CHANGE
CITIZEN ACTIONS ON CLIMATE CHANGE AND ENVIRONMENT

From citizen science to I-CHANGE policy briefs

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Citizen Science

For the first time in our history, we have the technology to interact with citizens across the European Union and encourage them to participate in scientific research.

The data generated by the citizen can be used and presented back to citizens as information that can be used to

- reduce health risks
- improve economic well-being
- improve quality of life
- support personal decision-making.

The EU perspective of citizen science

Originally launched at EU Green Week 2013, the potential of citizen science to engage EU public authorities and support them in implementing environmental regulation was announced.

The EU Commission has recognised the role of citizen science as a way to improve compliance and governance and environmental reporting, but **no agreed EU methodologies** are in place to support the use of citizen science data for environmental reporting in support of EU Directives.

- *The current Green Deal Programme Knowledge and Citizen Science cluster in the Horizon 2020 Research Programme testing and piloting citizen research projects tackling climate change, biodiversity loss and pollution.*
- *The Single Use Plastics Directive was the first example where citizen science data provided much of the evidence on which the Directive was based.*

The need for a regulation …

Scaling up of citizen science pilots to support implementation of EU legislation remains very difficult.

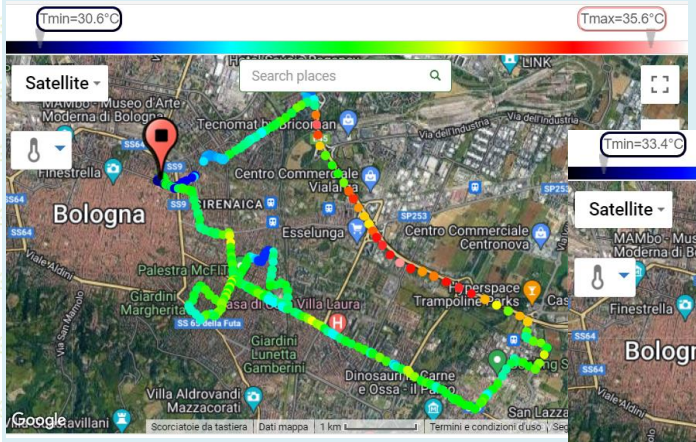
A support package of recommended and proven citizen science techniques, tools, data systems and skills training programmes is still required before regulators will test these new approaches which are disruptive of established “top down” regulation.

Citizen science practices are **bottom-up participatory programmes** designed to complement the traditional top-down command and control legislative programmes that dominate EU Regulatory Policy.

In other words, **a framework is needed.**

I-CHANGE: citizen science to …

… increase awareness and promote a behavioural change



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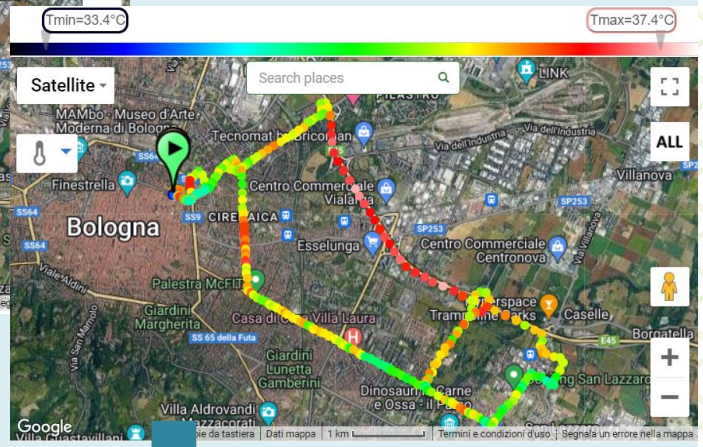


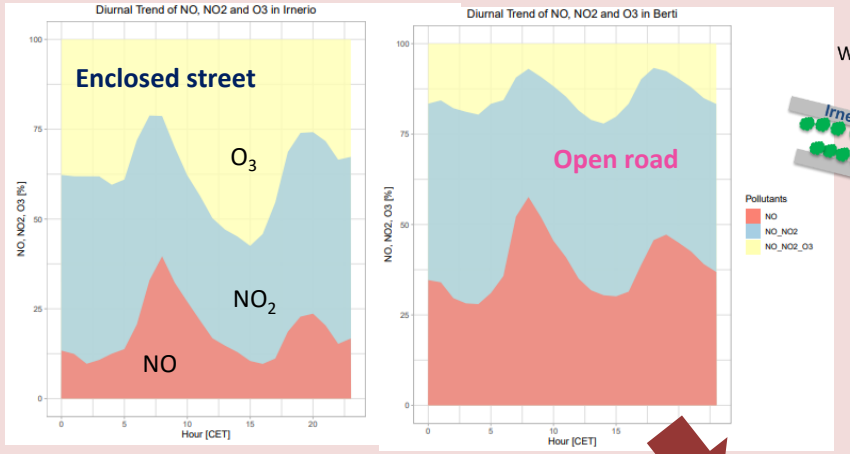
July 1, 12:45-13:45

Key Message …

Temperature varies on daily bases but ratios between different areas of the city are often preserved

… how can this affect our daily mobility?

… convey a dialogue with local authorities

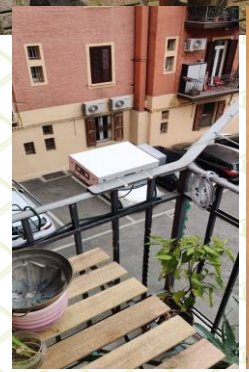


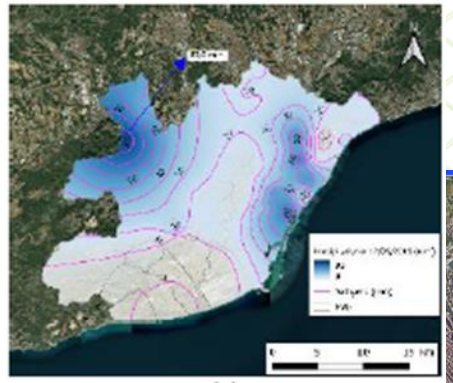
Key Message …

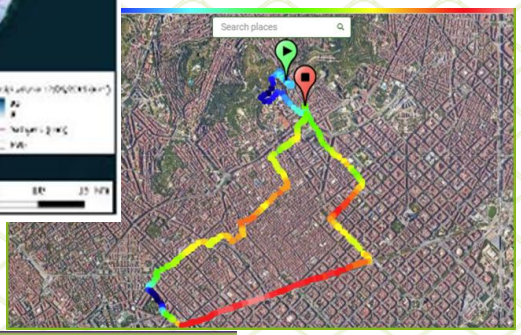
Traffic has different effects: in open roads it causes high concentrations of NO but large dispersion, while in enclosed streets the weaker ventilation allow the accumulation of NO2 and ozone formation

I-CHANGE: citizen science through technology

I-CHANGE is rooted on **sensing the environment**: citizens are engaged to adopt smart sensors to prove a point, build their awareness in evidence and behave accordingly





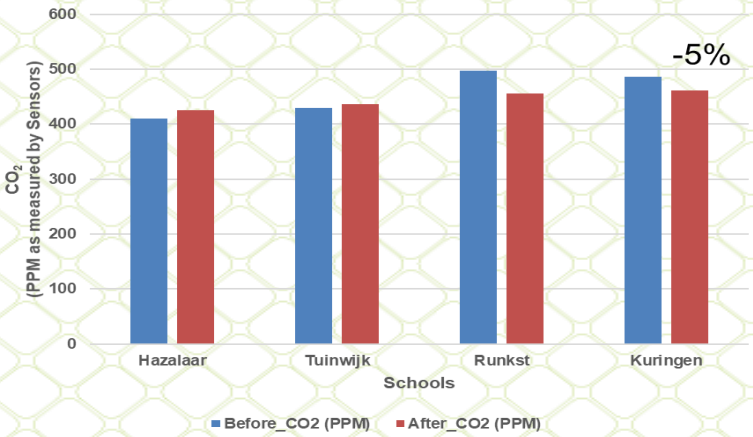


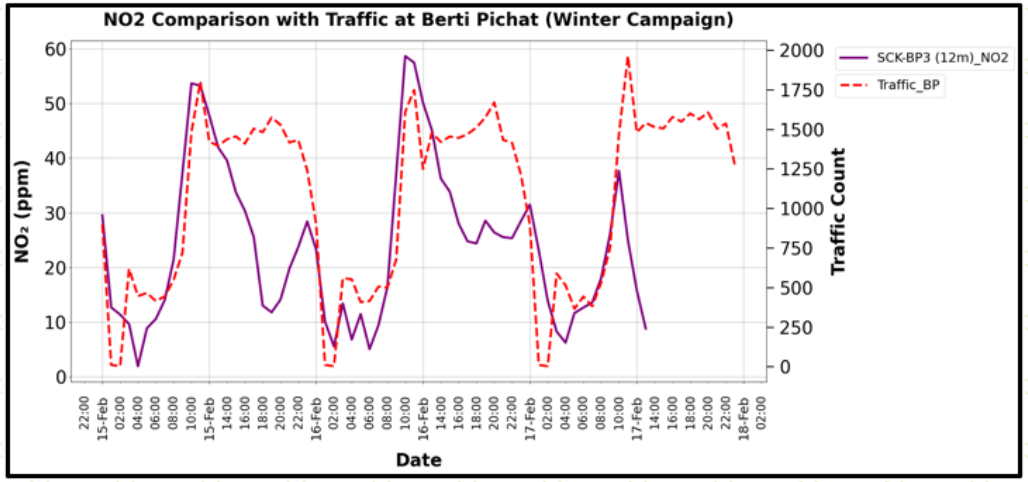
I-CHANGE: from citizen science to policy reccomendations (Air Quality)

Several LLs (Genova, Bologna, Dublin, Hasselt) from the project has tackled the air pollution issue, proposing sensing initiatives and raising awareness games.

The ultimate goal was to identify air pollution hotspot and rush hours, fostering advertising and solution planning:

- Traffic policy
- Pedestrian corridors
- Vehicle regulations





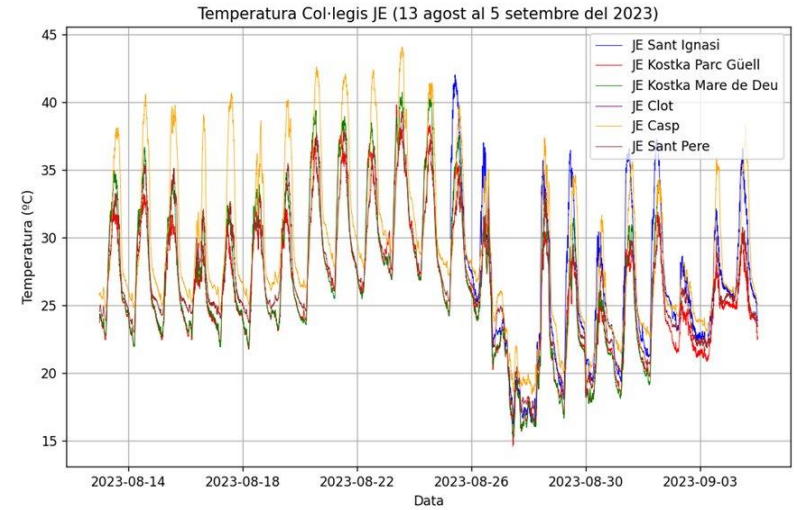
I-CHANGE: from citizen science to policy reccomendations (Heat and Extremes)

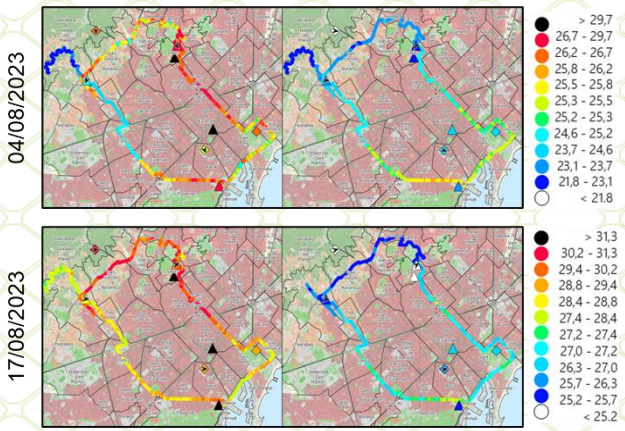
Activities in Bologna, Barcelona, Amsterdam, Genova, and Jerusalem:

- Outdoor temperature mapping
- Perception on temperature confort

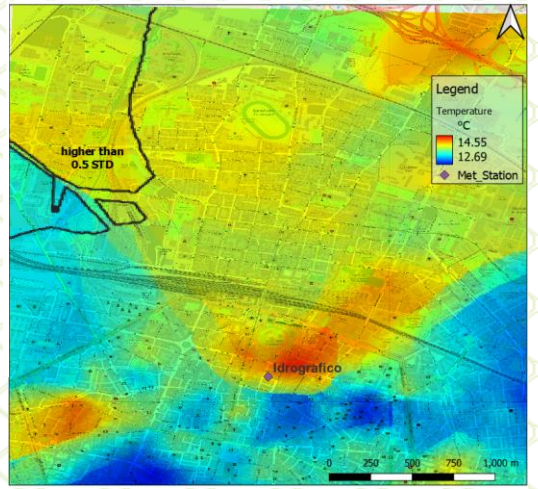
Identification of hotspot and support for risk mapping:

- Effects of building and vegetation shadowing
- Breeze mitigation
- Day-night regimes (hot and cold spots)
- Heatwave and UHI interaction

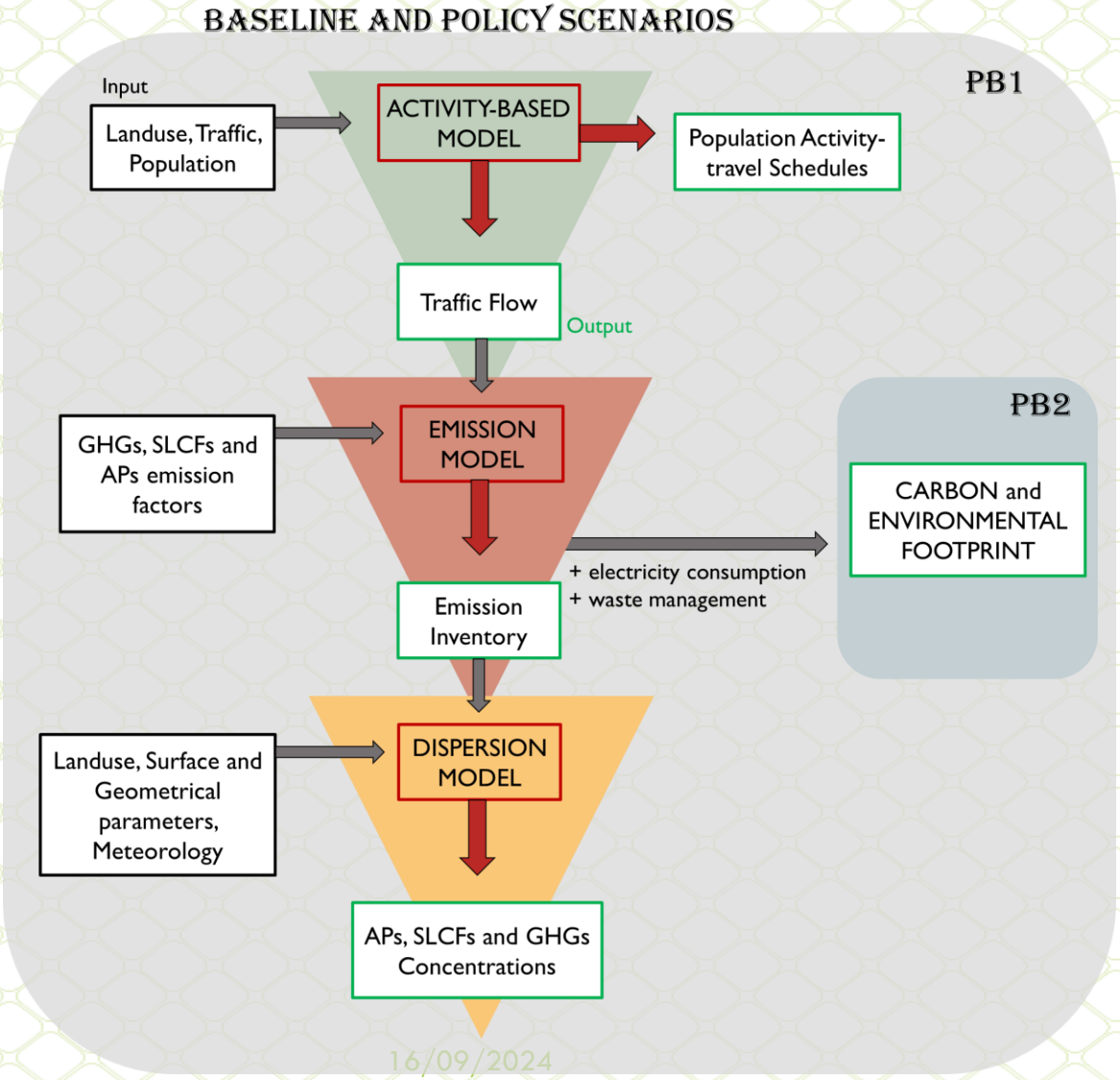




*Temperature representation by deciles mixing morning and night



I-CHANGE: from citizen science to policy reccomendations (Sustainable mobility)

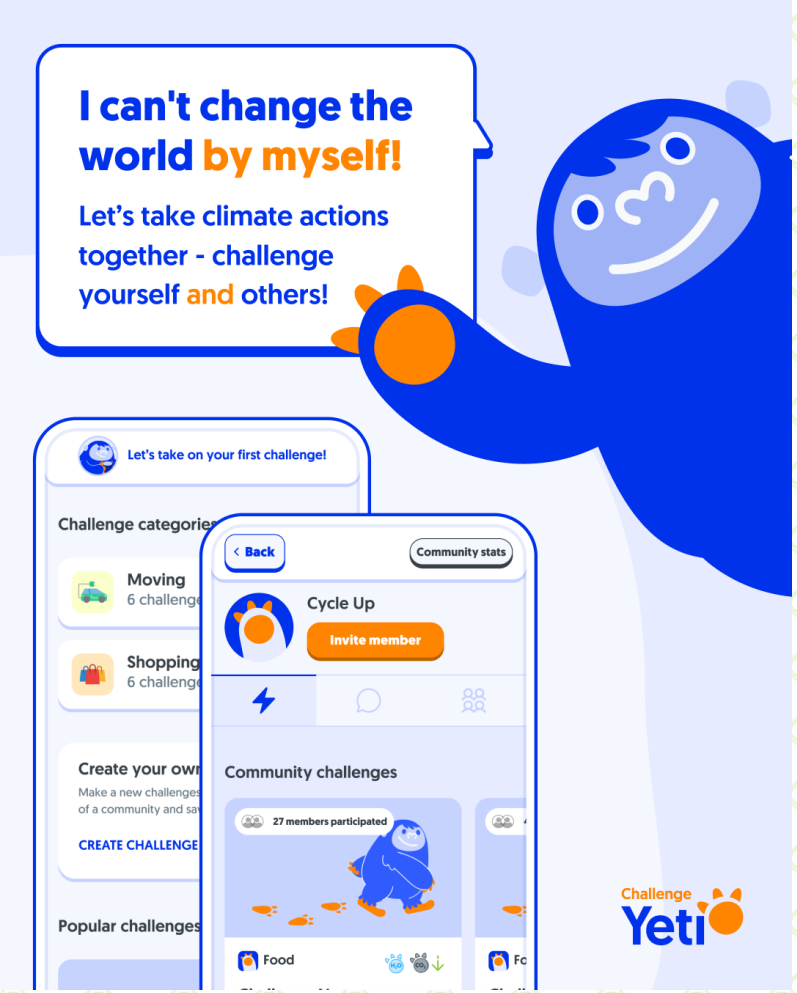


Urban mobility is the perfect synthesis for policy intervention related to heat stress and air quality …

… and allows for emission and behavioural driven roadmaps

The overall outcome of the Policy Brief Collection #1 (PB1) aims at delivering a modular chain of modelling for simulating air pollution changes driven by traffic policies in response to citizens and policymakers codesigned scenarios.

Challenge Yeti: community challenge footprint calculator



- **Take challenges**: Engage with various challenges designed to reduce your environmental footprint. These challenges range from simple daily actions, such as reducing meat consumption, to more comprehensive lifestyle changes.
- **Track your progress**: Monitor your avoided and actual environmental footprint (including carbon, water and plastic footprints) in real time. The app provides personalised feedback, helping you understand the impact of your actions.
- **Build a community**: Invite friends, family, and colleagues to join the movement. Challenge them to take actions together. The more people involved, the greater the collective impact.
- **Share knowledge**: Contribute your own ideas and actions to the app's repository, helping others discover new ways to live sustainably.

Policy actions at School level

I-CHANGE has been active with schools to promote lectures, workshops and games for students, families and workers to raise the awareness on climate change.

Several responses from the schools has already becomed internal committments or policy of the institution:

- Barcelona: Upon participating in **meetings with green school committees,** Students of one school have committed to s**top using metallic paper** as packaging, while meat consumption has decreased and the **number of students who go to school by public transport is increasing;**
- Dublin: Students in secondary schools developed **action projects** to raise awareness of traffic and active travel related issues in their local area**;**
- Genova: **two schools became plastic free** during their activities in the classes as a result of the climate-change workshop and serious game.

In conclusion

- Citizen science offers a new and disruptive approach to delivering EU Directives and Regulations in Member States.
- Citizen science and crowd sourcing can accelerate the delivery of key EU policies that are addressing critical societal need. To make it happen requires current citizen science methods to be scaled up within a common European framework from local to national programmes.
- In this context, I-CHANGE promotes the use of sensors, tools and knowledge of processes ranging from extreme events to air pollution and urban heat (**hard science and technology**) combined with expertise and know-how from citizen science approaches (**social science**). Success in the activities towards raising awareness can be attributed to the combinations of methods and practices adopted and by the cross-fertilization of fields of expertise.
- The variety of activities planned by the LLs have already generated a large **impact** on the number of people engaged and that are currently using the knowledge produced. What is their potential for policy uptake? How strong is the lever of behavioural change?

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Thank You...

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