The Copenhagen Framework on Citizen Data (v1.0)

Prepared by Collaborative on Citizen Data

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I. Objectives

1. Citizen contributions to data, which encompasses citizens participation in different processes throughout the data value chain[1], from design, collection to dissemination and use, is increasingly recognized as critical to the wellbeing of all members of society, especially marginalized groups, and to ensure that data remain relevant and impactful. The impacts include empowering communities in their dialogue with public institutions, respecting marginalized voices, expanding data production power to citizens, addressing intersectional marginalisation, and holding institutions accountable, all in support of the "leave no one behind" principle of the 2030 Agenda for Sustainable Development.

2. Citizen contributions to data also help overcome the data challenges we face today, such as invisibility of marginalisation in official statistics, lack of trust in institutions and the disconnect between local issues and national policymaking, fostering a more inclusive decision-making process. By filling critical data gaps for marginalized groups, ensuring that these groups' experiences are represented in data and statistics, citizen contributions to data advances fairness, inclusiveness, openness, accountability and transparency in statistics and in public policy. Citizen contributions to data, such as citizens leading data productions or participating in official statistics production, can be initiated by different stakeholders, whether state (national statistical offices or other government institutions) or non-state actors, including individuals, civil society organisations (CSOs) or academia; and can take place at different stages of the data value chain, from the design of data collection tool, through data production and analysis, until dissemination and uptake .

3. Unleashing the full potential of citizen contributions to data, however, faces many challenges. These include a lack of trust or engagement between the state and non-state actors, concerns about quality of data collected by non-state actors, limited knowledge and capacity of different actors to interact with data, and concerns over sustainability of citizen data efforts, among others.

4. The Copenhagen Framework on Citizen Data has been developed to address these challenges and leverage the power of the citizen contributions to data. This framework conceptualizes and defines "citizen data", outlines many roles that citizens and national statistical offices can play in data processes; and formulates action points for the sustainable production and use of citizen data. More specifically, the Framework aims to

a. Lead to positive transformation in data-driven development by providing a tool that guides diverse stakeholders toward a more inclusive data and policy environment, while identifying areas where capacity building and support are needed.
b. Raise awareness among data communities about the importance of meaningful and sufficient participation by citizens in data processes, helping to ensure such processes are fully reflective of the situation of all population groups, including the underrepresented, underserved and marginalized.
c. Encourage the responsible production and use of citizen data as guided by the principles of citizen data (Chapter III), and support citizens, including marginalized population groups, to develop a sense of agency and ensure their representation, as they actively engage in data processes for official use.
d. Define the role of national statistical offices (NSOs) in relation to citizen data, positioning them as steward of the national data ecosystem, and increase their responsiveness to citizens, communities and civil society organisations as complementary data producers, thereby enabling them to contribute with their data to local and national level planning and implementation.
e. Contribute to integrating citizens' perspective in broader discussions within the national data ecosystem, including digital transformation (e.g. Global Digital Compact), artificial

[1] The data value chain describes the evolution of data from collection to analysis, dissemination, and the final impact of data on decision making.

intelligence, and data governance.

5. The Framework is organised into five main parts: concept and definition, key principles, enabling environment, the role of NSOs, and the implementation roadmap. The *concept and definition* section defines possible types of citizen data and offers a common understanding of essential concepts and definitions, forming a solid foundation for work on citizen data. The *key principles* section includes 13 key principles to ensure the responsible, professional and ethical production and use of citizen data. The section on the *role of national statistical offices* specifies how NSOs should position themselves in relation to citizen data. The *enabling environment* section outlines areas critical for nurturing sustainable production and use of citizen data. The *roadmap* section outlines strategic actions to uphold the principles of citizen data and foster a sustainable environment for citizen data coordination, production and use.

6. The Framework focuses on concepts and objectives rather than specific methods. While the Framework outlines high-level goals, it will be accompanied by separate practical guidance to support implementation. This approach allows flexibility for diverse contexts while providing users with actionable steps and technical resources for adapting these objectives in practice.

7. Recognizing the dynamic nature of data needs, the advancements in citizen data, and the evolving role of national statistical offices within the national data ecosystem, the Framework will continue to evolve, ensuring its ongoing relevance and effectiveness.

8. The Framework was developed by the Collaborative on Citizen Data, established in April 2023, to "*provide a space to share knowledge and experiences, foster collaboration across different communities, identify conceptual and methodological gaps and capacity needs, and inform the development of guidance, including on quality assurance*".[2]

Box 1. Key terms

Citizen

For the purpose of this work, "citizen" is to be understood in the broad context. Refugees, asylum seekers, migrants, stateless persons and other marginalized groups might not have citizenship in a country they live in, but they are nonetheless rights-holders under international and national laws and face specific needs which are equally important to be captured by adequate data and to actively contribute to the data production process. Therefore, they are all included within the scope of this framework under the umbrella term "citizen".

Citizen data

Although there are many terms for citizen engagement in data—such as citizen science, community science, citizen-generated data, crowdsourcing, volunteered geographic information, citizen observatories, citizen engagement in social innovation, community-based monitoring, participatory mapping, participatory action research, community-driven or community-generated data—this Framework uses "citizen data" as an inclusive, consistent term that encompasses citizen involvement in data collection, production, and use as described in this document.

National data ecosystem

There is no official definition of a national data ecosystem, but broadly it can be described as including the people, organizations, processes, and technologies that are involved in the creation, use, and governance of data. Within the data ecosystem, various state and non-state actors collect, store, share, and analyze data. Citizens and citizen data are an integral part of the national data ecosystem, along with national statistical

[2] Requested by the 54th session of the United Nations Statistical Commission in 2023. UN Statistical Commission, Report on the 54th session, E/2023/24E/CN.3/2023/37, Decision 54/102, paragraph (h).

offices, other government entities, the private sector and academia and data produced by them.

II. Concept and definition

1. Operational definition of citizen data

9. Citizens contribute to data across all stages of the data value chain in a variety of ways. In relation to official statistics, there are two types of citizen contributions. The first involves data initiatives outside of official statistics; these initiatives have a primary objective to empower citizens, enhance their agency, and make them visible in data through meaningful and sufficient citizen engagement. The second involves citizen participation to support official data collections, analysis, dissemination and use by National Statistical Offices (NSOs), such as censuses and surveys, with the goal of integrating citizens' perspective in the design of surveys, improving response rates, enhancing data quality, making data more inclusive and more impactful. This Framework focuses on the first type.

Box 2. Operational definition of citizen data

'Citizen Data' refers to data originated from initiatives for which citizens are engaged at various stages of the data value chain, guided by key principles that promote inclusive, responsible, professional and ethical production and use, regardless of whether or not these data are integrated into official statistics.

10. The definition encompasses two concepts: citizen participation and stages of the data value chain in which citizens are engaged. It maintains flexibility by not specifying the exact degree or quality of engagement, or prescribing specific stages where citizen involvement is necessary. However, citizen data producers are encouraged to aim for the highest possible degree and quality of engagement, fostering meaningful citizen involvement at all stages of the data value chain whenever feasible. When participation throughout the entire data value chain is not possible, prioritizing engagement at the initial design stage—where citizens can influence the objectives and methodologies—can significantly enhance the relevance and impact of the data produced.

11. With regards to citizen participation, it is meaningful, when it refers to those initiatives that empower citizens to become data agents and have an impact on the issues that matter to them and affect them, such as local and national policies. It can be measured along two dimensions: degree and quality of engagement.[3] The degree refers to measurable aspects such as the extent, duration, effort, representation of concerned groups, and intensity of participation, while quality reflects how well the engagement aligns with citizens' needs and interests, the impact of their contributions, and the provision of meaningful opportunities for influence.

12. With regards to stages of the data value chain, these might have different impacts on the quality and relevance of the citizen data produced. For the purpose of this framework, the stages of the data

[3] Arnstein, Sherry R. "A Ladder of Citizen Participation," JAIP, Vol. 35, No. 4, July 1969, pp. 216-224. Shirk JL et al. 2012 Public participation in scientific research: a framework for deliberate design. Ecol. Soc. 17, 29. (doi:10.5751/ES-04705-170229). Haklay M. 2013 Citizen science and volunteered geographic information: overview and typology of participation. In Crowdsourcing geographic knowledge, pp. 105–122. Berlin, Germany: Springer. Haklay, M., Fraisl, D., Greshake Tzovaras, B., Hecker, S., Gold, M., Hager, G., … Vohland, K. (2021). Contours of citizen science: a vignette study. Royal Society Open Science, 8(8). https://doi.org/10.1098/rsos.202108

value chain, also mapped against the Generic Statistics Business Process Model (GSBPM) [4], are understood as follows.

1. Design stage (GSBPM phases 1 and 2), define
(a) objectives, policy issues and data needed
(b) partnerships/collaborations
(c) methodologies and approaches for data collection
(d) who can access and use the data and how data are being used

2. Conduct data collection operations (GSBPM phases 3 and 4)
3. Conduct initial data processing, validation of results and release (GSBPM phase 5)
4. Conduct analysis and dissemination (GSBPM phase 6 and 7)
5. Organize data uptake, connecting with users and encouraging/incentivizing data use (GSBPM phase 7)
6. Review data impact, gather feedback (GSBPM phase 8)

[4] The GSBPM is an international standard that defines the business processes needed to produce official statistics, aiming at modernizing statistical production processes and helping statistical organizations improve efficiency and share best practices. The GSBPM phases are as follows: 1. Specify needs; 2. Design; 3. Build; 4. Collect; 5. Process; 6. Analyse; 7. Disseminate; and 8. Evaluate. More information about GSBPM is available https://unece.org/statistics/documents/2019/01/standards/gsbpm-v51

2. Types of citizen data initiatives

13. The objectives and the collaboration modality help differentiate and categorize different types of citizen data initiatives, which is essential for understanding their unique contributions and challenges to better inform further support. The objective refers to what the initiative aims to achieve, while the collaboration modality indicates whether a non-state or a state institution initiated the data collection and the engagement of other partners.

A. Objectives of citizen data

14. Citizen data are collected for multiple purposes, ranging from supporting policy monitoring and execution to ensure equal rights and access, to elevating public knowledge, comprehension, and awareness. Additionally, they play a crucial role in advancing scientific studies and research. This summary presents an array of objectives that citizen data endeavors aim to fulfill. While not exhaustive, these objectives furnish insight into the potential of citizen data. These outlined objectives are instrumental for subsequent discussions on citizen data, particularly when examining other facets such as data quality, which may vary according to the data's intended use.

- *Responding to data needs of groups or communities that do not feel represented by the official data available in their national or local data ecosystem*. An important avenue to address the fact that some groups are left out of official statistics due to reasons such as resource and practical constraint related to traditional data collection methods, lack of awareness, difficult access, or discrimination against them.

- *Evaluating or monitoring service access and supporting legal and policy initatives*. A critical aspect of ensuring equitable and effective service delivery in sectors such as healthcare, education, social services, etc. This process involves assessing the availability, affordability, and quality of services, and using the gathered data to inform legal and policy initiatives.

- *Assessing and monitoring the level of recognition and implementation of rights*. A fundamental process that safeguards and promotes human rights is ensuring that individuals and communities are able to enjoy their basic freedoms and entitlements. This process involves ongoing scrutiny, evaluation, and documentation of the extent to which legal rights and international human rights standards are acknowledged, effectively put into practice and experienced by rightsholders.

- *Challenge official data or* providing *complementary perspectives with official statistics.* This enriches the overall data landscape and supports more transparent, inclusive decision-making.

- *Understanding complex issues, dynamics and powers prevailing in communities* that cause increasing marginalization.

- *Increasing public understanding and awareness, mobilizing actions and empowering local communities.* Intertwined processes that can drive positive change and foster greater resilience, inclusion, and well-being in societies.

- *Providing evidence for scientific studies and research*. A crucial step in the scientific process that helps establish credibility, validate hypotheses, and contribute to the advancement of knowledge.

- *Training individuals and/or building community capacity* for decision making or taking actions.

B. Collaboration modality

15. This section reviews the initiator/s of a citizen data initiative and the types of shared ownership or collaboration involved. It describes the possible primary actors (civic, state institution or joint) driving the initiative and indicates the various natures of the partnership, from fully citizen-driven to state-led with varying degrees of citizens participation. The types of initiative may be grouped as follows:

1. **Civic action** - fully driven, generated and owned by the citizens, communities or CSOs.
2. **Civic-driven collaboration** - initiated by citizens, communities or CSOs and implemented in collaboration with NSO or other state actors.
3. **Jointly initiated collaboration -** initiated together by citizens, communities or CSOs and NSO or another state actor. May also be considered as "co-creation".
4. **NSO-driven collaboration** - Initiated by NSOs and implemented in collaboration with citizens, communities or CSOs.
5. **Collaboration driven by other actors** – initiated by other actors, such as academia, or national human right institutions, and implemented with sufficient and meaningful engagement with citizens, communities or CSOs.

Initiatives by other actors without collaboration nor sufficient and meaningful engagement of citizens are not considered citizen data and therefore are not in the scope of this framework.

3. Taxonomy of citizen data

16. Table 1 below illustrates the types of citizen data initiatives, categorized by the institutions involved at the different stages of the data value chain. These fall mainly into two groups: (1)initiatives classified as civic action, civic-driven collaboration, or jointly initiated collaboration, in which citizens are normally engaged throughout the entire data value chain and (2) initiatives led by national statistical offices or other state actors and Table 1 further illustrates the stages of the data value chain where citizen participation can occur.

Table 1. Taxonomy of citizen data: examples of meaningful citizen participation

	Stages of the data value chain	**Civic action (modality 1)**	**Civic-driven collaboration (modality 2) or jointly initiated collaboration (modality 3)**	**NSO or other state or non-state actor driven collaboration (modality 4-5)**
1	Design stage (GSBPM phases 1 and 2), define: (a) objectives policy issues and data needed (b) partnerships/collaborations (c) methodologies and approaches for data collection (d) who can access and use the data and how data are being used	Citizens' highest-degree and quality of participation at all stages of the data value chain. Citizens and/or CSOs are in charge of the data collection, dissemination and use.	Citizens and/or CSOs lead the initiative, in collaboration with NSO or other partners. In this case NSOs/other partners may contribute at different stages of the data value chain. At the design stage, citizens and/or CSOs could work with state institutions for support on designing a data collection. One example may be that NSO provides sample frame and helps design the sample for the	Citizens and/or CSOs collaborate with state institutions, such as national statistical offices and national human rights institutions, or with non-state institutions such as academia, to co-design the objectives of the data collection, determine the partners to involve, select data collection methods, agree on data access rights, and decide on appropriate uses for the collected data.

		Under modality 3, citizens and/or CSOs and the partner share equal decision-making responsibilities for the entire initiative.	data collection led by citizens.	
2	Conduct data collection operations (GSBPM phases 3 and 4)		One example of this is the marine litter example. CSOs are the ones leading the data collection but with support from the NSO on the aligning with internationally agreed methodology.	Citizens may contribute to this stage when the data collection task is challenging for the initiator of the initiative, such as with sensitive topics or some environmental issues that need the help from citizens. Additionally, the collaboration can also stem from other joint programmes or initiatives aiming at actively engaging with citizens and civil society.
3	Conduct initial data processing, validation of results and release (GSBPM phase 5)		In this phase, NSOs can help with data validation and processing method.	In this phase, the involvement of citizens and CSOs can be instrumental in ensuring proper data processing to guarantee privacy and confidentiality. In some cases, citizens contribute directly to the data processing activities, such as disaster data classification and crowdsourcing map validation.
4	Conduct analysis and dissemination (GSBPM phase 6 and 7)		One example of this is data generated by CSOs are aggregated, standardized and shared with NSOs for SDG reporting	Citizens and CSOs are involved in analyzing and disseminating data to help ensure that the critical issues are properly analyzed and highlighted. This helps with reaching out to the target audience, including by ensuring accessibility by all groups.
5	Organize data uptake, connecting with users and encouraging/incentivizing data use (GSBPM phase 7)		NSOs and other state institutions could serve as an intermediary to connect with policymakers for the uptake and use of citizen data.	Citizens are engaged to increase data value and impact, especially for promoting change and addressing issues that are relevant to specific groups and communities.
6	Review data impact, gather feedback (GSBPM phase 8)		Citizens and other institutions work together to improve the data collection/instrument and support future data collection programmes.	Citizens and communities are involved in this last step to help improve data initiatives, correct methodologies and other technical aspects, and foster the development of future data collection programmes.

III. Principles of citizen data

1. List of principles

17. The principles for citizen data are established to ensure that data production and use are responsible, professional and ethical. These principles serve as a framework for data governance, management, and protection, in the context of organizations that collect and use citizen data. The

principles are extracted and adapted from existing data and statistical principles, including the Fundamental Principles of Official Statistics, and taking into account the human rights-based approach to data and other considerations.

1. **Independence**: Data collection should be initiated and conducted free of any unwanted political pressure or by donors and other organizations.
2. **Relevance:** Data collected should directly respond to the issues identified or valued by the citizens or communities and the organizations representing them.
3. **Participation and inclusion:** All groups of interest should be involved, including those that are vulnerable and marginalized, and participation should be free, open, equitable, accessible, and transparent.
4. **Informed consent:** Individuals should provide informed and voluntary consent before their data are collected. They should have control over their data and understand the purpose and use of the data collected.
5. **Professional standards:** Data collection, processing and dissemination should be conducted according to professional and methodological scientific considerations to ensure data quality, relevance and fitness for use, ultimately maximizing its societal or policy impact.
6. **Data security:** Copyright, intellectual property, data sharing agreements, and measures to ensure the data is securely stored and managed should be clearly defined and implemented.
7. **Self-definition and self-identification:** The population of interest should be self-defined and personal identity and characteristics should be assigned to individuals through self-identification (at individual's discretion).
8. **Data sovereignty**: Individuals and communities have the right and authority to control their data at all stages of the data value chain, from collection to use, ensuring the safe and ethical handling and use of their data.
9. **Transparency:** Data collectors should provide clear, openly accessible metadata and paradata about their operations, including research design, data collection methodology and description on how data will be used and shared.
10. **Ethical and safe production and use:** Protection of human rights, safety and wellbeing should be a primary concern throughout the data value chain. Proper use of data should be ensured in order not to harm, discriminate or stigmatize any individual or groups.
11. **Accountability**: Data producers are accountable for upholding human rights in their operations and for the impact of their data collection operations.
12. **Confidentiality, privacy and data attribution:** Data related to individuals, whether natural or legal persons, must be treated as strictly confidential and used exclusively for the purpose of gathering relevant evidence and insights that facilitate collective benefit in line with plans agreed by the citizens, communities and/or organizations involved. Information is not collected with the purpose of gathering information on single individuals. Information that can be used to identify individuals directly or indirectly must never be disclosed. The contributions of individuals, communities, or organizations should be appropriately recognized (attribution), while safeguarding confidentiality/
13. **Openness and accessibility:** Data should be made accessible and publicly available to all, including persons with disabilities and those with limited access to technologies, and results should be published in an open access format for use and re-use, while ensuring data confidentiality and privacy.

2. Implementation of the principles

18. For the application of the principles to be effective, there needs to be an enabling environment (see chapter IV below). In addition, below are some notes on how the principles are effectively upheld in the data processes.

19. Principle 1 is intended to ensure that data collection is free from any undue influence, especially political pressure, and is not manipulated to reflect or deliberately push an agenda that would undermine the quality and usability of the results.

20. Principles 1 and 2 together are meant to ensure that decisions on the issues to be addressed in the data collections are taken by the citizens or the organizations that represent them and not driven by political interests. In addition, citizens should be allowed to independently decide the perspective taken on issues of relevance to them and to collect data that directly respond to their specific needs.

21. Principle 3 should not be interpreted as preventing compensation to those who participate in particular initiatives such as the case in some of the citizen science data ones. In addition, it is important to note that participation should be meaningful and aim at fostering shared decision-making and recognizing the agency of participants.

22. The application of principle 4 is meant to ensure that individuals are provided with the necessary information to make an informed decision about whether or not they want to participate in the data collection activity. The information should clearly explain the purpose of the research, the procedures involved, potential risks and benefits, and how the data collected will be used and stored.

23. The application of principle 5 should take into account the respective capacities and limitations of all involved parties. Professional, methodological and scientific consideration should also refer to existing international standards and practices, including those enshrined in the Fundamental Principles of Official Statistics (FPOS) and United Nations National Quality Assurance Framework for Official Statistics (NQAF).

24. Principle 6 emphasizes the importance of clearly defining and protecting the copyright and intellectual property of the data and research produced. When data are meant to be shared with larger audiences, which might not always be the case, data sharing agreements should be clearly defined and implemented.

25. Principle 7 should be interpreted to include the right to self-determination, which in the data context is the ability to organize and control data in relation to a collective identity, such of Indigenous groups. Implementing this principle may present challenges, particularly when the collected data is associated with social protection mechanisms. Transparency and co-designing the data collection and social protection mechanisms could be helpful. . This important principle is central to the implementation of citizen data collection and should be agreed at the outset of the partnership with the NSO and other government institutions.

26. Principle 8 on data sovereignty is particularly important for Indigenous Peoples who need to ensure that data are produced and used in a way that is accurate and appropriate for their community and include the right to refuse and prevent certain uses of their data.

27. Together with principle 4, principle 9 is meant to ensure trust between data producers and the individuals participating in the data collection. It also helps ensure that data collection and use adhere to ethical principles. Based on principle 9, there should be complete transparency on all data practices throughout the data value chain.

28. Adherence to principle 10 implies the adoption of all other principles from ensuring consent, protecting privacy and security to ensuring participation and inclusion. The principle underscores the ethical imperative to prioritize human rights, safety, and well-being of all individuals, at all stages of data production and use.

29. Principle 11 is key to ensure the protection of individuals and communities whose safety and wellbeing could be affected directly and indirectly by the data and should be applied irrespective of

whether or not there are already national protection regulations in place.

30. In order to uphold this principle 12, it is crucial to establish clear measures and procedures to ensure the security of data and prevent unauthorized access. Measures should be in place also to prevent that data pertaining to any single individual be used for purposes other than the ones agreed by participants and to ensure data are used strictly for providing aggregated information and insights on the issues for which the data collection is intended. The implementation of principle 12 is closely linked to principle 6 that aims at ensuring data security measures. Contributors will be acknowledged in a manner that protects their privacy, such as through anonymized or collective attribution (e.g., 'Community-level data' or pseudonyms)

31. Adherence to principle 13 is important to maximize the value and impact of the data collected especially by providing formats and tools to ensure access by to those who may face challenges and have specific needs. Ensuring openness and accessibility should not be seen as at odds with other principles related to protection of confidentiality and privacy, but rather the two aspects should be considered together with a view towards balancing openness and accessibility with the protection of confidentiality and sensitive information, including by applying anonymization and implementing appropriate security measures to safeguard data from unauthorized access and misuse.

IV. The role of national statistical offices

32. Citizen data can be classified as:
1) Citizen data to be integrated into official statistics;
2) Citizen data that are quality assured and complement official data, but do not need to be integrated into official statistics;
3) Other citizen or community-based efforts that would remain independent and outside of the official data.

33. National statistical offices (NSOs) play a key role in fostering the sustainable production and use of citizen data. As custodians of official statistics, guided by the Fundamental Principles of Official Statistics, they are particularly relevant for citizen data that are linked to official statistics, classified under categories 1 and 2 above[5] NSOs can also be relevant for citizen data under category 3, in support of a data culture that upholds strong methodologies in data generation and use.

34. The traditional role of NSOs has been evolving, influenced by technological transformation, transformation of the data ecosystem within the country and new expectations for official statistics as public good. The vision of NSOs as “data stewards” and “trust brokers” facilitating citizen participation in data includes (a) producing quality standards, guidelines and methodologies for validating citizen data, to ensure use for official statistics and/or policymaking; (b) building the capacity of citizen data producers; (c) facilitating partnerships between citizens, civil society, and government; and (d) promoting awareness of the value of citizen data and advocating for its integration into official statistics and national planning.

35. By supporting citizen data efforts, NSOs also enhance inclusivity within their own data collections, such as censuses and surveys, and strengthen their role as data stewards within the national data ecosystem.

V. Elements of an enabling environment for the sustainable

[5] United Nations Expert Group Meeting on Harnessing data by citizens for public policy and SDG monitoring: a conceptual framework, November 2022, Bangkok, Thailand

coordination, production, and use of citizen data

36. Citizen data, along with the data produced by NSOs, other state entities, the private sector, and academia, forms an essential part of the national data ecosystem. We focus on those elements that are critical to fostering inclusivity and co-creation, and addressing intersectional marginalisation, which are foundational to the implementation of the Copenhagen Framework on Citizen Data. The list that follows offers an aspirational yet non-exhaustive set of aspects critical to nurturing such an environment.

37. **A whole-of-society approach to data**. While the 2030 Agenda for Sustainable Development has enabled a whole-of-society approach for its implementation, such approach needs to be further strengthened in data. This requires changes in mindsets, power dynamics, and structural frameworks within the national data ecosystem that acknowledge the contribution of citizens and communities to data, i.e., taking an inclusive approach that involves various stakeholders, especially marginalized communities, and ensures the data reflects diverse perspectives. Partnerships between state institutions, academia, the private sector, CSOs and citizens facilitate the pooling of resources, knowledge and expertise. This collaborative approach can enhance the impact and reach of citizen data.

38. **Skills and knowledge**. Technical skills and knowledge for the production of fit-for-purpose data and its use are important for all stakeholders within the national data ecosystem, including citizens, communities and state institutions. A core element of the conceptual framework is the fostering of additional skills that are particularly relevant to citizen data, including building trust, fostering partnerships, and implementing sufficient and meaningful level of citizen engagement across different stages of the data value chain. It is also essential to focus on capacity strengthening that addresses legal and ethical concerns, and provide learning platforms that replicate best practices to meet growing demands.

39. **Trust**. Trust among stakeholders is essential for a robust national data ecosystem. To ensure stakeholders understand and value each other's interests, available capacities and limitations, it is important that all stakeholders are brought to the table from the beginning, ensuring they 'speak the same language', and begin with establishing a shared overarching goal. Joint ownership for this goal and mutual trust are key prerequisites for success, accepting that everyone can contribute with their own means. This trust is further nurtured when there is transparency from both the state institutions and citizens in their processes and decisions, and when there are mechanisms for implementing citizen oversight, involving citizens in decision-making, and adapting to their evolving needs and concerns. Furthermore, trust in the data process is reinforced through transparency, rigorous quality standards, citizen engagement, and adherence to ethical practices. The generation of citizen data and their integration into policymaking not only depend on this trust but significantly contribute to strengthening it.

40. **Laws and regulations.** In a national data ecosystem, laws and regulations governing data openness, usage, and protection are crucial. For citizen data pertaining to individuals, it is essential to have legal frameworks and regulations that address data privacy, ownership or control of data collected from citizens, and stipulations on who can use such data and how. Additionally, to facilitate the integration of citizen data into official statistics, national statistical laws would need to be adapted to recognize non-public institutions including citizens, communities and CSOs could also be legitimate producers of official statistics.

41. **Data governance mechanisms and institutional arrangements**. Within a well-functioning national data ecosystem, inclusive and well-functioning data governance systems need to be in place that also allows for citizens to have agency and participate in decision-making over data. These include bodies that enact overarching strategic and policy objectives, such as an executive-level cross-functional group of key stakeholders that makes policy decisions, provides strategic direction, and mobilizes the necessary resources. To execute the strategy and manage the national data system, technical working group or task forces can then be established to address specific technical issues or to foster coordination and build partnership. The role of national statistical offices in in setting standards on data production and use,

including citizen data, needs to be strengthened. Likewise, the role of CSO networks can be leveraged as important intermediaries to facilitate interaction between public institutions like NSOs and citizens.

42. **Inclusive statistical and technical infrastructure**. Statistical and technical infrastructure should be made available to enable the equitable production, processing, flow and use of citizen data; and to facilitate the interoperability and integration of citizen data with other types of data within the national data ecosystem. Statistical infrastructure includes concepts and definitions, classifications, methodological guidance and standards. Technical infrastructure includes tools and platforms for data collection, storage, processing and dissemination. Access to the statistical and technical infrastructure needs to be inclusive of communities and marginalized population groups.

43. **Data quality assurance that is fit-for-purpose**. A robust, inclusive and transparent quality assurance framework encompassing standards for quality of quantitative and qualitative data, and metadata is important for citizen data to maintain technical integrity while still offering flexibility, innovation, and responsiveness to diverse needs. The framework should emphasise the complementarity of citizen data and official statistics while leveraging the strengths of both to create a comprehensive and reliable data ecosystem. Some key aspects include:

44. **Funding**. A well-functioning national data ecosystem requires adequate funding. Although the production of official statistics falls under the government's purview, it is vital to establish innovative funding mechanisms to ensure sustained financial support for citizens, communities, civil society organizations and citizen science communities in producing citizen data, including its capacity strengthening.

VI. A roadmap for implementation

45. The roadmap outlines the high-level strategic plan and approach for the Collaborative to support countries and communities in localizing and implementing the Copenhagen Framework on Citizen Data. It emphasizes adherence to the Framework's principles and fostering an enabling environment for the sustainable coordination, production, and use of citizen data. The plan encompasses the following key areas:

- *Mobilizing Resources and Partnerships:* Engaging development partners, National Statistical Offices (NSOs), Civil Society Organizations (CSOs), citizen science networks, Major Groups and other stakeholders, human rights institutions, academia, UN Country Teams, and regional and international organizations to support the framework's implementation.

- *Advocating for Citizen Data:* Promoting the importance of citizen data as a critical tool for inclusive data and policymaking.

- *Bridging Efforts and Fostering Knowledge Exchange:* Sharing experiences, impact stories, and lessons learned at local, national, and global levels while encouraging cross-learning and collaboration.

- *Developing Knowledge Products and Tools*: Creating resources to facilitate the effective implementation of the Framework.

- *Assessing Needs and Building Capacity*: Strengthening the capabilities of stakeholders across local, national, and global levels.

- *Supporting Sustainable Partnerships and Institutional Arrangements within the country*: Supporting the establishment of long-term mechanisms for collaboration within countries to

ensure the continuity and impact of citizen data efforts.

Annex. Consultation processes

The framework is an outcome of a series of consultative processes, underlined below:

a. The United Nations Expert Group Meeting on Harnessing data by citizens for public policy and SDG monitoring: a conceptual framework[6], November 2022. The meeting requested a conceptual framework that offers *the possible delineation of citizen data into categories that can be defined by (a) how data are used; and (b) the processes that data are generated, whether initiated by NSOs, civil societies, or jointly.* It also identified categories of citizen data that are *(a) to be integrated into official statistics; (b) quality assured and complementary to official data but not necessarily to be integrated into official statistics and (c) to remain independent from official statistics*.
b. The 54th Session of the United Nations Statistical Commission, March 2023. The Commission "*stressed the need to develop a conceptual framework on CGD[7] and supported the establishment of the Collaborative on Citizen Data to provide a space to share knowledge and experiences, foster collaboration across different communities, identify conceptual and methodological gaps and capacity needs, and inform the development of guidance, including on quality assurance*"[8].
c. The United Nations Expert Group Meeting[9], September 2023. The meeting informed the development of the draft "*Copenhagen Framework on Citizen Data*", with a strong focus on the sufficient participation of citizens in defining citizen data.
d. The 55th Session of the United Nations Statistical Commission, March 2024. The Commission "supported the draft Copenhagen Framework on Citizen Data".
e. The United Nations Expert Group Meeting[10], July 2024. The meeting helped with the refinement of the Framework and co-designed the roadmap for the Framework implementation.

In 2024, additional activities included a series of open consultations conducted through major forums, webinars, and other platforms. These consultations focused on the draft Copenhagen Framework on Citizen Data and its implementation.

[6] United Nations Statistics Division, 2022. https://unstats.un.org/sdgs/meetings/harnessing-data-by-citizens-for-public-policy-and-SDG-monitoring/ Participants of the meeting include national statistical offices, civil society organisations, national human rights institutes, regional and international organisations. The Expert Group also recommended considerations on "*how to channel the citizens' efforts to support the traditional data sources such as surveys and censuses to ensure those foundational data are more inclusive*."

[7] The original language in the document but the framework has expanded to cover both citizen-generated data (CGD) and citizen science data.

[8] United Nations Statistical Commission, Report on the 54th session, E/2023/24E/CN.3/2023/37, Decision 54/102, paragraph (h). The highest body of the global statistical system, attended by Chief Statisticians from national statistical offices, regional and international organisations.

[9] https://unstats.un.org/UNSDWebsite/citizen-data/events-details/650

[10] https://unstats.un.org/UNSDWebsite/citizen-data/events-details/695