Feedback on the 'Draft Principles for Open Science Monitoring' from the members of the Citizen Science and Open Science Community of Practice

About this document

Members of the 'Citizen Science and Open Science Community of Practice' provided feedback, comment and input on the response to the 'Draft Principles for Open Science Monitoring':
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Feedback has been organised into the relevant sections of the draft 'Draft Principles for Open Science Monitoring', with the names of contributors provided should members of the 'Open science monitoring initiative (OSMI)' wish to contact members and seek clarity.

A 'living' version of the STARDIT report about the co-creation of this document is available here: STARDIT.wikimedia.org.au/wiki/0202410300001 (a permanent stable version from 2024.11.28 can be found here).

This document was collated and compiled by Dr Jack Nunn, and checked by the contributors on 2024.11.28.

Further information about the Citizen Science and Open Science Community of Practice is available here. Contact Jack.Nunn@ScienceforAll.World

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Summary of feedback

Overall:
- The document should be broader in scope, including open data, knowledge translation, and non-academic research.
- Indicators need clearer definitions and shouldn't be used for ranking.
- Stakeholders, including the public, should be involved in developing and using the indicators.
- Transparency and reproducibility are crucial. Emphasize open source tools, data discoverability, and ethical considerations.

By section:
- Introduction:
  - Clarify the scope - all research or some?
  - Highlight limitations of indicators.
  - Consider "technical solutions" instead of "software solution".
  - Remove overly specific examples like clinical trials.
- Part 1: Relevance:
  - Define indicators and how they're chosen.
  - Consider economic factors in inclusivity.
  - Include community-based research.
  - Indicators should be meaningful for all stakeholders.
  - Consider "tiers" for indicators based on complexity.
- Part 2: Transparency & Reproducibility:
  - Emphasize public communication of findings and principles.
  - Address managing sensitive information and acknowledge limitations of open access for indigenous data.
  - Consider alternative options for less resourced practitioners.
- Part 3: Implementation:
  - "Self-assessment" and "Monitor for improvement" need clearer language.
  - Monitoring should be for learning and improvement
  - Address "gaming" attempts and ranking issues in continuous assessment.
  - Consider adaptability for different types of organizations.

Feedback organised into sections

Section	Feedback	Name of contributor
Introduction and overall conceptual framing	Conceptually, the open science monitoring also could include and explain concepts such as 'open data', evidence synthesis (and open methods of doing this), and a reference to 'open knowledge' and how and where the concept of science and knowledge systems overlap. For example, 'knowledge translation' into policy and practice (e.g. health services or environmental management). This is too important to relegate to a footnote about the official definition of open science from Unesco	Jack Nunn
Overall	It would be useful if the bulleted lists under Parts 1, 2 & 3 could be changed to enumerated lists, to facilitate referring to them.	Antony K Cooper
Introduction, 3rd paragraph	Referring to: "The scope of this document extends to all kinds of research outcomes and their impact on the scholarly ecosystem". Firstly, rather than extended, the scope is actually restricted to research outcomes and the scholarly ecosystem.	Antony K Cooper
Introduction	There should be a statement in the Introduction that because of the costs and complexities, including ethical issues such as privacy, most indicators are actually only surrogates for what should ideally be measured. This emphasizes why indicators should not be used for ranking.	Antony K Cooper

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Introduction, second paragraph	For "the principles outlined here are not tied to any specific monitoring service or particular software solution", possible solutions are not limited to software. Therefore, I suggest replacing "software solution" with "technical solution."	Pen-Yuan Hsing
Introduction, third paragraph	"sharing of clinical trial results" is too specific relative to the high-level principles in this document. It risks over-elevating medical research and alienating other fields of research. I suggest removing it.	Pen-Yuan Hsing
Introduction	The number 1, of the footnote, should be placed near "open science" (and not at the end of those sentence) We really want to state "The scope of this document extends to all kinds of research outcomes…"? Or: the scope of this document extends to several research outcomes…	Ilídio André Costa
Part 1: Relevance	A definition or explanation of indicators should be given, and an explanation of the process of who and how it is decided something is an 'indicator' - is it the presence or absence of certain kinds of data, or data about data (metadata) - or does it in some way involve a subjective assessment by an individual? The mechanism of deciding what is an indicator and how there is oversight needs explaining better. This is touched on in part 2 but needs explaining at the start.	Jack Nunn
Part 1: Relevance	Suggested inclusion of text between the double asterisk: "**Co-created**: as much as possible, the adoption of indicators should be based on active, voluntary participation from relevant stakeholders. Indicators should be co-created with research policymakers, research-performing organisations, research-funding organisations, funding agencies, ***the research community*	Jack Nunn

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	and the general public, using appropriate methods such as consultation and dialogue ** Stakeholders should have the agency to opt out of adopting indicators if they choose to do so"	
Part 1: Relevance, Inclusive	Economics, particularly access to funding for scholars, is a critical aspect of inclusivity, so a better wording might be: ● Inclusive: indicators should take into account the diversity of academic domains, economic and social contexts, and languages.	Antony K Cooper
Part 1: Relevance, Indicators toolboxes for different contexts	If stakeholders can select indicators as they choose, this encourages cherry-picking and reduces comparability and meaningfulness for public policy. There should be fixed sets of indicators for different needs and requirements, but this is obviously difficult to do and cannot be done before some experimenting to unearth unexpected consequences, etc.	Antony K Cooper
Part 1	Open science may be performed with and by actors outside traditional academia and research, such as community-based and community-led research projects. Overall, these actors lack importance in this section and must be considered more. ● **Meaningful for public policy**: indicators should be available and meaningful for all relevant stakeholders and practitioners of open science – not only for public policy and provide insights on the relevant open science practices in question. ● **Co-created vs. comparable vs. toolboxes for different contexts**: The need for co-creation and context adjusted indicators on the one hand, and comparable indicators on the other boils down to clarifying who	Gerid Hager

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	does the monitoring and whom/what for. To bridge this gap, comparable "mother indicators" or indicator themes/topics could be defined from which context dependent indicators can be developed. ● **Mature**: In addition to indicating maturity level of indicators, a Tier approach related to the complexity of indicators could be added to account for different levels of experience and resource availability in different open science performing initiatives. E.g., one indicator could be measured or approximated via three approaches which increase in the overall complexity of the measurement (Tier1-3). > Links to clarity about transparency of measurement quality (accuracy, coverage, timeliness etc.) in Part 2.	
Part 1: Relevance - Applicable and clear in scope	Give a sense of what you mean by "scope", such as the subject areas/disciplines that a particular indicator is relevant to. To that end, I suggest changing "and their scope should be clearly defined" to "and their scope should be clearly defined, such as relevant subject areas of research."	Pen-Yuan Hsing
Part 1	Inclusiveness is a broadly concept, that is not fully reflected on de explanation linked to that field on the document	Ilídio André Costa
Part 2: Transparency and reproducibility	Suggested rewording of point 1 to shift to involving the public: **Clear communication with the general public**: a clear communication of the conclusions drawn from the indicators, generated data and visualisations, is needed to ensure the general public understand and are involved in the process of open science monitoring.	Jack Nunn

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Part 2: Transparency and reproducibility	Suggest mentioning machine learning or making explicit reference to transparency on algorithms or code involved in analysis: " **Open-source software**: software used for data acquisition and processing should be open source, versioned and published with adequate documentation on a platform that facilitates collaboration and contribution, to foster open collaboration and reuse over the long term"	Jack Nunn
Part 2: Transparency and reproducibility	Before the bullet on communicating the conclusions to the general public, there should be a bullet on communicating the principles of open science monitoring and the indicators to the general public - especially those who intend making decisions based on the indicators and conclusions. Unfortunately, this is complicated because it needs a certain level of literacy (sorely lacking in politicians) to prevent misunderstandings.	Antony K Cooper
Part 2: Transparency and reproducibility, Inclusion of FAIR and CARE principles	This should be split into two bullets: ● Inclusion of FAIR principles: output data should be as much as possible compliant with the FAIR principles (Findable, Accessible, Interoperable, Reusable). ● Inclusion of CARE principles: collecting and analyzing the input data to create the indicators and the output data should be as much as possible compliant with the CARE principles (Collective Benefit, Authority to Control, Responsibility and Ethics). This is because FAIR deals with data but CARE also deals with processes.	Antony K Cooper

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Part 2: Transparency and reproducibility	Add management of sensitive information bullet point.There are best practice methods that allow for the discoverability of data but don't expose sensitive data. By sensitive data it can be anything that could compromise individuals, species, personal property or landholdings and that have some restriction over availability of the data. However, these considerations don't mean that metadata shouldn't be made publicly available to ensure best practice. There are examples of best practice interfaces that allow for this reporting e.g. https://www.rasd.org.au/	Erin Roger
Part 2: Transparency and reproducibility	Although CARE is mentioned- Indigenous data best practice principles (attribution/records/permissions) can sometimes be contrary to open access principles. It might be worth making this distinction clear in the Principles and that best practice isn't generalisable.	Erin Roger
Part 2: Transparency and reproducibility	'Open output data' should clearly make an emphasis on informed consent because this empowers data opening. No consent of research participants (citizens), no data to be open.	Loreta Tauginienė
Part 2	Overall, the points all seem relevant but lack certain feasibility considerations regarding all possible open science practitioners/stakeholders. E.g., not all initiatives implementing and monitoring open science practices may be able to offer APIs or bulk download features on a regular basis (see point "Reusable by design"), would be good to offer alternative options for open science practitioners with less resources, different skill sets and capabilities or access to relevant technologies.	Gerid Hager

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Part 2: Transparency and reproducibility - Open-source software	As emphasised in the UNESCO Recommendation on Open Science, both software **and** hardware are relevant here. Also "open source", without the "-", is a term that has been formally defined. Therefore, this point should be renamed as "Open source software and hardware". Additionally, rather than just for "data acquisition and processing", this point should be generalised to encompass the entire research lifecycle. Therefore, I suggest the first sentence should be changed to "software **and hardware used across the research lifecycle** should be open source, versioned and published…" (my suggested change in **bold**)	Pen-Yuan Hsing
Part 2	"General public" is a vague concept. "Communication for public": public is a well-documented concept… API - when we use an acronym for the first time, usually we must explain it.	Ilídio André Costa
Part 3	'Self-assessment' implies that principles will be implemented at least two levels, national and institutional, while 'Monitor for improvement' narrows it down (incentives are mostly possible at an institutional level). These are suggested to be consistent.	Loreta Tauginienė
Part 3	● **Self-assessment**: assessing the monitoring work based on the same principles (as suggested in the document) would, in theory, start an endless, reinforcing cycle of assessing the assessments, which is impossible. If the open science monitoring process itself should be reflected on by those implementing it, a clearer understanding, guidelines or examples of how this can be done, in a suitable way and without overstretching resources, would be desirable. ● **Monitor for improvement**: the formulation as is, does not fully capture the notion of empowerment. "Monitoring should be used to	Gerid Hager

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	incentivise rather than punish lack of practices" can still be interpreted that monitoring generates incentive/pressure to adopt OS principles/practices. Possible rephrasing: "Monitoring should be considered as part of the learning journey towards improving and fully adopting open science as a practice, rather than as a measure of (non-)performance or compliance with rules." ● **Continuous assessment of the monitoring initiative**: specific aspect of "gaming attempts" should be combined with ranking aspect (point below). Continuous assessment should address the framework/principles and indicators overall and be based on collaboration and reflections between relevant stakeholders, based on co-evaluation (with specific aims, processes/rules tbd). ● **Adaptable**: this point should be included under Part 1 (Relevance), possibly merged with "Up-to-date indicators", i.e., to keep indicators relevant and adapted to needs/requirements that evolve over time (staying meaningful). ● **Avoid rankings:** this point is closely related to the gaming aspect, suggest to combine into one point "Avoid implementation for rankings or gaming attempts". Also, continuous assessment of monitoring initiative should be more overarching. The indicator framework should be flexible enough to be adapted by different types of organisations and initiatives representing different stakeholder groups and resource availability to support the monitoring. I.e., also small-scale and community-based, resource poor initiatives should have options for open science monitoring which can be based on the principles and suitably integrated.	
Part 3	CoARA (Coalition for Advancing Research Assessment) - idem	Ilídio André Costa

Contributors

Further information about contributors, and the tasks they did is available in the STARDIT report:
https://stardit.wikimedia.org.au/wiki/0202410300001

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