Research insight on RRI indicators that reflect the practice of public engagement organisations

Key findings

· Existing RRI indicators currently do not match the practices of public engagement practitioners

· RRI for monitoring and evaluation is mainly used to satisfy requirements from funding organisations and therefore becomes a burden for public engagement organisations

· RRI can function as a useful framework for organisational development when paired with reflective conversations and documentation of key lessons learnt

Large-scale initiatives such as the *UN's Citizen Science Global Partnership* to meet **Sustainability Development Goals** demonstrate a heightened policy interest in engaging society. At the European Commission (EC) this interest is exemplified by the strategic orientations of the **Science with and for Society (SwafS) work programme 2018-2020**, which include "Exploring and supporting citizen science". Citizen science denotes the many ways that the public is engaged in science: from crowdsourcing, obtaining data from a large number of people via the Internet, to truly collaborative science, involving people in problem definition, data collection and analysis in a project. At the heart of this policy interest is a strong focus on Responsible Research and Innovation (RRI), a process that allows "all societal actors (researchers, citizens, policy makers, business, third sector organisations etc.) to work together during the whole research and innovation process to better align both the process and its outcomes with the values, needs and expectations of European society".[1] In line with this, the EC envisions citizen science as a public engagement (PE) activity to promote RRI. Yet, limited attention is given to the individuals and organisations that promote and make PE happen – in particular, those who are not part of research institutes.

The challenges of RRI indicators for public engagement organisations

One of the aims of the "Doing It Together science" (DITOs) project is to promote wider and deeper public participation in science, by organising events along an '**escalator model**' that allows people to enter at a level of engagement that matches their needs, interests, and abilities, while also encouraging them to move beyond. We also aim to guide **funding agencies** to set up schemes that acknowledge different levels of engagement and the impact that they have. As part of this we have developed an evaluation framework based on the PLACES[2] and RRI toolkits, and the EC report on RRI criteria and indicators.[3] We identified four salient challenges: 1) Current RRI frameworks and their PE indicators have been mostly **targeted at institutions** that carry out or promote research and technology development; 2) There are numerous other organisations developing and carrying out PE initiatives but, as the RRI toolkit notes, these **Civil Society Organisations (CSOs) are underrepresented** in Research and Innovation (R&I) committees.; 3) RRI frameworks are used by funders and evaluators to assess compliance with RRI. This becomes problematic when Key Performance Indicators become target numbers for evaluators rather than guidelines that support organisational learning and management. Hence, monitoring and evaluation becomes a burden for CSOs.; and 4) Evaluation and RRI frameworks have limited focus on organisational capacity and almost no focus on the personal development and contributions of individual facilitators of PE.

Revised RRI indicators that reflect the practice of public engagement organisations

Why revise existing RRI indicators? As noted by Rask et al., (2016)[4] "defining what success is, and how it can be measured, are completely separate tasks from explaining what leads to success or limits its achievement". The formative evaluation in DITOs focuses on the latter. We conducted ten thorough one-on-one conversational interviews with event facilitators, which resulted in a set of revised RRI indicator descriptions with depth that are meaningful and relevant and that reflect the actual practices of partner organisations. These are covered in *DITOs deliverable D5.2 Phase 2 project evaluation*.[5] Here a small sample of the insights from these reflections and revisions.

Public engagement

- Discussing the indicator **commitments by institutions & organisations to PE** reveals the constraints that these commitments have on organisations' practice (e.g. how funds are used, what topics are given priority, how responsibility is framed, etc.) and the ways these are shaped by local political environments and social contexts, which in turn means that "having commitments at the policy level has limited weight if there is little societal support or value for it".

- Exploration of **number, type, & purpose of initiatives** reveals the need to recognise that 'purpose' is about being honest and open about facilitator/organisational stance and intention and how these link to audiences' expectations e.g. PE tackling taboo subjects rather than popular topics that may attract more audiences. It also highlights the importance of providing multiple avenues for engagement and the role of collaborations to build capacity beyond a single organisation.

- **Number of facilitators** helps to explore the role of facilitators as part of the core organisational infrastructure. It also explores considerations for resources available for capacity development and taking stock of 'behind the scenes' and taken-for-granted tasks. It is well known that focusing on numbers and 'increased PE' pushes organisational capacity, creates loss of focus and can also lead to burnout.

> **Commitment by facilitators – their efforts, focus, and the impact they have – should not be taken for granted."**

- The indicator **number of visitors / participants at activities** needs depth of information so that facilitators can benefit from the data. Exploring this indicator reveals a tacit/attuned skill that facilitators use to 'capture' the complex interactions, depth of engagement, and expectations of visitors rather than merely tracking numbers.

- **The indicator number and types of skills developed by participants & facilitators** (which include soft and hard skills as well as tacit knowledge gained from practice) reveals the great need for the creation of spaces for facilitators to share and discuss issues, ideas, and concerns with the rest of the team during working hours.

- **Costs of increased organisational capacity** opened up conversations about sustainability; it was revealed that this indicator requires considerations for external factors such as government funding and public valuing (e.g. underfunding of sector); internal factors such as retaining talent, return on investment, the need to build value of the activities and the skills provided and general considerations for exclusion because of financial limitations.

Gender equality

This criterion has two subdimensions: promoting the equal participation of men and women in Research and Innovation (R&I) and inclusion of gender perspectives in science & technology content. Strand et al., (2015)[3] recommend that the focus for this criterion should be on processes of institutional change to see whether general ambitions for equality and inclusion are translated into concrete forms of action.

> **Issues arise from treating 'gender equality' as separate from other criteria; they are not independent from each other and singling out gender (or any other difference) can exacerbate it."**

As DITOs evaluators and partners we recommend that indicators should include looking at external relations and collaborations as these influence practice, approaches, and strategies to address gender equality. Gender equality issues and the strategies to address them need to be looked at in terms of social and historical contexts of the organisations' region/country. Issues arise from treating 'gender equality' as separate from other criteria with the risk that singling out gender (or any other difference) can exacerbate it. Another issue is that by trying to abide by percentage of women dictated by frameworks, other issues/opportunities might be pushed to the side? **Number and type of events discussing gender** as an indicator includes events specifically designed to have a dedicated space to discuss gender issues and opportunities. The indicator includes considerations for how to introduce or open up sensitive subjects with tact but impact. For example, partners who promote action-based approaches find that there is more impact when something practical/material is produced during the activity. In Medialab Prado *"we have activities promoting women in science, Wikitons, getting together to add or edit women scientists' biographies; it is direct action rather than just having discussions. Sometimes just discussing doesn't get you very far. It should be about doing something – research and edit, or make – to contribute directly to change"*.

Reflections on this criterion, as with PE above, highlighted that the skills of facilitators in knowing their audiences should not be taken for granted. Counting **number of women** says little about gender equality as a partner notes *"it doesn't reflect the depth of your engagement"*. Quantitative data needs to be complemented by qualitative data that sheds light on depth of women's experiences. Through this indicator recognition can be given to the various strategies created by organisations to address gender inequality, for example, approaches that focus on confidence building to empower women.

Science learning

The 2 dimensions of this criterion are organisational scientific capacity and scientific capacity of the public. Although there is an overlap between science learning and capacity building in PE (above), the latter is focused on planning and delivery of events, whereas the former is focused on providing participants, facilitators, and organisations with the capacity to engage in science

and technology. The indicator **skills gained** focuses on participants and their expected and unexpected learning outcomes, but to be useful it requires disambiguation. For example, the indicator's multiple dimensions and manifestations include a) know-how of scientific process ; b) knowledge and understanding of relevance of science and scientific process in other aspects of life, c) appreciation of the value of science and the scientific processes in connection with the contemporary world, d) appreciation and respect for what a scientist is and what their work entails, e) curiosity about and respect for the environment, and f) physical representations of skills e.g. in building prototypes. For partners the indicator **level of ownership over science learning** seeks to understand if participants/facilitators feel they have gained skills and if they feel that these skills are relevant and replicable. It also seeks to understand if in the long run they feel they have gained (local) expertise so they can engage with scientific experts, participate in the decisions about their local environment, etc. Partners note that there is a need to look at what promotes ownership and its manifestation. This requires looking at the 'depth' of ownership including ownership as mutual

> **"** *The passion and enthusiasm of facilitators is as important as their skills and scientific competency."*

learning, as personal development, as humility and understanding gained, as governance, as commitment, as community, and ownership as meaning and relevance, including *"joy for what you do and meaningfulness of work"*.

Social inclusion

Problems arise when the focus is on achieving target number on 'inclusion' (e.g. the percentage of participants from disadvantaged groups). Practitioners are aware of conditions that promote accessibility and the importance of taking activities to external locations to increase reach. For them, it is about what and who make the

> **"** *Social inclusion should be at the centre of event design because it helps to define the purpose of the activity and then you can draw from existing organisations or frameworks as a starting point."*

activities accessible, organisationally and methodologically so that a strategy for inclusion that builds organisational memory can take shape. Reflections on this criterion's various indicators reveals that they are not useful as static measures. For example, the indicator **percentage of activities purposefully modified to address issues of social justice and inclusion** does not make sense because over time, as an organisation gains experience, less modifications are needed. Also, to facilitate exchange of good practices and techniques, social justice and social inclusion need to be discussed and defined collectively by project partners on a continuous basis. A collective understanding of what the shared consortium values are and where the project is going. **Percentage of activities that may have unintended negative effects on social justice** as indicator needs depth and a definition of 'negative effects'. For example, in some cases, to build safe spaces and create inclusivity,

some exclusions is needed such as *"events are tailored for specific audiences [e.g. people affected by cancer]; they're closed events, and therefore exclusive"*. An issue with this indicator is that negative effects cannot be known until after the fact. In addition, organisations need to experiment and try out different approaches, which initially might have negative impacts. Examples of strategies for social inclusion developed by partners include: Mobile events e.g. through traveling exhibitions such as the Royal Belgian Institute of Natural Science's XperiLab truck; having issues of social inclusion as an event theme, which enables *"talking in terms of social issues, trends, or taken-for-granted practices";* and the creation of reflective spaces to explore hidden instances of exclusion done e.g. through discussions during or at the end of an event.

> **Recommendations**
> - An RRI framework that supports organisational development and reflective practice to strengthen organisational learning and management of CSOs
> - Evaluation frameworks for organisational capacity building developed through iterative exploration of needs and practices
> - Creation of dedicated spaces for conversation and systematic documentation for the identification, analysis, and use of high quality (empirically supported and triangulated) lessons learned

Criteria	Dimensions of criteria	Performance indicators		Perception indicators
		Process indicators	Outcome indicators	
Public engagement	Policies, regulations & frameworks	Commitments by institutions & organisations to PE	Changes in agendas / organisational practices as a result from PE	Public interest on impact of science & technology Public expectations of engagement in decision-making processes
	Science initiatives & events	Number, type, & purpose of Initiatives	Number of visitors / participants at activities Types of visitors / participants Social media coverage	Perceived 'level' of participation/contribution Attitude toward facilitator & organisation
	Capacity building	Number of facilitators / science communicators Current experience & training opportunities for facilitators	Number of collaborations & types Number & type of participant-initiated/led activities Number & types of skills developed by participants & facilitators Costs of (increased) organisational capacity	Understanding of science & technology Attitude towards science & technology Participants' attitude towards their own abilities
Gender equality	Equal participation of males and females	Gender equality commitments / frameworks	Percentage of women attending events Percentage of women in Advisory Boards Percentage of women facilitators & collaborators	General perception of gender equality issues in science & technology Perception of opportunities for women in science Perception/awareness of gender equality efforts / initiatives in science & technology Perception/awareness of gender equality issues in science & technology relevant to their own lives
	Inclusion of gender perspectives in science & technology content	Number & type of events discussing gender dimension in science & technology	Percentage of women initiating/ leading citizen initiatives Percentage of women sharing feedback	
Science learning	Organisational scientific capacity	Capacity building initiatives at the organisational level	Methods for science learning at the organisation level	Level of ownership over science learning Level of creativity in science activities
	Scientific capacity of the public	Strategies for science-learning outcomes at events	Skills gained	
Social inclusion	N/A	Considerations/strategies for: a) addressing access issues from disadvantaged social groups; b) ethical issues and values in the design, development and implementation of activities; c) benefits from activities; d) design of communication and outreach strategies Number of stakeholders who actively review/show interest in research results that have an impact on social justice	Percentage of activities: a) delivered in accessible locations; b) modified to address issues of social justice and inclusion; c) that may have unintended negative effects on social justice The percentage of participants attending events from disadvantaged groups	Level of importance given to social justice/inclusion Level of organisational importance & commitment given to development of methodology & implementation of social justice/inclusion strategies Public belief on the positive & negative impact of activities

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