their needs and preferences, using this data to inform architects and urban planners on how to improve living conditions during extreme heat events.
- □ Promote the use of passive cooling techniques such as appropriate solar shading and cross-ventilation to reduce reliance on air conditioning and improve energy efficiency.