EPOMM
European Platform on Mobility Management

Citizen Science: Putting citizens in control of local mobility policy
EPOMM - Managing mobility for a better future

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Dear reader,

Air quality and traffic congestion are among the main causes of poor urban liveability and have sparked rising concerns about the negative impact that transport has on people's health and well-being in urban areas.

As several European cities embark on bold actions to improve local transport and to foster sustainable mobility, citizens are now mobilising to have their voice heard and to actively participate in local transport policy development.

Therefore, the focus of this EPOMM e-update is on initiatives, projects and strategies that consider citizens not solely as data collectors, but also as data contributors, owners and brokers.

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Engaging the citizens of today to build the sustainable cities of tomorrow

Source: freepik.com

Citizen Science is a rapidly growing field, intimately related to the concepts to open science and social and open innovation. Although there is no clear and established definition, Citizen Science is a participatory process, characterised by **public engagement with science and support for alternative models of knowledge production** (see also Hecker et al., 2018, Citizen Science – Innovation in Open Science, Society and Policy).

Most approaches in Citizen Science have a common goal: **working with citizens to collect and analyse scientifically valuable information**. However, there is a growing awareness that this knowledge can be useful beyond the scientific domains and for society as a whole, as it can help inform evidence-based public policies, monitor policy compliance and impact, promote the development of STEM (Science, Technology, Engineering, Mathematics) skills among lay people, and support a stronger sense of ownership and cooperation among citizens (see also Fischer, 1993, Citizen participation and the democratization of policy expertise: From theoretical inquiry to practical cases).

There are **four common features of Citizen Science practice**:

1. Anyone can participate.
2. Participants use the same protocol, so data can be combined and be high quality.
3. Data can help real scientists come to real conclusions.
4. A wide community of scientists and volunteers work together and share data to which the public, as well as scientists, have access.

Co-creation drives engagement

Co-creation in general, and Citizen Science in particular, involves citizens to explore problems in their neighbourhoods, to co-design alternatives to solve problems, to implement solutions with the citizens and to monitor their impact. For all these kinds of engagement, it is important to consider the elements of Responsible Research and Innovation (RRI):

Public engagement is about co-creating the future with citizens and civil society organisations, and also bringing on board the widest possible diversity of actors who would not normally interact with each other, on matters of science and technology.

Open science and open access has become a core strategy to improve knowledge circulation and thus innovation.

Gender equality is a cross-cutting issue that ensures a more integrated approach to research and innovation.

Ethics is an integral part of research throughout the process, and ethical compliance is seen as pivotal to achieve real research excellence.

Science education is an innovative way of connecting science to society and to make science more attractive to young people.

For more information, have a look at the Horizon 2020 project NewHoRRIzon, which aims to further integrate RRI in research and innovation systems both at the national and international level.

Inspiring science and society by new approaches and ideas

Citizen Science has the potential to **bring a wide variety of benefits to society, citizens, policy-makers and researchers**. It can make science more socially relevant, accelerate and enable the production of new scientific knowledge, help policy-makers monitor regulatory implementation and compliance, increase the public awareness about science and the ownership of policy-making – and last but not least, increase the prevalence of evidence-based policy making.

*In its Policy Brief "Citizen Science policies in the European Commission", the Network of National Contact Points for Science with and for Society in Horizon 2020 identifies the following **five main advantages** that Citizen Science brings:*

1. Increasing scientific literacy and critical faculties.

2. Democratising the research process.

3. Generating new knowledge and enables new forms of research.

4. Motivating young people to follow scientific careers.

5. Expanding the skill set of researchers.

Citizen Science for Europe

EU-Citizen.Science - The Platform for Sharing, Initiating, and Learning Citizen Science in Europe

The ambition of EU-Citizen.Science is to build, fill, and promote a sustainable platform and mutual learning space providing different tools, best practice examples and relevant scientific outcomes that are collected, curated, and made accessible to different stakeholders, ranging from interested citizens over scientific institutions up to politicians and public media in order to mainstream Citizen Science in Europe.

CONCISE - Communication role on perception and beliefs of EU Citizens about Science

CONCISE aims to generate a European-wide debate on science communication, involving a wide array of stakeholders, from media outlets to policy-makers, from scientists to business companies, from science communicators to civil society organisations. Qualitative knowledge through citizen consultation on the means and channels by which EU citizens acquire their science-related science knowledge, and how this knowledge influences their beliefs, opinions, and perceptions is provided.

RRI2SCALE - Responsible Research and Innovation Ecosystems at Regional Scale for Intelligent Cities, Transport and Energy

RRI2SCALE has planned a method to support regional R&I systems to effectively meet the requirements of the Regional Dilemma. The project identifies the level of integration of responsible R&I (RRI) in four EU regions as well as the constituent elements of territorial R&I ecosystems, and promote dialogue to understand citizens' perceptions of the interaction between RRI and R&I.

WeCount - Live traffic counting by citizen

WeCount aims to empower citizens to take a leading role in the production of data, evidence and knowledge around mobility in their own neighbourhoods and at street level. The project will follow participatory citizen science methods to co-create and use innovative low cost,

automated, road traffic counting sensors (i.e. Telraam) and multi-stakeholder engagement mechanisms in five pilots in Dublin, Cardiff, Leuven, Ljubljana and Madrid.

The WeCount project builds upon the experiences of "Telraam", which is further explained in the next article.

Telraam: Your window on local traffic

Until now traffic counts have been a blind spot. Telraam is working actively to involve citizens and provide good traffic counts. Telraam handles the research work and the technology. Citizens supply the data. Participants find out about traffic in their street, and at the same time help the public authorities with good traffic counts. The data can be used to make infrastructure, traffic lights and traffic management plans more efficient and more effective. In this way, **Citizen Science fills blind spots**.

Telraam develops high-tech and reliable measuring equipment that is made available to interested citizens. They are helped to set up their own fully automatic traffic counters. Then they mount them in their front windows, and traffic counting can start. All the collected counts are made available for policy-making and research, but also to all residents and interested parties. Therefore, **Telraam puts citizens in control of local mobility policy** and everyone can contribute.

Crowdsourcing the urban cycling experience with PING if you care!

Every time we participate in traffic, unpleasant things can happen. Our **experiences influence our decisions**. We either cope or stop using the bicycle. PING if you care! is **simple** (an app to track rides, a button to mark locations, a list to pick comments from is all a cyclist needs), **quick** (without the need to stop, a location is marked by pressing the button), and **universal** (everybody instinctively knows when or what to PING, by natural instinct).

PING is capturing the impressions and experiences of bicycle users on their everyday journeys. A collection of bicycle experiences is all laid out on a map, sourced and validated by the crowd. This results in an analysis that correlates cycling data with subjective data and converts it into information and insight. This crowdsourcing campaign enables a direct and transparent way of communication and cooperation between the city administration and the cyclist. PING if you care! offers a **platform to actively participate in the improvement of urban cycling**.

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Coronavirus lockdown gives a boost to Citizen Science projects

Much Citizen Science can be done from a phone or computer indoors (see, for example, Telraam above). From counting traffic or penguins to mapping solar panels, people staying at home during the pandemic can contribute to climate change research.

"There is this sense of wanting to do a little thing that contributes to a bigger effort; that is going down well with people," Chris Lintott, astronomer at Oxford University and co-founder of Zooniverse, told Climate Home News.

Not only related to transport and mobility, there is a **great source for Citizen Science and scientific crowdsourcing projects concerning the coronavirus** (COVID-19) that can be found on the Internet or as apps. These include, for example:

Source: freepik.com

- EU-Citizen.Science (see also above): A selection of resources related to the current COVID-19 pandemic. It contains links to Citizen Science and crowdsourcing projects.

- CoKoNet: The Institute of Science and Technology Austria initiated an interdisciplinary Citizen Science project to collate and analyse data on social interactions during the coronavirus crisis.

- Österreich bleibt daheim: Invenium, a Graz University of Technology spin-off, supports the Austrian government to spot emerging COVID-19 hotspots by analysing movements between municipalities.

- The Coronavirus Impact Dashboard: Measuring the Effects of Social Distancing on Mobility in Latin America and the Caribbean.

- **COVID Near You**: Uses crowdsourced data to visualise maps to help citizens and public health agencies identify current and potential hotspots for the recent pandemic coronavirus, COVID-19.

Conclusion: A group of thoughtful, committed citizens can change the world

Source: freepik.com

Citizen Science is for the sake of everyone! Considering citizens not solely as data collectors, but also as data contributors, owners and brokers, aids the whole Research and Innovation cycle, as well as joint fact finding.

However, as local governments can take many initiatives to advance Citizen Science, using it only when it is "convenient" for them is the wrong way. This is important, because Citizen Science activities arise increasingly and governments are no longer the only originators of action. Therefore, collaboration and cooperation is the non plus ultra. It needs to be recognised and respected that **citizens are highly motivated to participate and engage because of the opportunity to give information, input and feedback directly**.

Although Citizen Science has been an increasing method design that plays an important role in informal science education, there is a strong need to consider Citizen Science in the Green Deal and in **future funding programmes**, such as Horizon Europe.

Furthermore, there is a requirement to clearly **define Citizen Science as a term**. Citizen Science should not be seen as a panacea. It is, on the one hand, a scientific approach and a research method like any other. On the other hand, Citizen Science can be seen as a process of democratising research by including the public in different phases of a project's life cycle. Clear communication of the definition of Citizen Science is needed, since Citizen Science is an established term and a mix up with general "public engagement" (to which it can contribute) should be avoided.

And finally, for a method of involving citizens and stakeholders in the research process, the development of the concept in Horizon 2020 has not been very inclusive so far. Hence, there is a need for the European Commission to **engage more with the existing and active Citizen Science community**.

> **Stay at Home! Stay Safe! Stay Healthy!
> And engage yourself in Citizen Science!**