CitiMeasure - using citizen measurements to create smart, sustainable, and inclusive cities

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Acronyms

CoP	Community of Practice
CSO	Civil Society Organization
EC	European Commission
EU	European Union
ENVI	Environment
EPA	Environmental Protection Agency
EU	European Union
JRC	Joint Research Centre
KSF	Knowledge Society Forum
MOB	Mobility
NGO	Non-Governmental Organization
SMEs	Small and Medium size Enterprises
WG	Working Groups

1 Executive Summary

The ambition of CitiMeasure is to develop three instruments to tackle challenges that citizen science initiatives face in relation to data comparability and interoperability, digital inclusion and behaviour and policy change. At the end of the project, the tested tools, guidelines, and a repository of best practices will be available in an online European Knowledge Centre.

For that, CitiMeasure mapped key stakeholders for the successful implementation of the project as well as the dissemination of its results. This deliverable follows the approach taken by other stakeholder mapping reviews in citizen science projects and includes an overview of 164 EU cities that are engaged in local ecosystem collaborations with citizens that collect data for sustainable cities, and 285 citizen science stakeholders, together with data visualizations. Further analysis of the results is included in section 5.

2 Introduction

2.1 ABOUT CITIMEASURE

Citizen measurement (or citizen science) initiatives contribute to a sustainable transition in European cities. By using an array of tools and instruments, citizens can play a role in measurement and monitoring of indicators on air quality, temperature, soil moisture, biodiversity, or risk management, among other environmental areas. Citizen measurement initiatives also can foster communications and interactions among stakeholders and contribute to the democratisation of science and policy.

The CitiMeasure project (2021-2023) aims to bring together the experiences and expertise of European cities, organisations and networks in implementing citizen science initiatives (in the form of guidelines, toolbox, web-platform, Apps, etc.). The project builds upon the lessons learned from the Dutch City Deal Working Groups, a network of stakeholders working on the broader area of smart cities, which includes the topic of citizen measurement initiatives. The City Deal has been working closely with the Dutch Ministry of Interior and Kingdom Relations for over a year. CitiMeasure builds upon these experiences and will use those to develop and pilot three 'instruments' namely:

1. An instrument that allows the outputs of different city measurement initiatives to be compared.

2. An instrument that safeguards the digital inclusivity of city measurement initiatives (maximising the opportunities for participation of interested individuals and communities).

3. An instrument that connects information to behaviour change and policy.

There is a 4th (Strategy and Oversight) working group that focuses on providing strategic direction and ensuring cohesion of activities across the three Instrument Sub-Groups, and the project in general.

CitiMeasure will also raise awareness of the importance of citizen measurement initiatives and capitalise on the results and tools of similar citizen science projects by creating an online European Knowledge Centre with a repository of good practices.

2.2 PURPOSE OF THIS REPORT

The main purpose of this report is to create an EU-wide overview for parties involved in realising, participating, managing, and executing initiatives related to the subject of the three CitiMeasure instruments. The stakeholder mapping report contains:

- An overview and graphical representation of EU cities that are engaged in local ecosystem collaborations with citizens that collect data for sustainable cities.
- An overview and graphical representation of key EU stakeholders involved in citizen science, including institutes collecting environment related data.

The main objectives of this report are to:

- Deepen our understanding about key categories of citizen science stakeholders
- Identify key stakeholders for the successful implementation of the project
- Use these insights in the stakeholder engagement and outreach strategies, as well as to identify cities as future members of the CitiMeasure working groups or as potential pilots.

- Form the foundation for other core tasks and activities within the CitiMeasure project across a range of Work Packages

Due to the overlaps between D1.1 Landscape review, D1.2 Four cases studies and D1.3 Stakeholder mapping, these documents will be cross-referenced when necessary.

2.3 STRUCTURE OF THE REPORT

This report is divided in three main sections. Section 3 introduces the background of the stakeholder mapping, and categories of stakeholder in the context of citizen science. Section 4 showcases the methodological approach of this stakeholder mapping. Section 5 summarises the results of the stakeholder mapping by focusing on EU cities and key stakeholders involved in citizen science.

3 Background

The term stakeholder is often mentioned in the literature, and research on stakeholder engagement has emerged especially in fields such as public policy, organisational management, and international development (Brugha & Varvasovszky, 2000; Mathur et al., 2007). Two major approaches have been identified in these fields: consumerist – it focuses on understanding the market and discovering the needs of customers to increase competitiveness – and democratic – identifying multiple stakeholders and their diverse and even conflicting interests, and valuing issues such as equity and empowerment of citizens– (Mathur et al., 2007).

Stakeholder mapping is one of the techniques developed in these fields to identify stakeholders. It is defined as the systematic process of determining the individuals, organisations and groups that have a 'stake' in an intervention or topic, for example, in form of interest in a project or initiative, and are impacted by its outcomes (EUCS, 2019). This technique can thus be used to engage specific stakeholders in projects or initiatives, as well as for creating appropriate stakeholder engagement strategies.

In the field of citizen science, stakeholder mapping serves to identify influential actors and institutions, including their perspectives and interests (Hecker et al, 2018) which is especially relevant in relation to environmental topics as they require the integration of different forms of knowledge and perspectives due to their multidimensional and complex nature (Mathur et al., 2007; Murray-Webster & Simon, 2007). Stakeholder mapping can help to gain insights into the development, operation and challenges that citizen science initiatives face (EUCS, 2019). There are several reasons for this: it allows the involvement of key stakeholders from an early stage and their maintenance long-term; it favours more targeted and effective communication strategies and helps harness local knowledge. In addition, understanding different practices of key stakeholders is relevant for data sharing. Stakeholder mapping also reveals marginalised stakeholders and those harder to reach (Balestrini et al., 2021; Skarlatidou et al., 2019).

This report aims to map key stakeholders in the scope of implementation of CitiMeasure to engage them in our activities, as well as to disseminate the results with the stakeholders with higher influence.

3.1 CATEGORIES OF KEY STAKEHOLDERS IN THE CITIZEN SCIENCE LANDSCAPE

In the context of research and innovation, the quadruple helix has been used to define key categories of stakeholders: government, research and scientific institutions, companies, and citizens. Citizen science lies at the society-science-policy interface, and there have been several efforts to define the main categories of key citizen science stakeholders. Table 1 provides an overview of such categories, based on the literature in the field of citizen science.

Publications	Categories of stakeholders	Context
Pfeiffer et al. (2016)	(1) Core stakeholders (2) Market forces (3) Enabling environment	Citizen observatories
Gobel et al. (2017)	(1) Civil society organisations, informal groups and community members (2) Academic and research organisations (3) Government agencies and departments (4) Participants	Data interoperability

	(5) Formal learning institutions such as schools (6) Businesses or industry.	
Hecker et al. (2018)	(1) Non-governmental (2) Governmental (3) Academic (4) Consortium	Project governance (lead organisations)
EU Citizen Science (2019)	(1) Academia (2) Educators (3) Public (4) NGOs and CSOs (5) Industry and SMEs (6) The Press and Media (7) Policy makers and funders	Stakeholders in citizen science
European Commission (2020)	(1) EU authorities and other EU bodies, public authorities in the Member States, including environmental protection agencies (EPAs) and statistical offices (2) Citizen science associations and networks (including civil society organisations (CSOs) and other partners) (3) Citizen science communities – groups of people leading or participating in citizen science initiatives (4) Researchers	Environmental monitoring

Table 1: Categories of citizen science stakeholder in different publications

Pfeiffer et al (2016) developed three main categories of stakeholders in the context of citizen observatories. Core stakeholders are actively involved in the citizen observatory, enabling environment stakeholders can limit or enable the impacts of citizen observatories while market forces are stakeholders that directly engage in direct financial and economic transactions with the citizen observatory. In 2017, Gobel et al., published a report identifying six key citizen science stakeholders in the context of data interoperability. The inventory of the JRC (2018) identified four categories of lead organisations of the citizen science initiatives included in their inventory. Non-governmental and academic stakeholders were the most common lead organisations, which reveals the existence of barriers for governments (which include cities or local authorities) to participate and lead citizen science initiatives. The EU Citizen Science project built upon these efforts and provided seven generic categories for key stakeholders in the field of citizen science (2019). However, these categories missed the diversity and nuance in the typology of the citizen science stakeholders involved in environmental monitoring. The European Commission thus suggested additional categories (European Commission, 2020).

The categories for stakeholders used in this report are based on a combination of Gobel et al (2017), Eu.Citizen Science (2019) and the Staff Working Document of the European Commission (2020). Based on the Stakeholders, Network & Community Mapping report (2019) and the EC report (2020), we added Media and EU institutions as key stakeholders. Moreover, we included Private sector instead of other words to aggregate categories suggested by other publications, i.e., industry, SMEs, etc.

It is through communities of practice (CoPs), networks, and shared platforms that most citizen science activities are supported (Vohland et al., 2021; Manzoni et al.,2021). We have thus divided CSOs between two categories: CSOs and Networks, CoPs and WGs given the different expertise and the emergence of this type of stakeholders both in the literature and in the interviews. CitiMeasure aims to bring different citizen science stakeholders together to work together in a working group setting. Therefore, the stakeholder mapping of the CitiMeasure project has added these categories in its

analysis and will pay especial attention to the developments in existing communities and working groups. Further research might focus on how to better categorise Public-Private Partnerships in the context of citizen science.

This stakeholder mapping report thus suggests the following categories:

- Government agencies and departments
- Private sector
- Academic and research organisations
- Civil Society Organisations
- Networks, Communities of Practice and Working Groups
- Media
- EU institutions
- Participants
- Schools

4 Methodology

The methodological approach followed in this report includes desk research to identify relevant categories of citizen science stakeholders as well as specific stakeholders participating in citizen science initiatives (section 4.1). At the beginning of the project, we also organized stakeholder identification meetings with key members of the Dutch City Deal working groups with the purpose of understanding the Dutch consortium and identifying their key members for the European up-scale (section 4.2). In addition, we used the insights provided by an online survey (section 4.3) and stakeholder interviews (section 4.4). The limitations of this methodology are discussed in section 4.5.

4.1 DESK RESEARCH

The desk research consists of two distinct elements: (1) review of literature related to stakeholder mapping in a citizen science context, and (2) review of literature and online search to find relevant citizen science projects. The first element was a non-exhaustive literature review. The search in Google Scholar was done as part of the landscape review and followed key words such as: policy AND citizen science, citizen science AND behaviour change, citizen science AND data comparability, citizen science AND digital inclusion, and digital divide AND citizen science, and stakeholders AND citizen science. The second part of the desk research included reviewing public websites and revising literature where different citizen science projects and key stakeholders were mentioned.

Different resources mentioned in the project proposal, including grey literature such as policy documents, were included in the review. Additional resources were identified by the CitiMeasure team based on their expertise and participation in citizen science projects. The inputs gathered as part of the drafting of this publication were also used for the landscape review, identification of case studies and the inventory.

The detailed methodology to create the CitiMeasure inventory of EU citizen science initiatives is included in section 5 of the deliverable D 1.1: Landscape review, but in essence we used the JRC inventory as a departure point and selected initiatives which were the most relevant for CitiMeasure (49 out of 503 initiatives) based on a set of criteria. Thereafter, we added 115 initiatives from diverse sources, including the interviews and the online survey.

4.1.1 Identifying EU cities that are engaged in local ecosystem collaborations with citizens that collect data for sustainable cities

This stakeholder mapping follows a non-comprehensive approach. It includes EU cities which are:

- Members of networks and projects relevant for the implementation of the CitiMeasure project and the future European Knowledge Centre: LivinginEU, Dutch City Deal, Cities Coalition on Digital Rights (CCDR), Open and Agile Smart Cities (OASC), FIWARE, Smart Cities and Communities programme of H2020 (SCC01), other relevant citizen science initiatives, UserCentriCities project, and citizen science initiatives under the category City in the JRC inventory.
- Mentioned in the interviews and survey
- Filled in the Expressions of Interest

In addition, we checked if there were any EU Member States missing in this overview and tried to put more efforts in exploring any existing links between their cities and citizen science initiatives. The

resulting database had more than 300 entries which included cities active directly or indirectly in citizen science. Thereafter, we cleaned the data as many of these cities were duplicated. For instance, the city of Milan is partner or member in several projects or networks. See section 5 for graphic visualisation of EU cities.

4.1.2   Identifying key stakeholders involved in environment related citizen science

The primary source of this report on stakeholder mapping is the EU-Citizen.Science project data base on organisations. Additional stakeholders have been added based on relevance of projects and networks, such as LivinginEU, Dutch City Deal, Cities Coalition on Digital Rights (CCDR), Open and Agile Smart Cities (OASC), FIWARE, Smart Cities and Communities programme, other relevant citizen science initiatives, UserCentriCities as well as mentions of specific stakeholders in the interviews.

4.2   STAKEHOLDER IDENTIFICATION WORKSHOPS

As part of initial contacts with the two relevant City Deal working groups, we organised two stakeholder identification meetings with the working group chairs on the 7th and 8th of July respectively. As part of those meetings, we identified cities, citizen science initiatives and EU institutions relevant for the Dutch context.

4.3   ONLINE SURVEY

The methodology to create an inventory of EU citizen science initiatives is included in section 5 of the deliverable D 1.1: Landscape review. Although the online survey did not directly request names of cities involved in citizen science initiatives, the results have been used as a secondary source of information.

4.4   INTERVIEWS

The methodology to create an inventory of EU citizen science initiatives is included in section 5 of Deliverable 1.1: Landscape review. The protocol for ecosystem stakeholders included a question specifically asking about leading cities in the field of citizen science, additional information about cities involved in citizen science was extracted from the interviews to EU cities and citizen science initiatives respectively (see interview protocols in Annexes 3, 4 and 5).

4.5   LIMITATIONS OF THE METHODOLOGY

The systematic identification of EU cities involved in the 164 citizen science initiatives included in the CitiMeasure inventory was hindered by the methodological limitations of other studies aiming to cover the geographic coverage of citizen science, as well as time constraints. For instance, the JRC inventory (2018) included the following stakeholder categories: Lead organisations, Stakeholders endorsing citizen science initiatives, funders, and end-users. Although City is one of the categories of the geographic scale, the geographic coverage column does not mention the name of specific cities but their country instead. Finally, when looking at lead organisations in combination with the Governmental category, only marginal references were made to specific cities. This influenced the design of our survey, and inventory, which also did not include the whole consortia of the included initiatives, sometimes formed by up to 30 partners, given the time and methodological constrains. However, we included cities that are members of networks and organizations with high influence in the CitiMeasure project as well as those participating in key citizen science initiatives for the project.

5 Overview of EU cities and key stakeholders involved in citizen science

5.1 OVERVIEW OF EU CITIES

After processing the data, we identified 164 EU cities of all sizes from 23 Member States which are involved in local ecosystem collaborations with citizens that collect data for sustainable cities. The map below showcases the EU Member States and the number of cities involved. The colour coding goes from red – less than two cities in the data set – to dark green – more than 12 cities involved in networks, projects or in the CitiMeasure ecosystem. These results must be taken with caution given that cities which are partners in the 164 initiatives included in the CitiMeasure dataset have not been comprehensively included in the stakeholder mapping of cities involved in local ecosystem collaborations on data collection for sustainable cities.
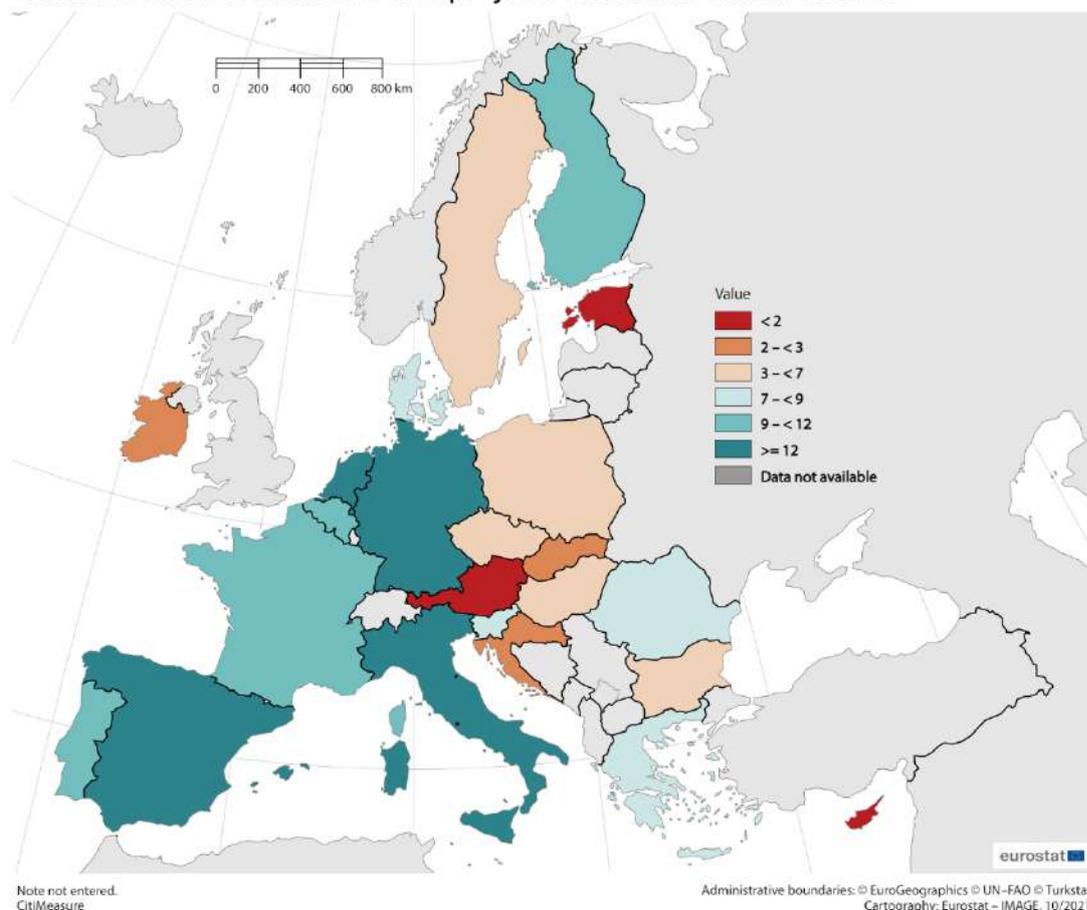
Figure 1: EU Member States and number of cities involved in citizen science related networks or projects

Based on the methodological constraints, and the collaboration with the Dutch City Deal, this report found that the EU Member States with more cities involved in data collection for sustainable cities are The Netherlands (23 cities) and Spain (22 cities), followed by Germany (14 cities), Italy (12 cities) and France (11 cities) (see Table 2 marked in red).

Name of Member State	Count of city
Austria	1
Belgium	9
Bulgaria	3
Croatia	2
Cyprus	1
Czechia	3
Denmark	7
Estonia	1
Finland	9
France	11
Germany	14
Greece	8
Hungary	3
Ireland	2
Italy	12
Netherlands	23
Poland	3
Portugal	9
Romania	7
Slovakia	2
Slovenia	7
Spain	22
Sweden	5

Table 2: Number of cities by EU Member State (min.1 - max. 23)

With a lower number of cities, we can find countries such as Belgium, Portugal, and Greece. Following our methodological approach, no cities involved in local ecosystem collaborations to collect data were found in Latvia, Lithuania, Luxembourg, and Malta. Dutch cities on the contrary are leading on the field of citizen science and sustainable cities. Germany has also multiple cities involved (although of smaller size) in different initiatives relevant for CitiMeasure. However, further research should be done to better understand these results, i.e., low presence of Austrian cities. The high number of cities in Southern countries such as Spain, Italy and Portugal might be explained by a higher involvement of medium to small cities in different European networks for accessing EU funding and other opportunities. The same applies to cities in Eastern countries such as Romania.

More generally, this map illustrates that the ecosystem in which the CitiMeasure project is being implemented is very lively and that there are many cities involved in topics relevant for the development of the three instruments. See list of cities in Annex 1.

5.2   OVERVIEW OF KEY EU STAKEHOLDERS INVOLVED IN CITIZEN SCIENCE

The following graphs present an overview of key stakeholders involved in citizen science (a total of 285 organisations have been identified). Government agencies and departments (including EPAs) and academic and research organisations are the most common categories together with Civil Society Organisations (CSOs). The Private Sector and Networks, CoPs and WGs represent this second-tier categories which include key stakeholders. For the CitiMeasure project, networks, communities of practices and other existing working groups are especially important. EU institutions and Media are

less numerous, but they can hold a lot of power in the EU citizen science ecosystem. Finally, some schools are marginally mentioned. The category Participants was left blank given the difficulties to access the exact number of participants in many initiatives.
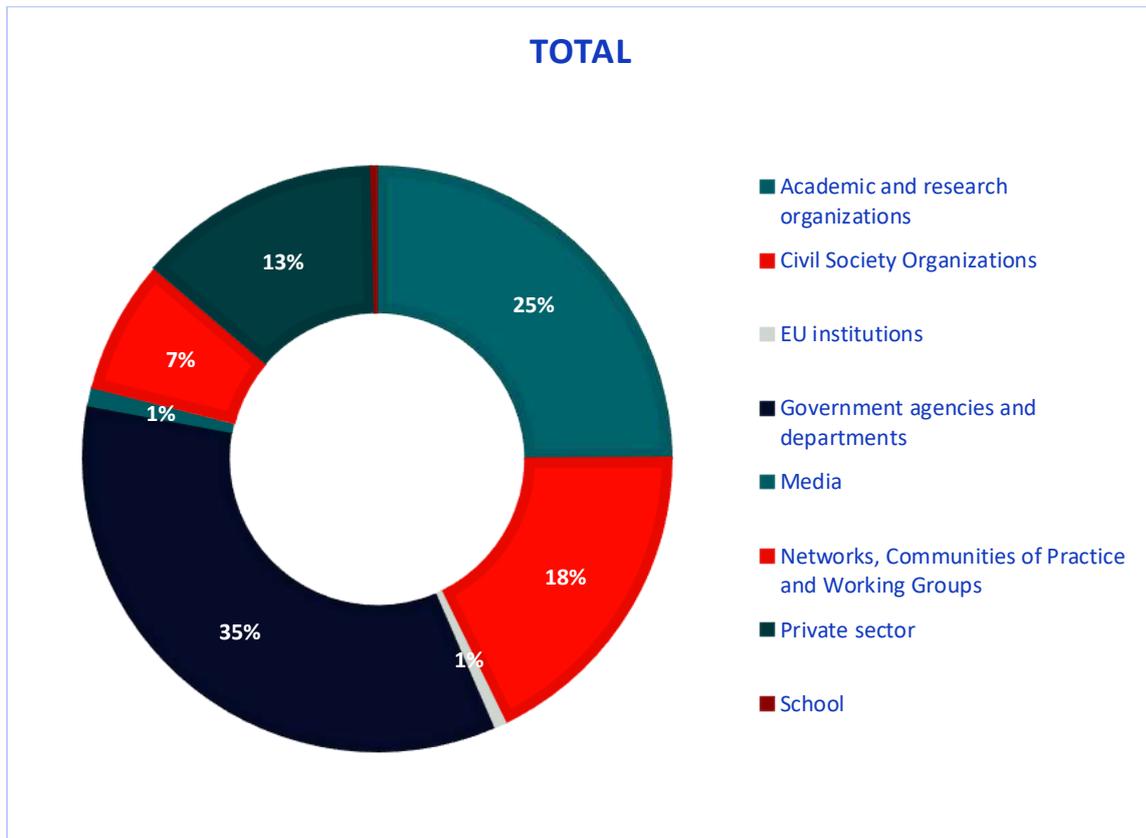
Figure 2: Types and percentages of citizen science stakeholders

5.2.1   Relevant stakeholders for CitiMeasure

Although this graph provides an overview of the different types of stakeholders in the citizen science ecosystem, it does not necessarily reflect what organizations and why these stakeholders are important for CitiMeasure in terms of the development of the instruments, implementation of the instruments in the pilot phase and replication. See Figure 3 for more details.

Replication: LivinginEU, Dutch City Deal, Cities Coalition on Digital Rights (CCDR), Open and Agile Smart Cities (OASC), FIWARE, Smart Cities and Communities, ECSA working groups, OSG WGs, CSA WGs, Eurocities ENVI, KSF and MOB WGs

Piloting phase: cities such as Barcelona, Debrecen, Dublin, Helsinki, Lyon, Milan, Apeldoorn, Murcia, Piastów, Rumia Municipality, Sittard- Geleen, Porto, Torino, Warsaw, Zwolle, etc.

Instrument development: cites and experts from organizations such as Rotterdam University of Applied Sciences, Sensor.Community, ICTU, Leiden CS Lab, CS Office Barcelona...

Figure 3: Most relevant stakeholders in each phase of the project

6 References

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Annex 1 – List of named cities

City	Country	Frequency
Aarhus	Denmark	2
Aix Marseille	France	1
Alba Iulia	Romania	1
Alcobendas	Spain	1
Alcoy	Spain	1
Alentejo Region	Portugal	1
Algeciras	Spain	1
Alicante	Spain	1
Alkmaar	Netherlands	1
Almere	Netherlands	1
Amersfoort	Netherlands	4
Amsterdam	Netherlands	6
Antwerp	Belgium	3
Apeldoorn	Netherlands	1
Arad Municipality	Romania	1
Athens	Greece	3
Aveiro	Portugal	1
Badajoz	Spain	1
Barcelona	Spain	12
Bari	Italy	1
Bassano del Grappa	Italy	1
Berlin	Germany	2
Bilbao	Spain	1
Bologna	Italy	2
Bordeaux	France	2
Botosani	Romania	1
Bottrop	Germany	1
Braga	Portugal	1
Bratislava	Slovakia	1
Breda	Netherlands	1
Brno	Czechia	2
Brussels	Belgium	6
Budapest	Hungary	2
Câmpulung Moldovenesc	Romania	1
Capelle aan den Ijssel	Netherlands	2
Celje	Slovenia	1
Civitanova Marche	Italy	1
Cluj-Napoca	Romania	2
Courtrai	Belgium	1
Da Maia	Portugal	1
Darmstadt	Germany	1
Debrecen	Hungary	3

Delft	Netherlands	1
Den Haag	Netherlands	1
Deventer	Netherlands	1
Dijon	France	1
Dingelstädt	Germany	1
Dortmund	Germany	1
Dublin	Ireland	6
Dubrovnik	Croatia	1
Eichenzell	Germany	1
Eindhoven	Netherlands	1
Emilia Romagna	Italy	1
Enschede	Netherlands	1
Espoo	Netherlands	1
Evora	Portugal	1
Ferrara	Italy	1
Firenze	Italy	1
Focsani	Romania	1
Fundão	Portugal	1
Gabrovo	Bulgaria	1
Gelsenkirchen	Germany	1
Gemeente 's-Hertogenbosch	Netherlands	1
Genova	Italy	1
Ghent	Belgium	1
Gijon	Spain	1
Girona	Spain	1
Gothenburg	Sweden	3
Granada	Spain	1
Grenoble	France	2
Grez-Doiceau	Belgium	1
Groningen	Netherlands	1
Guimarães	Portugal	1
Hasselt	Belgium	1
Heerlen	Netherlands	1
Hamburg	Germany	1
Helmond	Netherlands	1
Helsinki	Finland	4
Hessen	Germany	1
Hvidovre	Denmark	1
Iasi	Romania	2
Idrija	Slovenia	1
Ioannina	Greece	1
Joensuu	Finland	1
Jyväskylä	Finland	1
Kassel	Germany	1
Katerini	Greece	1
Kavala	Greece	1

Kifissia	Greece	1
Kungsbacka kommun	Sweden	1
La Coruña	Spain	1
Landeshauptstadt Magdeburg	Germany	1
Las Rozas	Spain	1
Leiden	Netherlands	1
Leipzig	Germany	2
Leon	Spain	1
Leuven	Belgium	2
Lille	France	2
Limerick	Ireland	1
Lisbon	Portugal	1
Ljubljana	Slovenia	5
Logatec	Slovenia	1
Logroño	Spain	1
Lublin City Office	Poland	1
Luleå	Sweden	1
Lyon	France	1
Maastricht	Netherlands	1
Madrid	Spain	2
Málaga	Spain	1
Milan	Italy	4
Munich	Germany	1
Murcia	Spain	3
Nice	France	2
Nicosia Municipality	Cyprus	1
Novo Mesto	Slovenia	1
Odder Kommune	Denmark	1
Ostrava	Czechia	2
Oulu	Finland	2
Padova	Italy	1
Paris	France	2
Pisek	Czechia	1
Pori	Finland	1
Porto	Portugal	2
Poznan	Poland	1
Ptolemaida	Greece	1
Randers	Denmark	1
Rennes	France	2
Rijeka	Croatia	1
Ringkøbing-Skjern Kommune	Denmark	1
Roeselare	Belgium	2
Rome	Italy	1
Roskilde	Denmark	1
Rotterdam	Netherlands	2
Saint-Quentin	France	1

Santander	Spain	1
Sestao	Spain	1
Sipoo	Finland	1
Sittard-Geleen	Netherlands	1
Skellefteå	Sweden	1
Slovakia	Slovakia	1
Slovenia	Slovenia	1
Šmartno pri Litiji	Slovenia	1
Smolyan	Bulgaria	1
Sofia	Bulgaria	1
SOSNOWIEC	Poland	1
Stockholm	Sweden	1
Stuttgart	Germany	1
Szombathely	Hungary	1
Tallin	France	1
Tampere	Finland	1
Thessaloniki	Greece	2
Tournai	Belgium	1
Turin	Italy	2
Turku	Finland	1
Utrecht	Netherlands	1
Valencia	Spain	1
Vantaa	Finland	1
Vari-Voula-Vouliagmeni	Greece	1
Viborg Kommune	Denmark	1
Vienna	Austria	4
Vitoria	Spain	3
Voru	Estonia	1
Zaragoza	Spain	2
Zwolle	Netherlands	1

Table 3: City, Member States, and count of mentions

Annex 2 – List of stakeholders

Name	Category I
Aarhus University	Academic and research organizations
Action for Rural Women's Empowerement	Civil Society Organizations
AM	Private sector
Amsterdam Smart City	Government agencies and departments
Anèl·lides, serveis ambientals marins	Private sector
APRE	Private sector
Aquafin	Media
Arcadia	Private sector
Argaleo	Private sector
Aristotle University of Thessaloniki	Academic and research organizations
Association of Hungarian Women in Science (NaTE)	Civil Society Organizations
Association StadNatur	Private sector
AT Centre for Citizen Science, Austria https://www.zentrumfuercitizenscience.at/	Civil Society Organizations
AT Citizen Science Network Austria https://www.citizen-science.at/	Civil Society Organizations
Austrian Citizen Science Association	Civil Society Organizations
BarIlan University	Academic and research organizations
Bat Conservation Ireland	Civil Society Organizations
BE Flemish Knowledge Centre for Citizen Science (Scivil)	Civil Society Organizations
Belgian Interregional Environment Agency	Government agencies and departments
BETA Technological Center	Academic and research organizations
BiodivERsA	Networks, Communities of Practice and Working Groups
Biosphere Expeditions	Civil Society Organizations
BNA	Government agencies and departments
BNSP	Government agencies and departments
BOKU University	Academic and research organizations
BPD	Private sector
British Library	Government agencies and departments
BTG	Private sector
Bundesforschungs- und Ausbildungszentrum für Wald, Naturgefahren und Landschaft	Government agencies and departments
Burger Schaffen Wissen	Civil Society Organizations
Caritas Kasana Luwero	Civil Society Organizations
CBS	Government agencies and departments
CCDR	Networks, Communities of Practice and Working Groups
CENIA, Czech Environmental Information Agency (CENIA)	Government agencies and departments
Centre for Ecology, Evolution and Environmental Changes	Academic and research organizations

Centre for Genomic Regulation	Civil Society Organizations
Centre for Social Innovation - ZSI	Civil Society Organizations
CESAB - Research Center for Environmental Sciences and Biotechnologies	Academic and research organizations
Chief Inspectorate of Environmental Protection	Government agencies and departments
Citizen Cyber Lab	Civil Society Organizations
Citizen Science Association	Civil Society Organizations
Citizen Science Association Data & Metadata Working Group (CSA Data & Metadata WG)	Networks, Communities of Practice and Working Groups
Citizen Science Global Partnership	Networks, Communities of Practice and Working Groups
Citizen Science Knowledge Center at University of Southern Denmark (SDU)	Academic and research organizations
Citizen Science Lab Leiden University	Academic and research organizations
Citizen Science Netvaerket	Civil Society Organizations
CitizenLab	Private sector
Civity	Civil Society Organizations
Coastwatch Europe	Civil Society Organizations
Consiglio Nazionale delle Ricerche - Istituto di Scienze Marine	Government agencies and departments
Consupedia	Private sector
Covenant of Mayors	Government agencies and departments
Coventry University	Academic and research organizations
CREA DC sede di Firenze	Government agencies and departments
Croatian Environment Agency	Government agencies and departments
CSS-UPF	Academic and research organizations
Czech Technical University	Academic and research organizations
Czech University of Life Sciences Prague, Faculty of Environmental Sciences	Academic and research organizations
Dalarna University	Academic and research organizations
Danish Environment Agency	Government agencies and departments
Danish Nature Agency	Government agencies and departments
Data- en kennishub Gezond Stedelijk Leven	Networks, Communities of Practice and Working Groups
DDQ BV	Private sector
DE German Citizen Science Network https://www.buergerschaffenwissen.de	Civil Society Organizations
De Grachtwacht	Civil Society Organizations
De Standaard	Media
Department of Environment, Ministry of Environment and Physical Planning	Government agencies and departments
Department of Geography and Spatial Planning, University of Luxembourg	Academic and research organizations
Department of the Commissioner-general for Sustainable Development	Government agencies and departments
DHM Infra	Private sector
DK Danish Citizen Science Network https://citizenscience.dk	Civil Society Organizations

DPD	Private sector
Earthwatch	Civil Society Organizations
Ecologic Institute	Academic and research organizations
Economic Board Utrecht	Government agencies and departments
ECSITE (Science Centres and museums)	Civil Society Organizations
EEA	EU institutions
EIONET news in Hungarian	Government agencies and departments
ELBA\REC	Private sector
Environment Agency Austria	Government agencies and departments
Environment Agency of Iceland	Government agencies and departments
Environment Department	Government agencies and departments
Environment Office	Government agencies and departments
Environment Service Ministry of Agriculture, Natural Resources and Environment Republic of Cyprus	Government agencies and departments
Environmental Protection Agency	Government agencies and departments
Environmental Protection Agency	Government agencies and departments
Environmental Protection Agency (EPA)	Government agencies and departments
Environmental protection agency of Montenegro	Government agencies and departments
Environmental Social Science Research Group	Private sector
Estonian Environment Agency	Government agencies and departments
Estonian Fund for Nature	Civil Society Organizations
ETSI	Government agencies and departments
European Collective Awareness Platforms for Sustainability and Social Innovation	Networks, Communities of Practice and Working Groups
European European Citizen Science Association (ECSA) https://ecsa.citizen-science.net/	Civil Society Organizations
European European Network of Heads of Environmental Protection Agencies – interest group on citizen science	Networks, Communities of Practice and Working Groups
European Gravitational Observatory (EGO)	Networks, Communities of Practice and Working Groups
European Network of Living Labs	Networks, Communities of Practice and Working Groups
European Science Engagement Association	Civil Society Organizations
European Space Agency (ESA)	Government agencies and departments
European University Association	Academic and research organizations
European-Mediterranean Seismological Centre	Civil Society Organizations
Executive Environment Agency (ExEA)	Government agencies and departments
Extreme Citizen Science (ExCiteS)	Academic and research organizations
FECYT (ES)	Government agencies and departments
Federal Agency for Nature Conservation	Government agencies and departments
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety	Government agencies and departments
Federal Ministry of Environment and Tourism	Government agencies and departments
Federal Office for the Environment (FOEN)	Government agencies and departments
Finnish Environment Institute (SYKE)	Government agencies and departments

FIWARE Foundation	Civil Society Organizations
FIWARE Foundation	Civil Society Organizations
FME	Private sector
Fontys Hogeschool	Academic and research organizations
Fota Wildlife Partk	Private sector
French Museum of Natural History	Government agencies and departments
Freshwater Ecology Research Group	Academic and research organizations
Fundació Catalana de l'Esplai (Fundesplai)	Civil Society Organizations
Gemeente 's-Hertogenbosch	Government agencies and departments
Gemeente Almere	Government agencies and departments
Gemeente Amersfoort	Government agencies and departments
Gemeente Apeldoorn	Government agencies and departments
Gemeente Breda	Government agencies and departments
Gemeente Capelle aan den Ijssel	Government agencies and departments
Gemeente Den Haag	Government agencies and departments
Gemeente Deventer	Government agencies and departments
Gemeente Enschede	Government agencies and departments
Gemeente Heerlen	Government agencies and departments
Gemeente Helmond	Government agencies and departments
Gemeente Maastricht	Government agencies and departments
Gemeente Roeselare (België)	Government agencies and departments
Gemeente Rotterdam	Government agencies and departments
Gemeente Sittard-Geleen	Government agencies and departments
Gemeente Zwolle	Government agencies and departments
GEOlab	Academic and research organizations
German Environment Agency	Government agencies and departments
Gonzalez Lab BCN	Academic and research organizations
Green City Accord	Government agencies and departments
Heijmans	Private sector
Herman Otto Institute	Government agencies and departments
Hogeschool Rotterdam	Academic and research organizations
Hogeschool Saxion	Academic and research organizations
Hortus botanicus Leiden	Academic and research organizations
IANUS Peacelab	Civil Society Organizations
Ibercivis Foundation	Civil Society Organizations
IBICT - Brazilian Institute of Information in Science and Technology	Academic and research organizations
ICTU	Private sector
Ihobe	Government agencies and departments
Immer Besser	Private sector
Institute for Environmental Protection and Research (ISPRA)	Government agencies and departments
Institute for Terrestrial and Aquatic Wildlife Research, University of Veterinary Medicine Hannover	Academic and research organizations
Institute of Communication and Computer Systems	Civil Society Organizations

Instituto de Energia Solar (UPM)	Academic and research organizations
International Council for Science: Committee on Data for Science and Technology (CODATA) and World Data System (WDS). A joint CODAATA-WDS Task Group (TG) addresses Citizen Science and the Validation, Curation, and Management of Crowdsourced Data. CODATA-WDS liaison	Networks, Communities of Practice and Working Groups
International Institute for Applied Systems Analysis – IIASA	Academic and research organizations
IoT lab	Civil Society Organizations
iSea	Civil Society Organizations
Istituto di Istruzione Superiore "Leonardo Da Vinci" Civitanova Marche (MC)	School
IT Italian SNPA Citizen Science Group https://www.snpambiente.it	Civil Society Organizations
JRC	EU institutions
JRC CS Team	Networks, Communities of Practice and Working Groups
Kadaster	Government agencies and departments
Kennedy Van der Laan	Private sector
Kenniscentrum Data en Maatschappij	Academic and research organizations
Kiel Science Factory	Academic and research organizations
Knowledge and Innovation SRLs	Private sector
KPN	Private sector
KU LEUVEN	Academic and research organizations
La Ciencia al Teu Mon	Civil Society Organizations
Laboratory of Clinical Pharmacology - Εργαστήριο Κλινικής Φαρμακολογίας	Academic and research organizations
Landscape Biodiversity Group, University of Tartu	Academic and research organizations
Latvian Environment, Geology and Meteorology Centre (LEGMC)	Government agencies and departments
Le Soir	Media
Leibniz and Helmholtz Associations	Networks, Communities of Practice and Working Groups
Leibniz Institue for Zoo and Wildlife Research	Civil Society Organizations
Leiden University	Academic and research organizations
LICCI (Local Indicators of Climate Change Impacts)	Academic and research organizations
Living in EU	Networks, Communities of Practice and Working Groups
MadaTech CS Lab	Academic and research organizations
Malta Environment and Planning Authority	Government agencies and departments
Mammal Research Institute Polish Academy of Science	Academic and research organizations
Mandat International	Civil Society Organizations
Mapping agencias	Government agencies and departments
Maremma Natural History Museum	Private sector
Marine Dimensions	Private sector
Ministerie van IenW	Government agencies and departments

Ministerie van JenV	Government agencies and departments
Ministry for the Environment, Energy and Climate Change	Government agencies and departments
Ministry of Agriculture	Government agencies and departments
Ministry of Agriculture, Food and Environment	Government agencies and departments
Ministry of Environment and Urbanization Gen. Dir. of Env Impact Assessment, Authorisation and Inspectio	Government agencies and departments
Mission on Climate Neutral Cities	Government agencies and departments
MountaiNow	Networks, Communities of Practice and Working Groups
Municipality of Figueira	Government agencies and departments
Museos Cientificos Coruneses	Government agencies and departments
Museum fur Naturkunde Berlin	Academic and research organizations
Muzeu i Shkencave të Natyrës "Sabiha Kasimati"	Academic and research organizations
Mykolas Romeris University	Academic and research organizations
National Biodiversity Data Centre	Government agencies and departments
National Environment Protection Agency	Government agencies and departments
National Institute for Public Health and the Environment	Government agencies and departments
Natural Sciences Museum of Granollers	Government agencies and departments
Ndejje University	Academic and research organizations
NEN	Government agencies and departments
Netherlands Environmental Assessment Agency	Government agencies and departments
NIHR Oxford Biomedical Research Centre Oxford University Hospitals NHS Foundation Trust	Academic and research organizations
NORDECO	Civil Society Organizations
Norwegian Environment Agency	Government agencies and departments
NVTL	Government agencies and departments
OASC	Networks, Communities of Practice and Working Groups
Objectif Sciences International	Civil Society Organizations
OeAD	Government agencies and departments
Open Geospatial Consortium (OGC)	Networks, Communities of Practice and Working Groups
Open Systems UB	Academic and research organizations
Orange	Private sector
OSDG	Networks, Communities of Practice and Working Groups
OsloMet	Academic and research organizations
Over Morgen	Private sector
PADI EMEA	Private sector
Phbm	Private sector
Piliečių mokslo asociacija (CS in Lithunia)	Civil Society Organizations
Platform31	Networks, Communities of Practice and Working Groups
Politie	Government agencies and departments

Portuguese Environment Agency	Government agencies and departments
Promoter	Private sector
Provincie Overijssel	Government agencies and departments
Provincie Zuid-Holland	Government agencies and departments
Rabobank	Private sector
Research Institute for Nature and Forest (INBO)	Government agencies and departments
Rijksvastgoedbedrijf	Government agencies and departments
River Collective	Civil Society Organizations
RIVM	Government agencies and departments
Robotic Association SKALP	Civil Society Organizations
Royal Belgian Institute of Natural Sciences	Government agencies and departments
RVO	Government agencies and departments
Save your Globe Aps	Civil Society Organizations
SCC01	Networks, Communities of Practice and Working Groups
Schone Rivieren (Clean Rivers)	Civil Society Organizations
Science at Home	Academic and research organizations
Science for Change	Private sector
SciStarter	Networks, Communities of Practice and Working Groups
Scivil	Civil Society Organizations
SE Swedish Citizen Science Network https://medborgarforskning.se	Civil Society Organizations
Sensor Community	Networks, Communities of Practice and Working Groups
Serbian Environmental Protection Agency (SEPA)	Government agencies and departments
Slovak Environmental Agency	Government agencies and departments
Slovenian Environment Agency	Government agencies and departments
Southern Federal University	Academic and research organizations
SPOTTERON	Private sector
Statistical agencies	Government agencies and departments
STELAR	Private sector
Stickydot	Private sector
Surfrider Foundation Europe	Civil Society Organizations
Swedish Environmental Protection Agency	Government agencies and departments
Taking Citizen Science to Schools	Academic and research organizations
Technical University of Denmark	Academic and research organizations
The Flemish Environment Agency (VMM)	Government agencies and departments
The Open University	Academic and research organizations
Thunen Institute for Biodiversity	Academic and research organizations
Tilburg University	Academic and research organizations
Trackers and Stewards Associations	Civil Society Organizations
Trinity College Dublin	Academic and research organizations
Trust in Digital Life	Private sector
Universidad Barcelona (UB)	Academic and research organizations
Universidad de La laguna	Academic and research organizations

Universitat Autonoma de Barcelona	Academic and research organizations
University College Cork	Academic and research organizations
University of Antwerp	Academic and research organizations
University of Cambridge	Academic and research organizations
University of Castilla La Mancha	Academic and research organizations
University of Melbourne	Academic and research organizations
University of Oulu	Academic and research organizations
University of Patras	Academic and research organizations
University of Primorska	Academic and research organizations
University of Rome Tor Vergata - Department of Biology	Academic and research organizations
University of Sassari	Academic and research organizations
University of Veterinary Medicine	Academic and research organizations
VA Public & Science	Civil Society Organizations
VITO	Academic and research organizations
VodafoneZiggo	Private sector
VUB	Academic and research organizations
WaterLab	Academic and research organizations
Waterschap Vallei en Veluwe	Government agencies and departments
WECF	Civil Society Organizations
We-Consultants	Private sector
Wildlife Ecology and Management	Academic and research organizations