Citizen Science for Better Air Quality in Action

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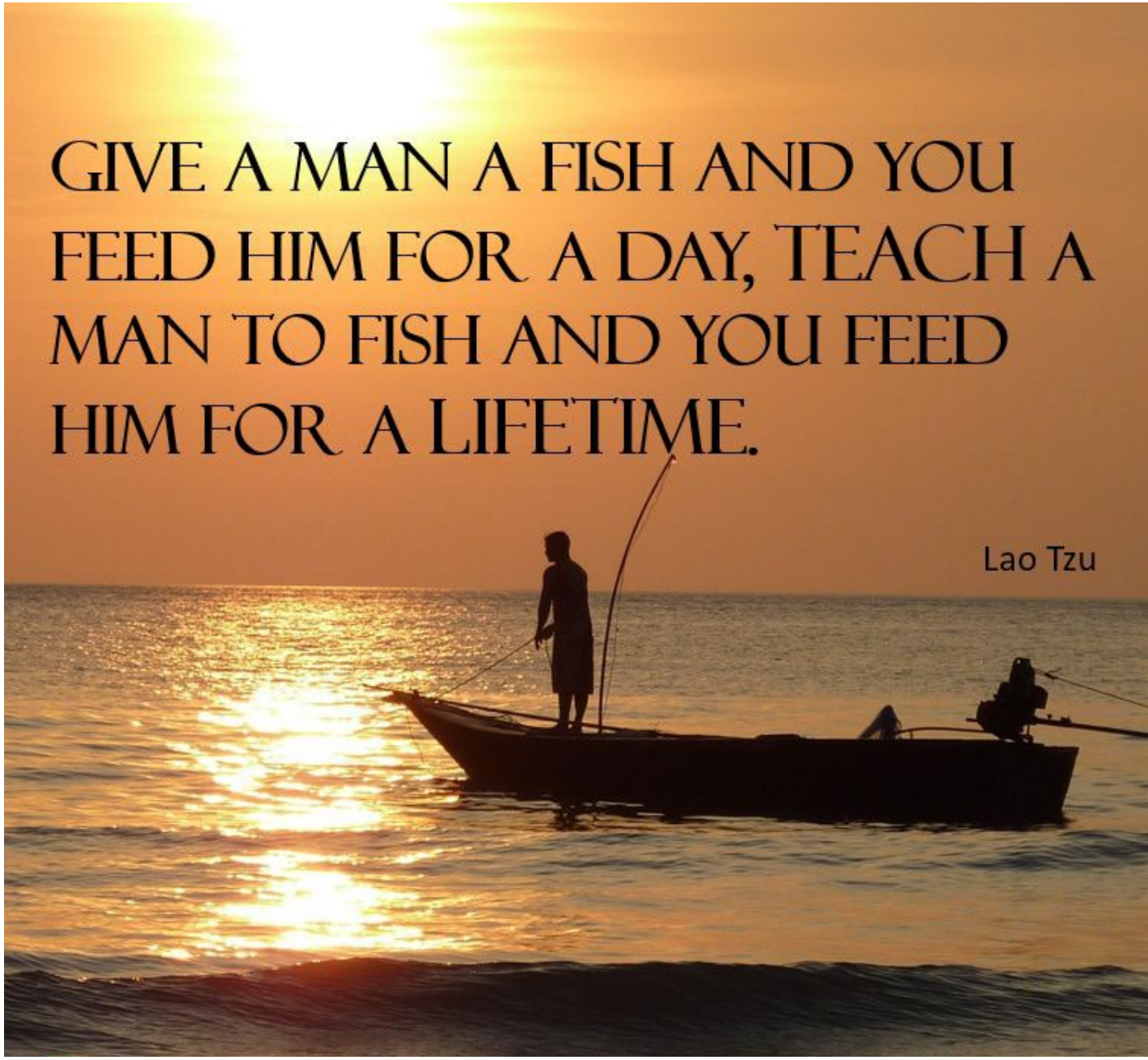
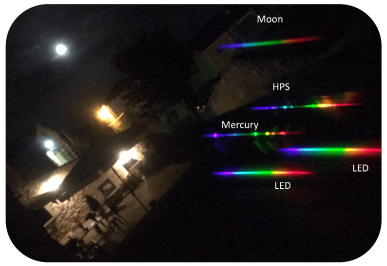
Why engaging citizens in science and policy will help cities?

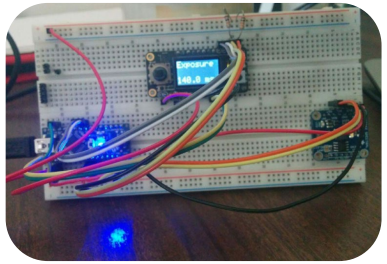


1. Cities need relevant and insightful environmental data for decision making. Current monitoring systems are costly and do not always have data when and where need it.
2. Information needs to resonate to people in a world full of “noise” and “fake news”.
3. Cities need actions to reduce the impacts of climate change and environmental degradation to the health of the citizens and the planet. Cities do not have time to lose.

ACTION citizen science projects



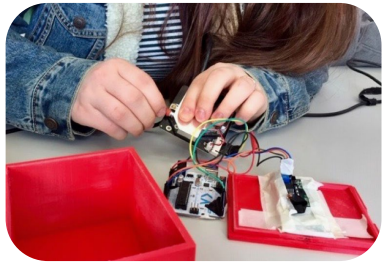
Street Spectra (light pollution, ES)



Street Colours (light pollution, ES)

Tatort Street Light (light pollution, DE)

Loss of the night (light pollution, worldwide)



DYI sensing (air pollution, NO)

Dragonflies and pesticides (chemical pollution, NL)

CitiComPlastic (plastic pollution, NO)

In My Backyard (pesticides, PT)

Noise Maps (noise pollution, ES)

Sonic Kayaks (water / air pollution, UK)

Water for Future (water pollution, IT/CL)

WOWNature (air pollution, IT)

Citizen generated data can complement current measurements and increase the number of observations of the (urban) environment.

Data collection

Data Quality

Sufficient level of detail

The data is collected with continuity

The data is not affected by extraordinary events

Accurate information

FAIR

Correct categorization of the data

Comprehensive observations of the surrounding environment

Full coverage of the relevant area/problem

Proper calibration of instruments

Completeness of the data collected (numerous indicators)

Main Barriers

The usage of technologies (even if basic)

Difficulties in task execution that request collaboration with experts

Different competing priorities for volunteers

Time availability of participants

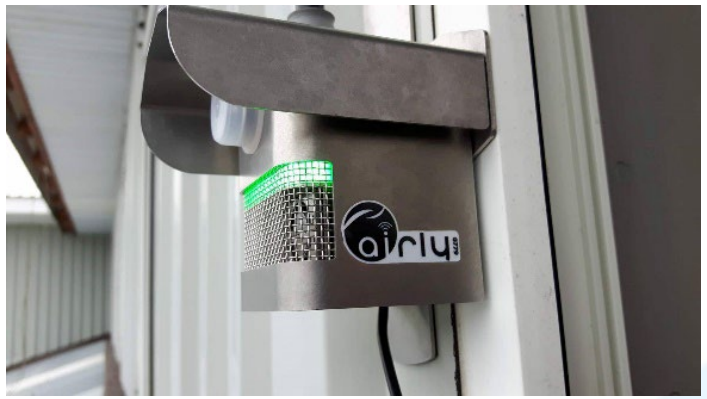
Damaging or stealing of sensor

Incomplete information from volunteers

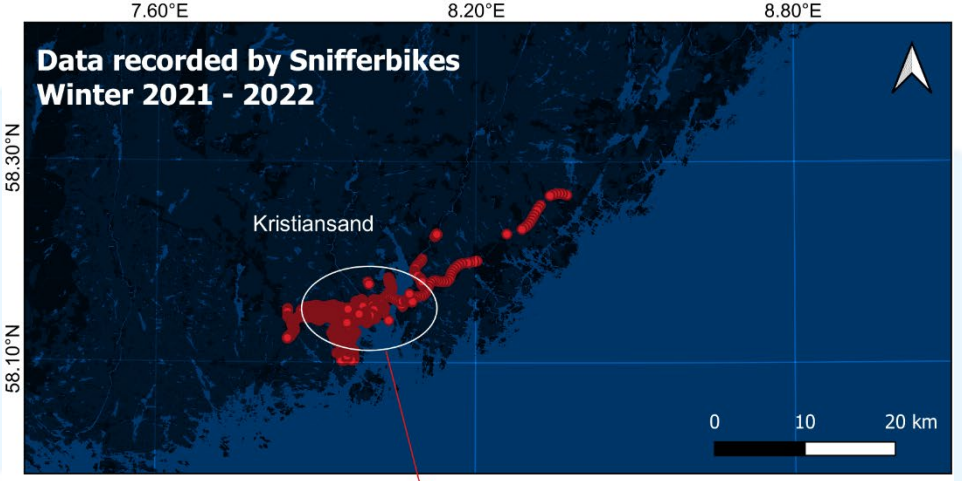
Adequate quantity of volunteers

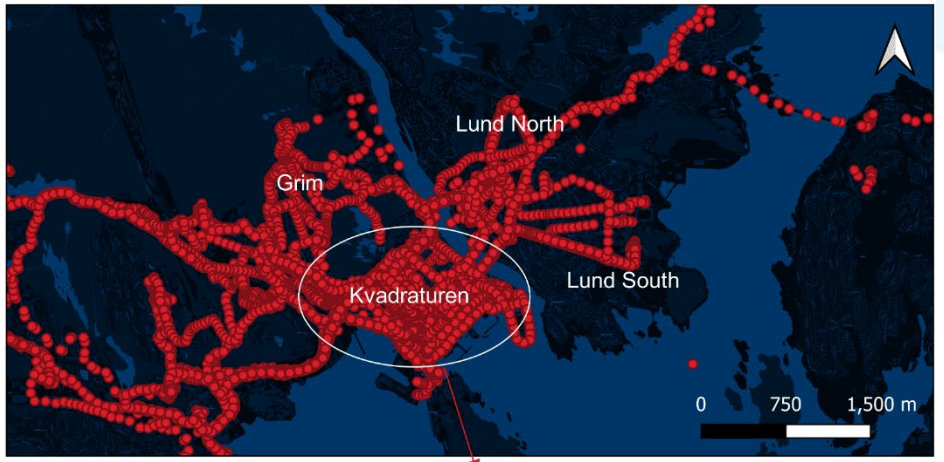
Fully understanding of the participants about what we are looking for

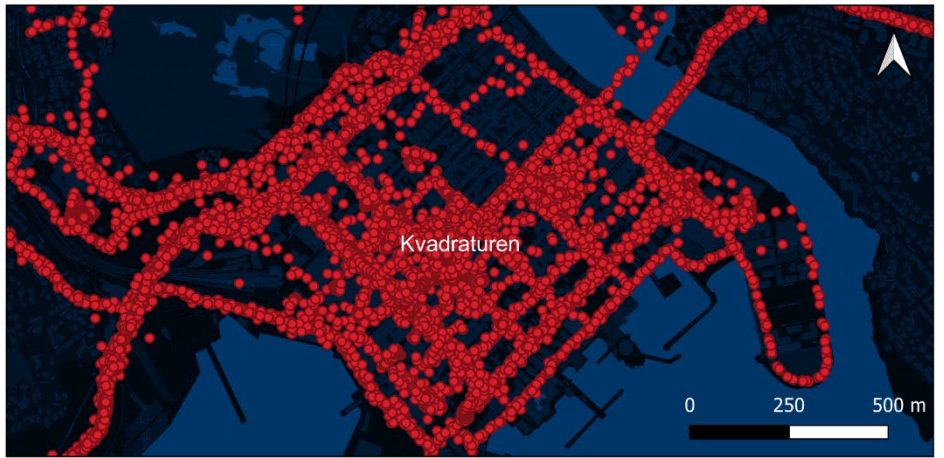
Guarantee stable support and training to participants

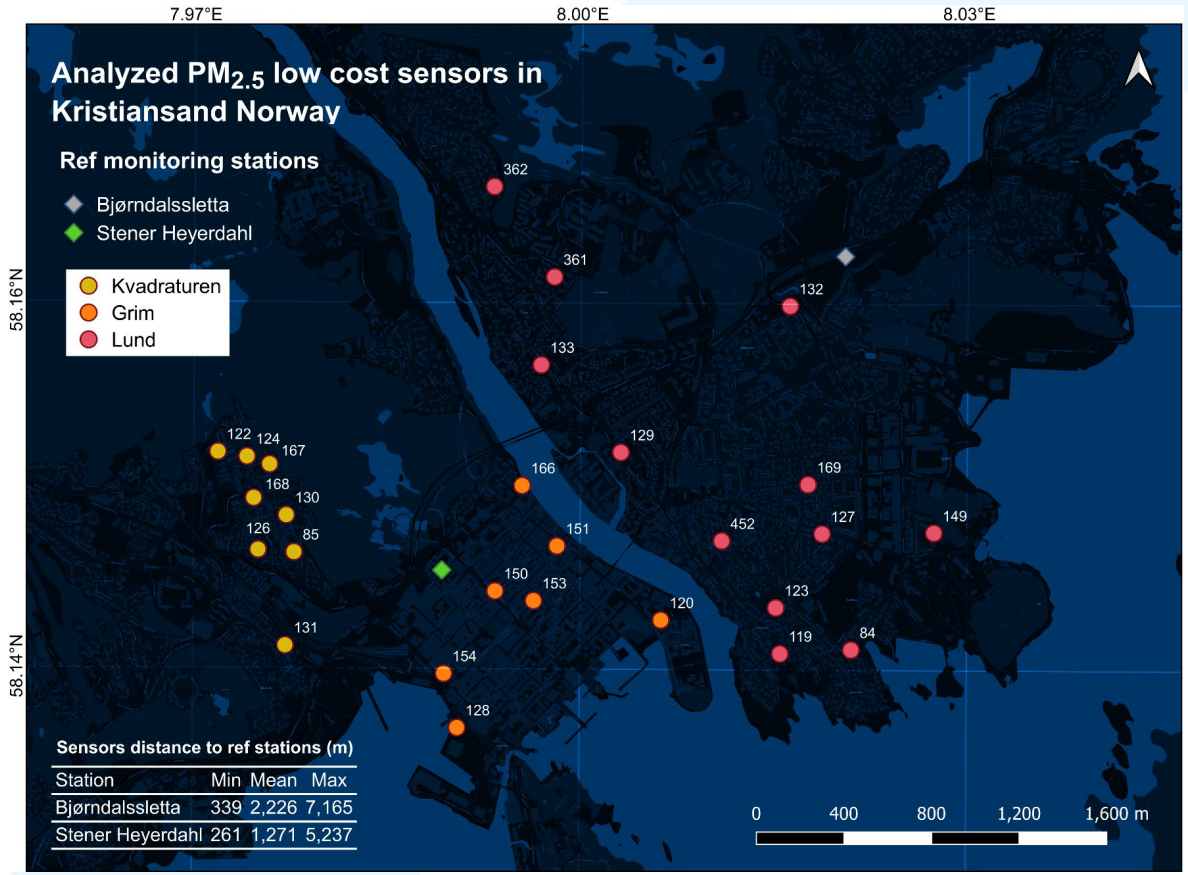

airly

SNIFFERBIKE


Data recorded by Snifferbikes
Winter 2021 - 2022
7.60°E
8.20°E
8.80°E
58.30°N
58.10°N
Kristiansand
0
10
20 km


Lund North
Grim
Kvadraturen
Lund South
0
750
1,500 m


Kvadraturen
0
250
500 m


Analyzed PM2.5 low cost sensors in Kristiansand Norway
Ref monitoring stations
Bjørndalssletta
Stener Heyerdahl
Kvadraturen
Grim
Lund
7.97°E
8.00°E
8.03°E
58.16°N
58.14°N
362
361
132
133
129
166
169
122
124
167
168
130
126
85
151
452
127
149
150
153
120
123
131
119
84
154
128
0
400
800
1,200
1,600 m
Sensors distance to ref stations (m)
Station Min Mean Max
Bjørndalssletta 339 2,226 7,165
Stener Heyerdahl 261 1,271 5,237

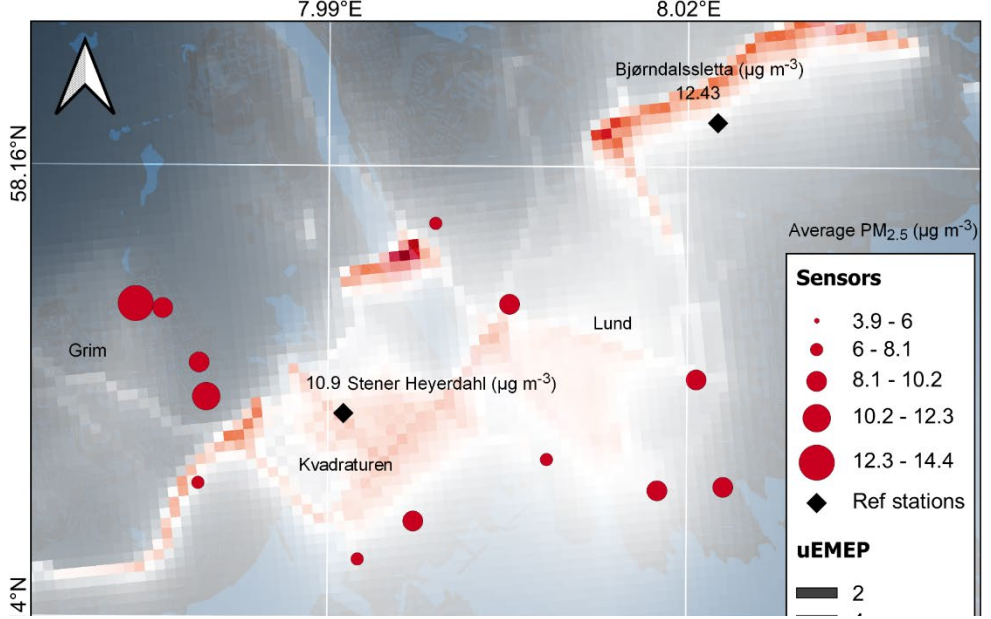
Sensor data assimilation

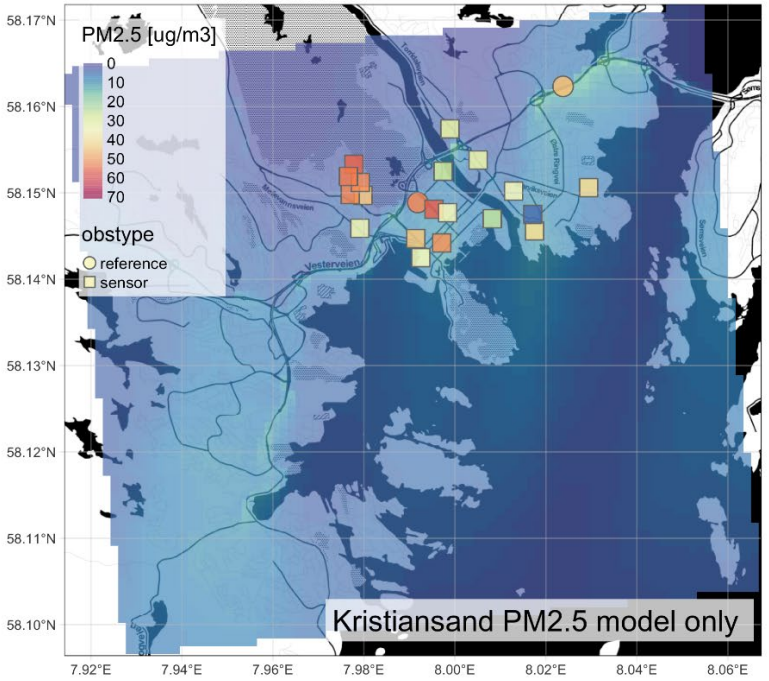
Sensor observations

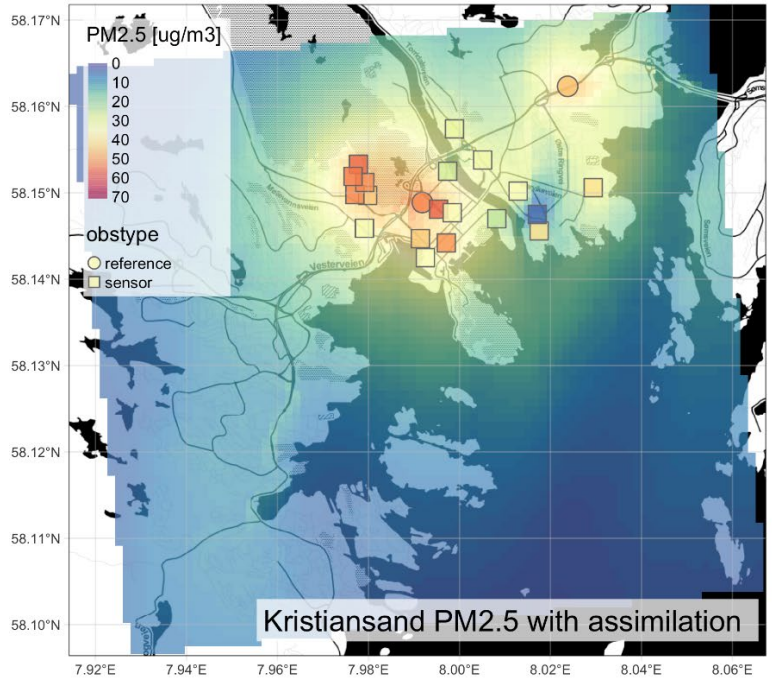
Model output

Data assimilation

Near real-time high-resolution urban air quality map





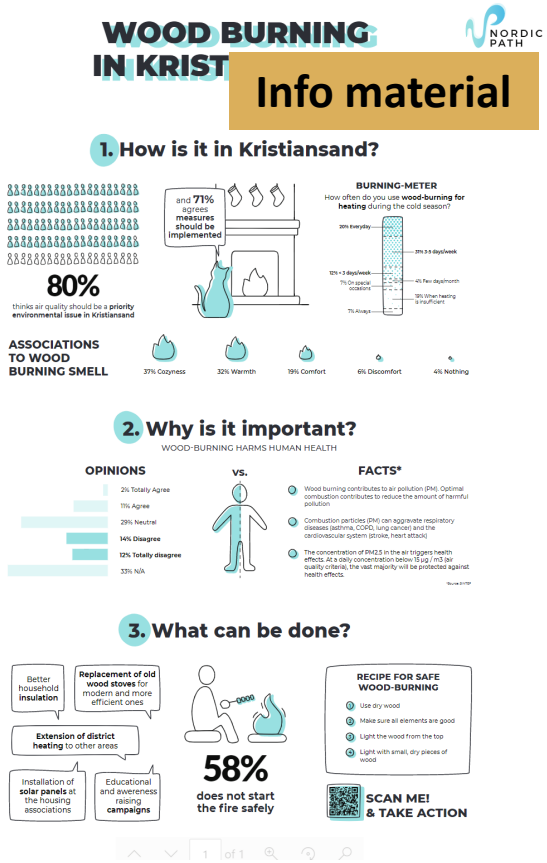


Citizen Science increases awareness, involvement and engagement of citizens from all backgrounds and age with science and policy.

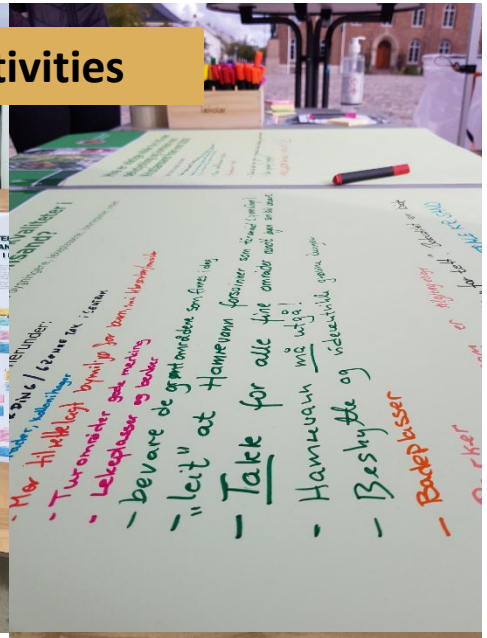
Workshops & Surveys

Residents are invited to co-creation workshops to discuss new incentives and policies towards healthier cities

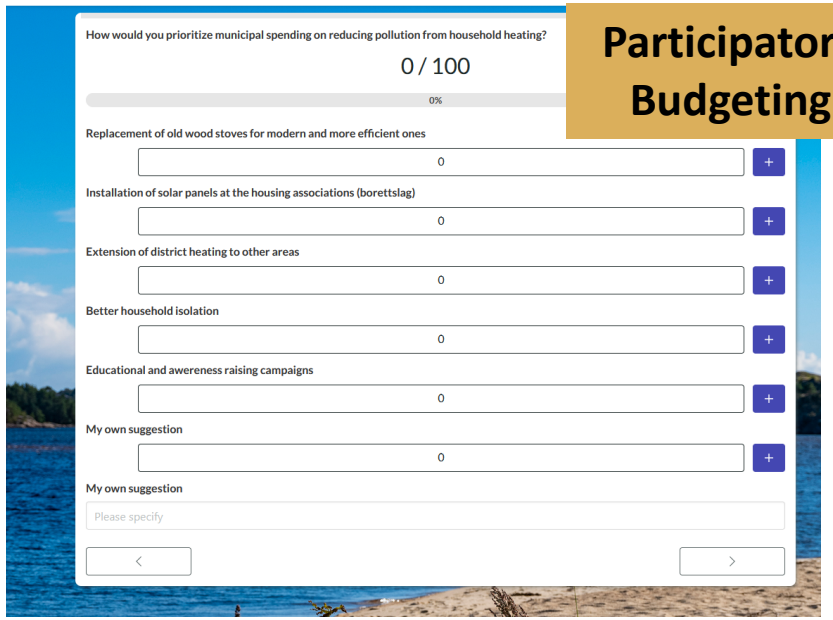
Info material



Street Activities



Participatory Budgeting



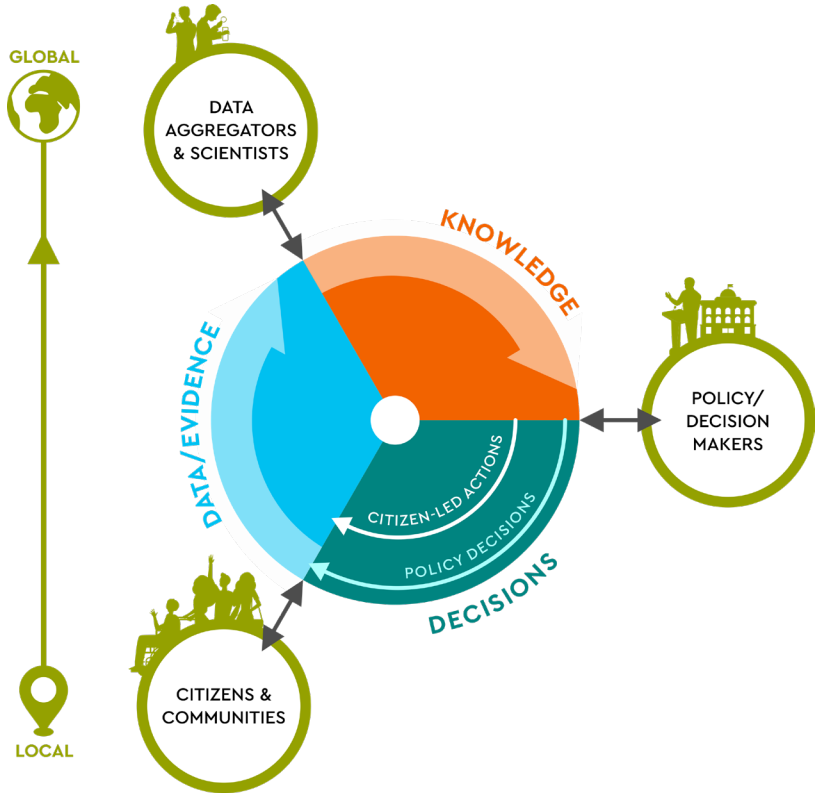
Citizen Science increases opportunities for shared responsibility in the protection of the (urban) environment and deepens the role of citizens in governance.

Co-creation of data and actions for healthy, sustainable and resilient cities with Citizen Observatories

5 Frontrunners

30 Implementers

50 Fellows



New Horizon Europe Project: CitiObs

CitiObs will connect, support, enhance and scale up COs so they can provide the locus for jointly monitoring the environment, and for initiating and undertaking citizen-led actions protecting the urban environment, alongside changes in policy.

Citizen Science is a powerful research and policy-making approach in support of cleaner air, providing:

- Data
- Awareness
- Actions

It is important to integrate Citizen Science in research and governance to achieve the zero pollution goals.

Thank you for your attention

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