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NEWS

PROJECT

AIR BREAK- Co-producing healthy clean commuting air spots in town

Ferrara, Italy

TOPIC

Air quality

EDIT 21 AUGUST 2024
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Citizen Science – A double-edged blade. Perspectives from the debate emerged in Ferrara

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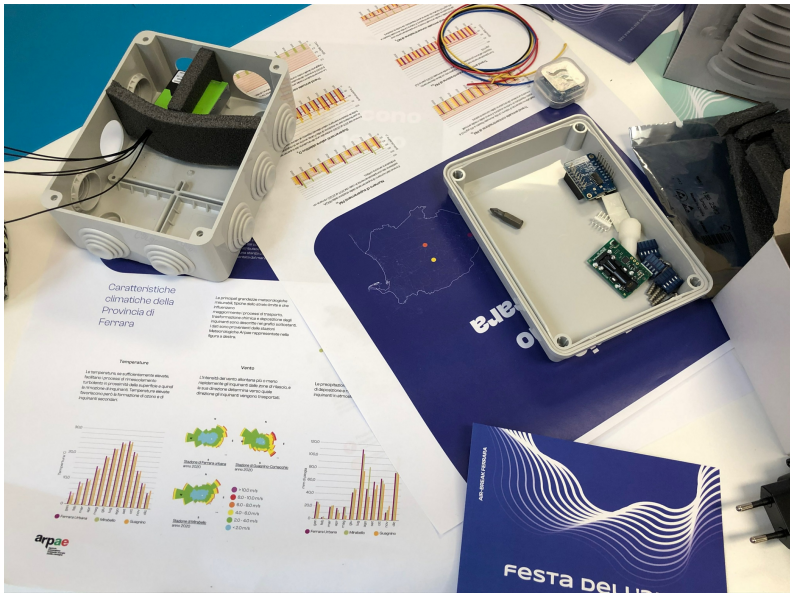

Citizen science, a method that brings non-experts into the fold of scientific research and data collection, has emerged as a powerful tool in addressing complex urban challenges.

The Air-Break project in Ferrara has provided fertile ground for exploring both the promises and pitfalls of this approach, particularly in the domain of air quality monitoring. Through interviews with key stakeholders involved in the project, it becomes clear that while citizen science holds great potential, it also presents significant challenges.

Empowering Citizens Through Engagement

Alessio Stabellini from the Municipality of Ferrara highlights the pivotal role citizen engagement has played in reshaping how the public interacts with environmental data.

> Citizen engagement has been a pivotal force in reshaping behavioural patterns

Stabellini emphasises that the inclusive approach adopted by the Air-Break project has not only encouraged active participation but also fostered a deeper understanding among citizens regarding the implications of air quality data on their daily lives.

Stabellini notes that the benefits for the administration have been substantial.

> The substantial engagement around data facilitated by Air-Break has prompted entities to actively evaluate and analyse data, fostering a proactive approach to strategising actionable steps.

This shift, from merely criticising negative data to using it as a foundation for problem-solving, marks a significant evolution in the relationship between the administration and the public. However, Stabellini also acknowledges the challenges, particularly concerns about potential data misuse, which required extensive training and explanation to mitigate.

Building Transformative Capacities

From an academic perspective, Farah Makki of the Milan Polytechnic discusses the structured integration of citizen science activities into the Air-Break project.

> "We designed an integrated citizen science approach to guide transformative learning pathways through place-based explorations of air pollution"

This method involved a step-by-step process, from revealing the intricacies of Ferrara's air quality issues to equipping citizens with tools to monitor these challenges themselves in familiar environments.

Makki stresses the importance of citizen science in urban projects like Air-Break, stating,

> Integrating citizen science with urban science holds the potential to co-create 'Transformative Urban Capacities' for tackling intricate urban challenges like air pollution.

By involving citizens directly in monitoring efforts, the project not only raised awareness but also fostered a sense of care and responsibility among participants. Makki highlights that despite challenges with data stability and accuracy, the citizen science activities served as "engagement anchors" that stimulated ongoing conversations about air quality between the public and authorities.

Moreover, Makki emphasizes the limitations of viewing citizen science purely through a technical lens.

> Citizen science should go beyond a strictly technical perspective; simply assembling sensors or data collection falls short of mainstreaming knowledge and awareness about air pollution.

Instead, she advocates for integrating these activities into broader educational initiatives that promote environmental citizenship.

The Importance of Reliable Data

Paola Leuci from ARPAE, the Regional Agency for Environmental Protection, offers a more cautious view on the role of citizen science in the Air-Break project. While acknowledging the benefits, particularly in terms of information dissemination and citizen awareness, Leuci points out significant challenges related to data accuracy.

> In the initial phases, we were involved in a comparison between air quality monitoring data provided by the 14 sensors installed around the city and the data from the Regional Air Quality Monitoring Network stations. The discrepancies between the "smart" sensors and the validated data from ARPAE's monitoring stations highlighted the need for careful scrutiny of citizen-generated data.

Leuci underscores the importance of continuing to test and validate low-cost sensors, noting that their performance can vary widely.

> The sensors tested by ARPAE have produced varied results in terms of uncertainty, repeatability, reliability, and response to specific pollutants.

For Leuci, the key to a successful citizen science initiative lies in ensuring the reliability of sources and the accuracy of the data presented to the public. This, she argues, is crucial in maintaining trust and ensuring that citizens can make informed decisions based on the information provided.

A Double-Edged Blade

The experiences shared by these three interviewees illustrate that while citizen science can be a powerful tool for engaging the public and addressing complex urban challenges, it is not without its risks. As Stabellini, Makki, and Leuci each highlight, the success of such initiatives depends heavily on the careful management of data, the integration of educational components, and the ongoing support and validation from professional scientific bodies.

Citizen science, therefore, emerges as a double-edged blade—capable of cutting through apathy and fostering a more informed and engaged public, but also requiring careful handling to avoid the pitfalls of misinformation and misinterpretation. The lessons learned from the Air-Break project in Ferrara provide valuable insights for future initiatives, underscoring the need for a balanced approach that combines the enthusiasm and insights of citizens with the rigour and oversight of professional scientists.

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