Co-Constructing an Open and Collaborative Manifesto to Reclaim the Open Science Narrative

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Abstract. The OCSDNet Manifesto is a result of one year of participatory consultations and debates amongst members of the 'Open and Collaborative Science in Development Network' (OCSDNet), a network of 12 research-practitioner teams from Latin America, Africa, the Middle East and Asia. Through research projects grounded in diverse regions and disciplines, OCSDNet members explore the scope of Open Science as a transformative tool for development thinking and practice and offer the 'Open and Collaborative Science Manifesto' as a foundation upon which to reclaim the mainstream narrative about what Open Science means and how it can realise a more inclusive science in development. This paper describes the mechanisms used for collaboration and consensus building, and explores the ways in which the process of building this document serves as a case study for the opportunities and limitations of integrating collaboration, opportunities for participation and openness into research activities.

Keywords. Open science, inclusive science, right to research, cognitive justice, collaboration

1. Introduction

This paper describes the process by which the OCSDNet arrived at the Open and Collaborative Science Manifesto and the opportunities and limitations of integrating openness, collaboration and opportunities into network research activities. The Open and Collaborative Science in Development Network (OCSDNet) is composed of twelve researcher-practitioner teams from the Global South interested in understanding the role of openness and collaboration in science as a transformative tool for development thinking and practice. Research teams are supported by a team of four external advisors and a network Coordination Team. The project is funded by the International Development Research Centre (IDRC) in Canada and the Department for International Development (DFID) in the UK. Throughout this paper we will make a distinction between the OCSDNet coordination team and the 12 research teams of sub-grantees selected to conduct research and implement projects in their respective countries and regions. The OCSDNet coordination team is comprised of the Principal

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Investigator Leslie Chan, and four research associates: two associates from Latin America based in Toronto, an associate from Canada based in South Africa, and an associate from US based in Kenya. The coordination team, on top of managing the network, is also in charge of collecting data, reporting and consolidating findings, and as such, is also a 'research team'. The term has been left out as to avoid confusion between this group and the sub-grantees.

The development of the OCSDNet Manifesto is a response to the lack of transformative and critical approaches to Open Science in the global scientific and development community. Most mainstream narratives about Open Science, emerging particularly from Europe and North America, envision open science as a system of technology-driven tools and processes [1] [2] [3] that, when utilised, are assumed to accelerate scientific discoveries, improve transparency and reproducibility of research, increase research uptake, and improve accountability to the scientific community as well as to the public [4] [5] [6]. While we recognize a great deal of progress has been made through technology-enabled collaboration, we also note that the established voices in the Open Science community have failed to address how the current approach to "open" exacerbates and amplifies disparities in knowledge production and circulation [7] [8] [9] [10] [11].

OCSDNet imagines open science in a different way. We envision Open Science as an intrinsically inclusive and collaborative practice that is constantly striving to be reflective about power and privilege within structures of knowledge creation. With this in mind, the 'Open and Collaborative Science Manifesto' invited network members to collectively question and discuss the knowledge ecosystem in their contexts – asking to whom does knowledge belong?; are benefits of science disproportionately concentrated to some privileged groups over others?; who gets to participate in knowledge production processes?; and in what ways can technology be used to increase the agency of more people over scientific knowledge production?. We recognize that these questions have not been adequately raised and debated in conversations about Open Science or deliberated at the intersections of Open Science and Development [11] [12].

Using these questions as a starting point, the Manifesto has evolved to emcompass seven common principles as seen in Figure 1. The seven principles arrived at by the network pose that Open and Collaborative Science in Development: 1) enables a **knowledge commons** where every individual has the means to decide how their knowledge is *governed and managed* to address their needs; 2) recognizes **cognitive justice** and the need for *diverse* understandings of knowledge making to co-exist in scientific production; 3) practices **situated openness** by addressing the ways in which *context, power* and *inequality* condition scientific research**;** 4) advocates for every individual's **right to research** and enables different forms of *participation* at all stages of the research process; 5) fosters **equitable collaboration** between scientists and social actors and cultivates *co-creation* and social innovation in society; 6) incentivizes **inclusive infrastructures** that empower people of *all abilities* to make, and use accessible open-source technologies and; 7) uses knowledge as a pathway to **sustainable development,** equipping every individual to improve the *well-being* of our society and planet.
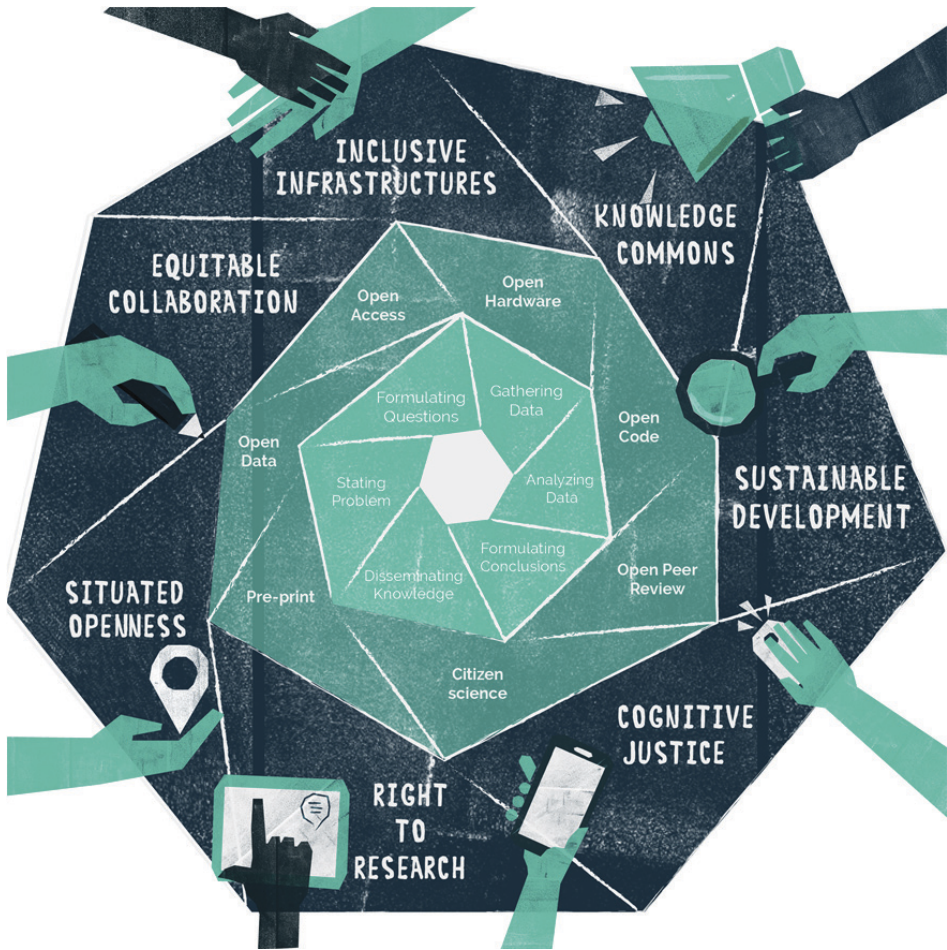
Figure 1. OCSDNet Manifesto Infographic

2. Co-Constructing a Manifesto

The idea of constructing a Manifesto was born in May 2015, after several members of the network met in Singapore to present at the ICTD Conference and realized the network needed to produce a document that outlined our position in the Open Science debate, calling for a more inclusive, collaborative and just approach to knowledge production. While network members came from different disciplinary, cultural and ethnolinguistic backgrounds, we shared the notion that the story about Open Science needed to be reclaimed and refocused – from the technocentric rhetoric dominating the debate, back to the values and a vision for a world that Open movements propose.

From June 2015 onwards, the OCSDNet coordination team conducted a series of participatory, collaborative and horizontal consultative mechanisms, which took place over the course of one year to tap into the synergies and divergences in our vision for Open Science. These included formal project reports and position papers, as well as

more informal group calls, workshops and collaborative editing sessions in which network participants shared and debated their views about what Open Science means for them and their communities. The coordination team specifically looked for common keywords, themes, and ideas that encapsulated the principles and processes guiding the research practice of the 12 research teams. In addition, we also carried out feedback sessions to improve the content of our document and to develop a tone, language and dissemination format that reflects the inclusive and collaborative spirit of the scientific model it proposed. The result was an optimistic, reflective and critical Manifesto that we hope promotes conversation in the scientific community and beyond, about the rationales we use to advocate for and propose a redefinition of Open Science.

It is important to acknowledge that the process of consultation and the production of this Manifesto was informed by the many scholarly traditions that have historically challenged the hegemony of positivism and a market-driven scholarly communication system. As such, the principles comprising the Manifesto are not new and have been central to fields such as critical theory, postcolonial, feminist and indigenous epistemologies among others (Figure 2). As part of our process, we gathered these various ideas and documented the ways in which they informed the principles of the Manifesto in a collaborative annotated bibliography and reading list.[2] Through this open resource, we aim to pay homage to the work of these authors, but also to further make visible the intersections between Open Science and the many streams of social justice scholarship. We also hope that its users will continue to make suggestions and contribute to it as the understanding of Open Science and the field continues to expand.
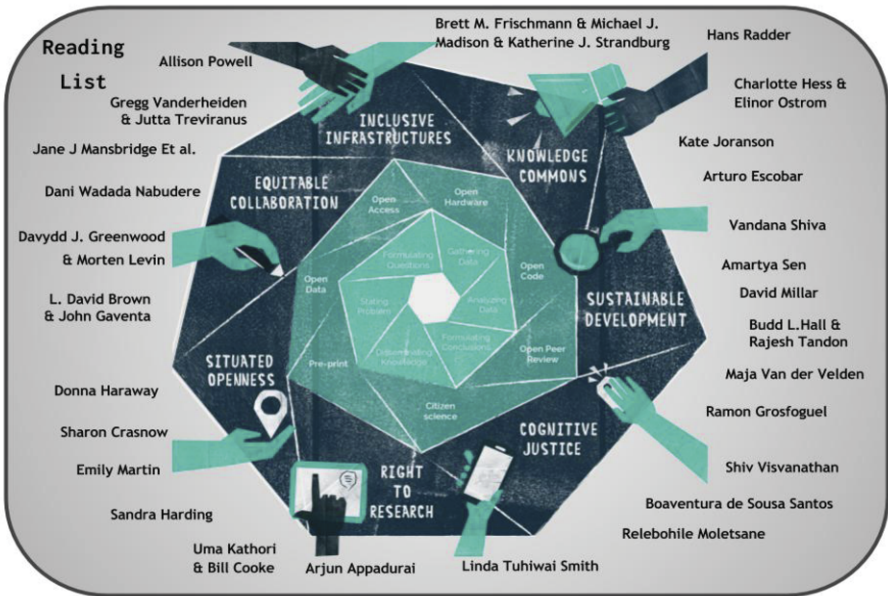

Figure 2. OCSDnet Manifesto Principles and Reading List of Key Authors

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[2] The annotated bibliography and collaborative reading list is <u>available here</u>.

Finally, to increase the impact and reach of the Manifesto, it has been translated into several languages (French, Spanish and Afrikaans thus far) and multi-modal formats that invite diverse audiences to join the conversation including an online visual infographic, a 3-minute animated video, posters and pamphlets, blog posts, an open syllabus/reading list, among others, in collaboration with the Cooperativa de Diseno from Buenos Aires, to be posted on the OCSDNet website. Through these efforts, we aim to measure the impact and influence this document can have in sparking conversations about Open Science in local and global scientific communities.

3. Manifesto as a Methodology

While the participatory nature of the Manifesto was an extremely valuable data collection activity (as explained in 3.1.), it allowed us to do much more. The Manifesto became an overarching methodology in our practice – a system of methods that enabled us to constantly pay attention, monitor, and evaluate the myriad of research practices, working styles, interactions, relationships and power dynamics that are taking place across the network. More specifically, it allowed us to address the four pillars driving our research:

3.1. Learning Analysis

Firstly, the Manifesto was a tool to gain a deeper understanding of the values, findings and lessons that drive the thinking and practice of the network. We asked "what have we learned through network case studies about what is required for open and collaborative science in development?". Through participatory consultations, the 12 research teams collectively brainstormed, discussed and synthesized the contextual conditions, practices and normative values required to facilitate openness and collaboration in science as per the experience of the communities with whom they were working. This data was consolidated into the seven principles outlined in the Manifesto, producing a document that tells the story of Open Science from a situated point of view, informed by the diverse cultures, disciplines and identities that make up their practice.

The dialogue facilitated questions such as "what principles should be included in the Manifesto?", or "indicate if you agree or do not agree with the following principles". These questions created the conditions conducive for productive debate regarding the assumptions we were making around each principle, and the extent to which they reflected the contextualized nature of their practice. For example, mid-way through the process, the second principle read "scientific knowledge and infrastructure should be open, accessible and freely available to all". This statement generated discussion particularly between groups who defended open hardware and DIY technologies in citizen science practices. They tended to advocate for a type of openness that empowered the general public to take ownership of the technologies and knowledge(s) that affect them: "We want 'truly open' to be something more diverse; more dynamic, involving new actors and groups". Meanwhile, the team from South Africa, working closely with indigenous communities who have historically been marginalized and dispossessed in large part due to policies of openness, eloquently argued that we needed to work towards a language that demonstrates a more situated approach to openness that takes histories, power and inequality into account.

Ultimately the second principle evolved into what today is principle 3, abandoning overarching generalizations about openness as being positive and beneficial for all communities and arriving at a more nuanced and self-aware approach that extended to the rest of the concepts. The network's use of the concept 'open' evolved from a debate about the state of open vs. closed, towards a conceptualization that is embedded in the socio-political dimensions of knowledge. We also began to acknowledge the risks of open knowledge sharing, while aiming to redistribute opportunities to overcome barriers impeding participation in scientific research. Reflections around our use of language to explore contextualized openness also led to a decisive turning point in our objectives in which we set out to question the power of discourse and narratives of Open Science as a first step in questioning the norms, attitudes, behaviours, practices and ultimately policies that exacerbate and amplify disparities in knowledge production.

3.2. Network Building

Drafting a common vision also means consensus has to be reached via dialogue and debate. As posed by our second research question: "what have we learned about the tools, research processes, styles of governance and leadership required to drive a network on open and collaborative science in development?", we are also interested in the infrastructure required to support a network; particularly one that is working towards generating knowledge and experiences aimed at informing their collective understanding of Open and Collaborative Science.

As a result, our process of building and consolidating the OCSDNet network has required constant and iterative reflection on the ways in which a networked and distributed social and technical infrastructure facilitates knowledge exchange, collaboration and equitable governance. In this respect, the Manifesto, as a consultation process and an exercise in collaboration, gave network members and the coordination team the opportunity to interact with one another, have difficult conversations and in doing so, get to know the interests, motivations and thought process driving the work of their peers.

This was also the case for the process of 'knowledge translation', which required several iterations and rounds of discussions between the graphic designers and the OCSDNet coordination team, to make sure the designers capture the nuances and the contextual nature of the concepts presented in the Manifesto into a graphic form. For example, the first graphic proposals were more techno-centric, given how the graphic design team thought about science, and evolved into graphics that conveyed the more community-led and participatory nature of a more open and collaborative science. (See Figure 3).
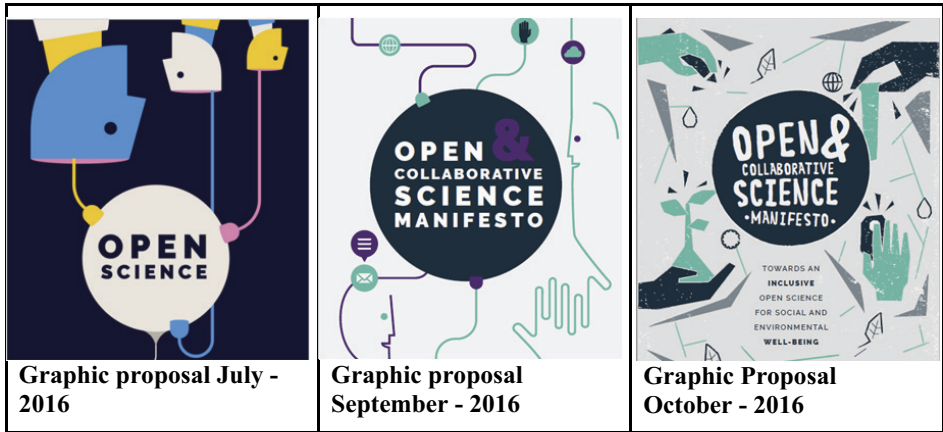
| Graphic proposal July - 2016 | Graphic proposal September - 2016 | Graphic Proposal October - 2016 |

Figure 3. Evolution of OCSDnet Manifesto Graphic identity as visualized by Design Cooperative

The experience of conducting a consultation was also instrumental for our understanding of the nature of transnational collaborative working. As a general observation, the method allowed us to redistribute the narrative power in terms of defining the story we would tell as a collective, from the central OCSDNet coordination team to the network members who are implementing the projects on the ground and thus have a deeper understanding of the different layers of openness. However, the participatory nature of the consultation did not include everyone to the same degree, and failed to break down many of the barriers for participation present in the network, such as language and cultural barriers, lack of incentives to share and the various levels of power and influence between members situated in different institutional contexts.

Mitigating these challenges required a considerable and unanticipated amount of involvement and facilitation from the coordination team. The OCSDNet coordination team attempted to minimize interference in content creation, but rather focused on designing consultation methods that maximized the participation of network members and created opportunities to accommodate those who were not as "loud" or active in the activities. This included creating ample opportunities for participation, via one-on-one interviews, e-mail, conference calls and collaborative writing, so as to bypass these barriers and ensure that most members had the chance to contribute to the final document, including those who expressed some discomfort during offline and public consultations. This experience highlighted that collaboration cannot always be institutionalized or systematized, as networks still rely on organic community building.

In spite of these efforts, participation in the process was not always welcomed nor perceived as positive, and was rather received with mixed responses by some members of the network. In some cases, participants acknowledged that the consultation was taking place but did not fully participate in the process, unless it was part of a mandatory report or as a result of a one-on-one request from the coordination team. Other participants often did not feel compelled to think normatively about Open Science nor did they see how such a document could advance the objectives of their projects. However, the case for most members was active participation in offline and

online consultations, going beyond the brainstorming stage, and taking ownership of the editing process and working closely with one another to refine the direction of the final product.

3.3. Field Building

The third question and pillar driving our research looked at the extent to which we are contributing to the creation and expansion of the OCS in Development field. Field building, as defined by Lynn's work on advocacy and evaluation [13], involves a) defining a common advocacy goal, b) sharing the values driving these advocacy efforts, c) and using a language that expresses these goals and values, as well as inspiring collective action. As the nature of a Manifesto suggests, the principles are a public declaration and articulation of the values driving the thinking and practice of our network. Producing such a document allows us to collectively contribute to the field of Open and Collaborative science as it develops, evolves, interacts with related fields exploring openness (such as Open Access, Open Data, Open Education, etc.), and responds to emerging critiques. However, it is important to note that our network has intentionally positioned itself and its research at the intersections of Open Science and Development scholarship as well, which thus far remains largely under-researched. In doing so, we are attempting to build and contribute to a new field of study and practice.

However to get there, as noted by Lynn [13], on top of a common vision and a collective, field building also involves *action* and developing common strategies to advance the group's objectives into decision-making, agenda-setting, and change-making at different levels. Under this definition, the process of building the Manifesto was an instrumental process in developing and negotiating a common language and vocabulary. Yet as a document, it has not yet proven its potential to be a useful advocacy tool to challenge the narrative around Open Science. Through the dissemination of the final product, we would like to continue raising questions of influence and power with audiences beyond our network, questioning *who has the power when important decisions are being made*, and probing how we can use this tool to actively and strategically engage other actors in advocacy around Open Science in Development. We intend for the document to ultimately provide an initial roadmap on how to collectively realize a more open and collaborative science, while considering that the steps to realize this vision will also need to be contextualized and situated within their contexts and realities.

3.4. Reflective and Adaptive Learning

Finally, the Manifesto was a key activity for reflection and iterative learning – providing us with evidence to answer the fourth and final question driving our research: "to what extent have we effectively engaged the sub-projects throughout the learning process to promote a culture of reflexive and adaptive learning in the network?". While other data collection activities such as the collection of monthly reports or reflection papers enabled us to interact with the project teams on a regular basis, the Manifesto was one of the most consistent spaces for dialogue, debate and exchange between network members, allowing us to receive feedback from network members to help us improve and adapt the ways in which we were driving the consultation.

While the coordination team attempted to negotiate or mediate some of the conflicts, the exercise also brought to light some of the Global North-South power

dynamics embedded in collaborative network relations. Even though the Manifesto is very critical about the dominance of 'western' science, in some instances, researchers from North American institutions dominated the conversation and thus, drafted a significant bulk of the content of the Manifesto. One of the core challenges in negotiating this dilemma was bypassing the language barriers. For example, members from the West African team who speak French and members from the Kyrgyz team who speak Russian were considerably less active in their contributions. This was a lesson for the coordination team to account for the implications of ethnolinguistic and cultural barriers in the way we structure participatory collaborative exercises, and iteratively adjust our mechanisms to emerging dynamics.

In this respect, the Manifesto activity also provided the space and opportunity for collective and self-reflection, proving to be a tool that creates checks and balances to mitigate imbalances between the coordination team and the network participants. At one stage of the consultation process, a project team from the Middle East constructively suggested that the coordination team was overemphasizing its critique of Open Science as a practice that reproduces and amplifies inequalities in the draft, while not paying enough attention to other understandings and perceptions present in the network. As articulated by one of the project leads from Lebanon during the Bangkok network meeting:

"Constantly emphasizing inequalities in power relations, implies that one side is less powerful. And we are not. We *are* powerful. We are practicing a new, better model of science."

Since the coordination team is affiliated with a North American university and has the most direct access to resources and funding, our dominance over the narrative becomes problematic in a context where we are fostering and exploring more horizontal and collaborative approaches to knowledge making. The Manifesto was a process that allowed us to collectively work on the tone, language and arguments used by OCSDNet to build a narrative of Open Science that represents a majority who were involved in the process.

4. Next Steps

Moving forward, OCSDNet has produced a Monitoring and Evaluation framework to track the impact and uptake of the Manifesto, by strategically identifying the actors we would like to engage in discussion, and the different ways in which we could introduce this conversation in diverse regions, fields and areas of work. This strategy has been designed by identifying different types of audiences at the community, institutional and policy level, identified through a network-wide mapping exercise, and a gradient of outcomes in relation to three levels of possible effects of interacting with the Manifesto (See Figure 4)
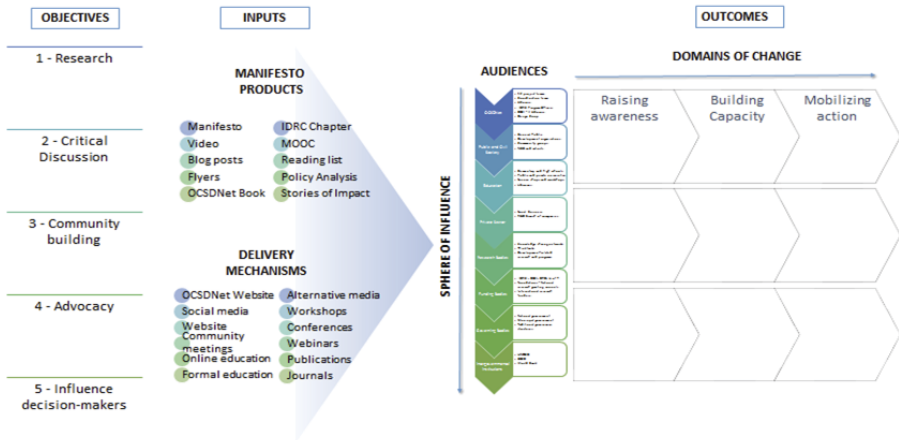
Figure 4. Outline of Monitoring and Evaluation framework for dissemination of Manifesto

At an initial level we *expect* to see how ideas and concepts introduced in the manifesto are generally recognized, remembered and understood. At an intermediate level we would *like* to see if there is growing public support for the Manifesto and increased capacity of key actors to mobilize and advocate for an inclusive open science in their context. Finally, at an ultimate level, we would *love* to see how specific actions, programs and practices are designed to realize the vision raised by the Manifesto. As part of methodology, we have also recognized the need to undertake a discourse analysis of the Open Science field as one of the ways through which to strengthen our argument regarding the need to reclaim the Open Science narrative, as well as to better understand the impact that a collaborative manifesto and its nuanced take on language, can have on reshaping the mainstream discourse.

5. Conclusion

Through the process of constructing this Manifesto, we aimed to amplify a narrative of what Open Science can mean for development, the language we use to discuss it, and the core reasons why we are advocating for it. In the process, we achieved a series of objectives that align with our theory of change as a research network. First, we consolidated the core values that ground our thinking and practice as a network and were able to articulate a shared understanding of what a more inclusive take on Open Science can offer to scientific research and development. The processes of Open Science take place in a wide array of contexts by diverse individuals who face and negotiate a unique set of barriers, challenges, and opportunities in their regions, and this Manifesto was designed and constructed to capture these experiences. Second, we were able to develop a common language among the OCSDNet community to discuss openness, collaboration and development, and include concepts that are relevant and appropriate across multiple contexts and perspectives. Third, we created an output that

allows us to introduce a reflexive and critical framework into global and local conversations about Open Science that recognizes the role of power relations in knowledge production, which we hope, will ignite future debate and discussions; and finally, we produced an accessible advocacy tool to disseminate and communicate OCSDNet's vision to relevant and diverse audiences, including policy-makers, scholars, educators and the general public, in multiple languages and formats.

At a more meta level, we hope the Manifesto, both as an output and consultation process, ultimately mirrors the opportunities and challenges of embodying the principles it communicates. As a document, we desire for the Manifesto to stand as an invitation and tool to initiate a broader conversation in the Open Science community about the way in which these structural inequalities continue to shape global scientific knowledge production; and as a process, to offer a roadmap and a case study on what happens when you integrate openness, collaboration and opportunities of participation into various research processes. In the case of our network, doing so gave us tremendous hope in terms of the importance and feasibility of introducing a value-based framework into collaborative research processes. However, the process of co-creating a collective document also showed us that even amongst researchers who align with a more inclusive and equitable scientific practices, collaboration still requires constant reflection, brokering and facilitation. This allowed us to stay creative in terms of the mechanisms we set in place to foster openness, collaboration and participation between members, but more importantly to remain critical of their limitations, particularly in terms of the type of 'participation' we were able to enable.

We remain aware that the vision articulated in this document is just a snapshot of the current thinking and state of the debates of our network. The principles put forth are by no means sufficient or conclusive, and the reclaiming and reshaping of the Open Science narrative needs to be an ongoing process. We view this product and process as non-static and expect it to evolve as each team furthers their experience and understanding of openness and collaboration. On the same account, the monitoring and evaluation strategy will also allow us to continue reflecting on how our identity as a network and our willingness to collaborate with one another changes after this phase of the research is over. Can a document and a participatory consultation such as a Manifesto bind us as a collective and set a foundation for future partnerships and collaborations? Will actors take ownership of the product and continue to disseminate this vision among their networks? Or will it reveal we are far from consolidating a common agenda around a more inclusive Open Science? Either way, this is only an initial step of a larger effort to better understand the development implications and outcomes of co-constructing and diversifying the narratives and arguments for an open and collaborative science.

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