

Giovanni Cerulli
Emanuela Reale *Editors*

Research Infrastructures for Open Science in Social Science Research

Lessons from the FOSSR Case

OPEN ACCESS

 Springer

Research Infrastructures for Open Science in Social Science Research

Giovanni Cerulli • Emanuela Reale
Editors

Research Infrastructures for Open Science in Social Science Research

Lessons from the FOSSR Case

 Springer

Editors

Giovanni Cerulli 
CNR-IRCrES
Roma, Italy

Emanuela Reale 
CNR-IRCrES
Rome, Italy



ISBN 978-3-032-29574-3

ISBN 978-3-032-29575-0 (eBook)

<https://doi.org/10.1007/978-3-032-29575-0>

© The Editor(s) (if applicable) and The Author(s) 2026. This book is an open access publication.

Open Access This book is licensed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits any noncommercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if you modified the licensed material. You do not have permission under this license to share adapted material derived from this book or parts of it.

The images or other third party material in this book are included in the book's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the book's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

This work is subject to copyright. All commercial rights are reserved by the author(s), whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed. Regarding these commercial rights a non-exclusive license has been granted to the publisher.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, expressed or implied, with respect to the material contained herein or for any errors or omissions that may have been made. The publisher remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

This Springer imprint is published by the registered company Springer Nature Switzerland AG
The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

If disposing of this product, please recycle the paper.

Chapter 15

Communication, Engagement and Community Building: Enabling the Use of Research Infrastructures



Serena Fabrizio , Rita Giuffredi , Erica Rizziato ,
Alessandra Maria Stilo , Elisa Storace , and Valentina Tudisca

15.1 Introduction

In today's Open Science landscape, the way research is shared through open Research Infrastructures (RIs) and made accessible to the public is evolving beyond traditional dissemination practices. This shift is occurring in parallel with transformations in the models and roles assigned to science communication, as well as in the physiognomy of the contemporary system of knowledge production and of its interplay with the societal context.

Open Science is characterised by the emphasis on knowledge circulation across disciplinary boundaries and institutional contexts, hybridisation of knowledge production, and shifting values, concerns and requests made to academia by the public. Research communication is required to evolve towards the recognition of diversified audiences, blurred boundaries between science and society, and work to foster shared epistemologies based on co-production (Jasanoff, 2004b; Trench, 2008), in order to achieve effective and meaningful engagement.

S. Fabrizio (✉) · R. Giuffredi · E. Rizziato · A. M. Stilo
CNR-IRCrES - National Research Council of Italy, Research Institute on Sustainable Economic Growth, Rome, Italy
e-mail: serena.fabrizio@cnr.it; rita.giuffredi@cnr.it; erica.rizziato@cnr.it;
alessandramaria.stilo@cnr.it

E. Storace
CNR-UVR - National Research Council of Italy, Technology transfer office, Rome, Italy
e-mail: elisa.storace@cnr.it

V. Tudisca
CNR-IRPPS - National Research Council of Italy, Institute for Research on Population and Social Policies, Rome, Italy
e-mail: valentina.tudisca@cnr.it

In the context of Research Infrastructures, understood as a socio-technical objects, it is critical to adequately recognise the importance of the social component. This dimension encompasses the individuals and organisations involved in designing, operating, and governing the infrastructure, as well as those who access its resources or interact with it as users, contributors, or stakeholders.

Within this perspective, communication does not constitute an end, nor is part of the primary missions of a Research Infrastructure. However, it plays an important role to support coordination, mutual understanding, and interaction among different actors, thereby facilitating access, use, and meaningful integration of the infrastructure resources within research and policy contexts.

From a broader epistemological perspective, contributions from Science and Technology Studies have shown how scientific knowledge and practices increasingly emerge from interactions among heterogeneous social actors and institutional contexts (Gibbons et al., 1994; Jasanoff, 2004b; Ziman, 2000). Although these contributions primarily address knowledge production rather than the design of Research Infrastructures, they offer a useful conceptual background for understanding the relational conditions under which knowledge is produced and mobilised in open and distributed research environments. Within this context, attention to communicative and relational dimensions supports access, coordination, and effective use of Research Infrastructures (RIs), contributing to their practical relevance and usability by enabling their uptake and sustained use through the development of a robust and aware community of users.

The chapter examines communication and engagement practices implemented within the FOSSR Research Infrastructure as interrelated components of a broader process of interaction between RI developers, potential users, and stakeholders. The different sections address complementary dimensions, from communication and dissemination activities to more participative formats. Within this perspective, both participatory practices and monitoring tools are discussed as part of a coherent approach to understand how relationships and learning processes are built and sustained within an Open Research Infrastructure. The chapter is organised as follows. Section 15.1 introduces the overall framing and rationale of the chapter. Section 15.2 outlines the conceptual foundations of the FOSSR approach to communication and community building. Section 15.3 describes the main communication, community-building, and stakeholder engagement actions implemented within the FOSSR framework. Section 15.4 presents the adoption of an innovative Action Research methodology with the aim of fostering the creation of a community among partners and stakeholders, to promote the generativity of the project and improve its social impact. The aim was also to experiment with expanding the competencies of those involved, to broaden the vision of FOSSR's potential. Section 15.5 regards the system of KPIs (Key Performance Indicators) and of the early engagement indicators used to monitor communication performance and engagement dynamics and discusses their role within a phased evaluation perspective. Section 15.6 concludes the chapter.

15.2 The FOSSR's Approach to Communication, Community Building and Stakeholders' Engagement

The evolution of science communication theory in recent decades provides a critical lens to interpret the transformations impacting Open Science Research Infrastructures. Initially, at the beginning of the '80 s, the prevailing paradigm of science communication was the "Public Understanding of Science" model, promoted by scientific and public Institutions to reduce the disengagement of the public from science, predicated to be attributable to an absence, or "deficit", of scientific knowledge (Bodmer, 1985; Miller, 2004). This deficit was theorised to be remedied through the provision of adequate injections of scientific knowledge.

However, this model has been criticised by the academic community for its technocratic and paternalistic assumptions, and for its failure to adequately value the importance of social, cultural, value-related and political dimensions of public engagement with science (Davies & Horst, 2016; Jasanoff, 2003). In response, scholars have developed a reflection pivoting on public dialogue and participation, emphasising the role of context in learning, the role of non-formal epistemologies in the understanding and resolution of science-based issues, and models aimed at co-producing knowledge (Funtowicz & Ravetz, 1993; Jasanoff, 2004b; Wynne, 1992).

Particularly, in the social sphere, new practices for creating knowledge and communication have been developed through participatory approaches, including Action Research, which consists of a cyclical process of planning, action, and reflection on the results of the action. This approach generates a communication vision that extends beyond content and is inspired by the opportunity for transformative practices, creating spaces for the reflexive adaptation of projects, meaning-making and the creation of genuine value. In Action Research, the relationship between subject and object is intersubjective; both are social actors, the product and producer of processes and knowledge based on a mutual relationship (Lewin, 1972; French & Bell, 1998; Reason & Bradbury, 2001, 2008, 2015). The conceptual framework grounding the new Action Research methodology is addressed and detailed in Sect. 15.4.

Dialogic and participatory models of science communication are in alignment with the principles of Open Science, as both are aimed at fostering a paradigm change in research, heading towards the direction of a more democratic incorporation in social contexts (Hecker et al., 2018; Jasanoff, 2004a). In both cases, communication role extends beyond the mere dissemination of knowledge to the public, towards the facilitation of an engagement among researchers, policymakers, civil society, and communities. This approach is of particular significance for Research Infrastructures (RIs), whose identity as collaborative, cross-disciplinary platforms is as relevant as the technical one.

Building on this relational understanding of communication, recent contributions in research impact assessment have further conceptualised how interactions themselves become mechanisms through which research generates social relevance.

Some approaches (Molas-Gallart & Tang, 2011) focus on the dynamic interplays between researchers and societal stakeholders as key mechanisms through which research generates socially relevant outcomes. In this framework, *productive interactions*, whether direct (e.g. meetings and workshops), indirect (e.g. reports, policy documents, shared artefacts), or financial (e.g. collaborative funding arrangements), are conceptualised as relational processes through which knowledge produced in research contexts acquires relevance beyond academia. This perspective offers a possibility for understanding how communicative and participatory activities within Research Infrastructures may contribute to the emergence of socially meaningful forms of interaction, and to the generation of impact.

The FOSSR communication approach was conceived as an integral component of the infrastructure's strategic assets, contributing to the coordination, alignment, and interaction of its multiple actors. In this sense, FOSSR meta-infrastructure is considered as a complex socio-technical system, in which technical components, organisational arrangements, and human practices are tightly interwoven (Hughes, 1987). Within such systems, communication plays a central and dynamic role in enabling interoperability, shared understanding, and collective sense-making across institutional and disciplinary boundaries.

Prior to the initiation of the communication activities, a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis (Reale & Fabrizio, 2024) was performed to inform the design of the FOSSR communication and engagement strategy, assessing the initial assets and potential pitfalls specifically related to visibility, uptake, and use of the Research Infrastructure. The analysis emphasised that FOSSR could rely on the demonstrated effectiveness of existing Research Infrastructure communities (notably CESSDA ERIC, SHARE ERIC and RISIS) as consolidated ecosystems, as regards the access requests to datasets and the impact produced in terms of projects and publications. Furthermore, all involved partners could rely on robust competencies in the activities connected to RI development, as well as on consolidated past experiences in designing and managing training and PhD activities. Conversely, the analysis identified the necessity to concentrate efforts on the integration of tools, internal and external networking, and on the effective use of resources. This highlighted the importance of actively engaging researchers and stakeholders in a cohesive and stable manner to foster knowledge circulation and the full exploitation of resources.

In light of these considerations, the FOSSR project was conceived with the objective of mobilising knowledge-intensive resources as the Open Cloud, thereby serving as a formidable intermediation layer among data and services producers (who also simultaneously play the role of actual users of the RI's developing ecosystem), archives, and potential users from the diverse stakeholder groups.

Further opportunities identified through the SWOT analysis concerned the role of communication in supporting innovation and awareness, particularly in relation to emerging methodologies for data collection and analysis and to the development of semantic knowledge graphs, which require shared understanding and coordinated interaction among diverse user communities.

Similarly, the development of longitudinal and panel data, historically underutilised in the Italian research context, was identified as a communication challenge as much as a technical one, requiring targeted actions to raise awareness and foster adoption among researchers and institutional users.

Finally, the SWOT analysis drew attention to potential threats relevant for communication and engagement strategies, including geographical disparities within Italy, institutional fragmentation, uneven awareness among SSH scholars, and the challenge of ensuring long-term visibility and use of the Research Infrastructure beyond the NRRP-funded phase.

15.2.1 *The FOSSR Audience*

Communication priorities are primarily shaped by the needs of those actors who are directly involved in the production, use, and institutional uptake of research outputs.

In this respect, core scientific communities constitute the primary reference audience of FOSSR. Researchers, doctoral candidates, and early-career scholars represent the main potential users of infrastructural services, data, and tools, and their sustained engagement is essential for ensuring the scientific relevance, methodological robustness, and continuous development of the infrastructure. Communication towards these communities is therefore closely intertwined with access to resources and services, training, capacity building, and opportunities for feedback, rather than being limited to dissemination for visibility purposes (see Fig. 15.1).

Alongside academic potential users, policy makers and institutional stakeholders represent a second, strategic audience for the Research Infrastructure (RI). Communication addressed to this group is oriented towards facilitating the uptake and interpretation of research outputs, supporting evidence-informed decision-making, and reinforcing the legitimacy of public investment in large-scale RIs. In this context, communicative practices are closely connected to policy-oriented formats, such as targeted workshops, policy briefs, and dedicated sessions designed to align infrastructural resources with policy needs.

The differentiated articulation of communication priorities also opens the space for more intensive forms of engagement. Sustained interaction with core scientific communities and policy-oriented stakeholders creates the conditions for moving beyond information provision and structured dialogue towards processes of shared problem framing, mutual learning, and reflexive adaptation of research practices.

This strategy followed a progressive model of stakeholder engagement adapted to the context of RIs, articulated in four sequential phases: inform, involve, collaborate, and engage (Fabrizio et al., 2023). The temporal evolution of communication activities mirrors the project own development, from a top-down approach in 2023 to a more horizontal and participatory model during 2024–2025.

At the *Inform* and *Involve* levels, indicators primarily capture the performance of communication activities aimed at awareness-raising and initial participation,

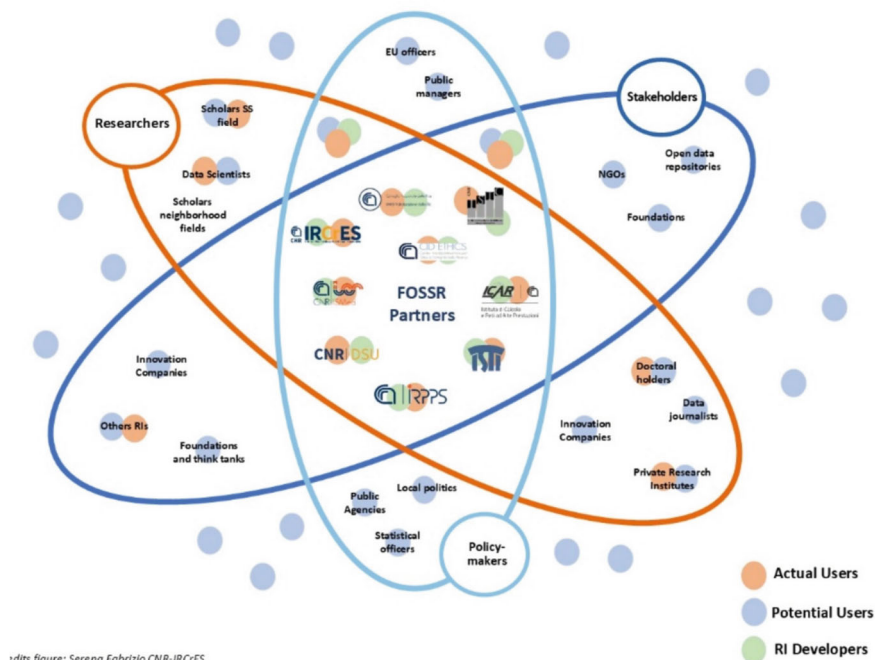


Fig. 15.1 The FOSSR “galaxy”

such as website access, downloads, attendance at events, and first interactions with project outputs. These indicators document the capacity of FOSSR to reach and mobilise potential users.

More advanced levels, particularly *Collaborate*, provide the interpretative space to account for qualitative shifts in interaction, where engagement moved beyond participation towards co-design and reflexive exchange. It is at this level that the project generated its most tangible outcomes to date, in the form of design-oriented improvements resulting from iterative interaction between services developers and potential users within Action Research activities. Such outcomes correspond to what the literature describes as internal or organisational forms of impact, where learning and adaptation occur within the infrastructure itself rather than through external uptake (Fabre et al., 2021; Mayernik et al., 2017).

The *Empower* level, while conceptually relevant for long-term infrastructural sustainability, is here treated as a perspective dimension. Indicators associated with governance participation or strategic alignment are interpreted as early signals of potential future engagement.

From this perspective, communication is not limited to supporting access, visibility, or legitimacy, but contributes to the emergence of collaborative dynamics in which researchers and institutional actors jointly reflect on infrastructural needs, research workflows, and governance arrangements. Such dynamics rely on selective,

stable, and context-sensitive interactions, rather than on symmetrical engagement across all audiences, and are especially relevant for Research Infrastructures operating in open, distributed, and policy-relevant research environments.

Communication addressed to wider, non-specialist audiences plays a more limited and complementary role supporting objectives of transparency and public visibility, contributing to broader reflections on the societal relevance of publicly funded research. Scholarly discussions on the public communication of science have highlighted the importance of such practices in sustaining trust and institutional legitimacy, particularly in domains where public accountability is central (Benessia et al., 2016; Irwin, 2015; Jasanoff, 2003, 2005; Wynne et al., 2007).

15.3 Community Building and Stakeholder Engagement for RIs: Main Issues and Actions Developed

The FOSSR communication strategy was designed as a coherent, multi-channel framework structured around three interconnected dimensions:

- (a) institutional and informational presence through the project website;
- (b) relational and narrative presence across social media platforms;
- (c) dialogical and participatory presence through a diversified offer of events.

In the first phase, FOSSR communication activities were designed to achieve visibility and recognition, in a context where other analogue research-based initiatives were already present or under development.

The starting point of the process was the group of participants involved in the project kick-off meeting and the initial core of the FOSSR research team, comprising approximately 70 contacts.

Objectives of immediate importance for the FOSSR communication strategy were relation-building and knowledge exchange among all infrastructure actors, and the promotion of a smooth and constant circulation of information within the internal project community, alongside the more traditional broadcasting paradigm, focused on transmitting information and gaining visibility.

15.3.1 Informing, Documenting and Establishing a Narrative

FOSSR digital communication strategy focused on two main channels: social media and the website.

15.3.1.1 Social Media Profiles: Visibility, Proximity, and Narrative

The project's social media profiles—Facebook, LinkedIn, YouTube and initially Twitter, later replaced by Instagram following an editorial reorientation—were the first communication tools activated.

The social media strategy was grounded in three operational principles:

- (a) integration with the overall communication framework;
- (b) editorial continuity, with regular weekly publications maintaining a consistent format and tone; and
- (c) differentiation across platforms, through the adaptation of language and formats to specific audiences.

On Facebook, communication emphasized the broader community by publishing event-related content, photographic reports, and outreach materials for a general audience. LinkedIn adopted a professional and institutional register, targeting researchers, partner organizations, and policymakers, with an emphasis on project results, calls, and collaborations (e.g., #FOSSRpeople). Twitter and later Instagram have been used for more immediate, visually driven communication targeting younger audiences and doctoral researchers. The YouTube channel targets a broad audience, including both specialists and people with a general interest in Open Science, and consequently the proposed contents are highly segmented: out of the forty videos uploaded, more than half (23) are interviews, just over a quarter (11) are complete recordings of events, while the remaining six (6) are explanatory videos focusing on aspects of the project or related scientific concepts (e.g., DOI, FAIR data).

The social media channels provide a means of presenting the “human dimension” of FOSSR—researchers, personal stories, and shared experiences—thereby fostering a sense of belonging and identification within the FOSSR community (Davies et al., 2019). In this way, social communication played a central role in the Involve phase, facilitating relationships among the project's stakeholders and with the broader public.

15.3.1.2 The Website: Informing, Documenting, and Connecting

The official project website¹ was conceived as both an informational hub and a public archive of FOSSR's activities. The primary target groups identified for the website included:

- (a) social science researchers seeking data, tools and services;
- (b) others research infrastructures, institutions, and policymakers engaged in developing the national infrastructure;

¹ www.fosssr.eu.

- (c) a wider variety of stakeholders such as students, doctoral candidates, and the scientific communities interested in open-science practices.

The architecture was designed to ensure accessibility, transparency, and continuity, presenting project objectives, services and technical developments, events and outcomes, and promoting training and dissemination activities. The website was articulated into a limited number of core sections covering project information, the Open Cloud, community-building activities, scientific outputs, and news and events. In particular, the Open Cloud section functions as a central access point to data, services, and methodological resources. This modular organisation supports intuitive navigation and allows different user groups—such as researchers, policymakers, and infrastructure developers—to access relevant content efficiently.

The iconographic style—based on images of contemporary architecture—was selected to provide visual coherence and to evoke for FOSSR the metaphors of an ambitious building under construction, built with the contribution of many actors, open to the exchanges with the world and articulated on the interconnection and networking of researchers and societal actors. Moreover, the choice of architectural structures had the advantage of evoking the study of people's social behaviours, which is at the heart of social sciences.

15.3.2 Developing Dialogue and Grounding Participation

Among FOSSR's primary objectives, community building was fostered through a diversified offer of events, including in-person, online, and hybrid formats. These events were designed to leverage the full range of involvement formats, encompassing both the more traditional settings, online seminars, through events targeting specific communities, like policy maker sessions, until formats based on full engagement of participants, such as Action Research sessions. A series of FOSSR Café was also incorporated into the original event planning, with the objective of facilitating informal interactions and conversation among the FOSSR research team. In Appendix (Table 5), we collected the main information related to all the events organized.

15.3.2.1 The FOSSR Café: A Dialogical Dimension

One of the most effective tools for community building within FOSSR has been the FOSSR Café format, launched in 2024 as an informal and participatory space for dialogue. The Cafés have been targeted at the project internal community, comprising doctoral students and young researchers (identified as promising actors for the development of the infrastructure since the design phase), researchers, and technologists involved in the development of the RI. The Cafés were intended to promote mutual understanding, listening, and a reflective space for the RI.

The inclusion of these cafes was particularly designed to provide a space for younger members of the community, with the intention of enhancing community-building. Participants were invited to share experiences, expectations, and working tools through a “representative object” symbolizing their individual contribution to the community. Inspired by knowledge cafes and by the methodology behind science cafes (Lefika & Mearns, 2015; Powell, 2010) this approach was chosen to encourage dialogue and knowledge circulation among FOSSR staff members, whose home Institutes are distributed across Italy, promoting collective identity and project interdisciplinarity while maintaining a relaxed and informal setting. Participants were brought together to introduce their profiles and exchange ideas, developing soft skills related to sociality, such as those of team and community building. For many project participants, the FOSSR Café experience was an opportunity to get to know their colleagues and make themselves known to them, building trust in an informal setting. The FOSSR Cafés functioned as laboratories of communicative experimentation, where the institutional language of research infrastructures was opened to conversation, storytelling, and direct participation. Between 2024 and 2025, eight FOSSR Café sessions were held, with an average of 20 participants per session.

15.3.2.2 Seminars/Webinars and Demonstration Sessions

Within the online communication initiatives, we planned two categories of events—webinars and seminars—organized through a similar participatory approach, but targeting different groups and pursuing distinct aims. Even though the two formats blurred to a certain extent during the development of the activities, the distinction made in the design phase reveals some fine details of the articulation of publics—and hence adequate formats—hypothesized for the FOSSR audience.

Online seminars were targeted to an academic audience—researchers from universities and public research centres, university students, including but not limited to FOSSR research teams—and had the main aim of promoting the exchange of research ideas and questions, presenting methods and findings developed by FOSSR thematic network, building a shared knowledge background and activating a collective process of knowledge co-creation that nourished the techno-scientific decisions taken within the project. Indeed, seminars were not conceived to transmit consolidated knowledge, but to foster an informed debate on problematic research issues that required a deep and wide exchange of points of view among scholars from different fields to achieve transdisciplinary solutions. This aspect was stressed by the format chosen, including 1–2 invited/selected speakers working in FOSSR research field followed by a roundtable composed by 4–10 panellists selected to nourish the debate, and leaving the audience the possibility to contribute via chat.

Among the topics considered as suitable were, e.g., building the FOSSR Italian Online Probability Panel (IOPP), other existing research infrastructures, with special attention to those connected to FOSSR, theoretical models underlying the main international social surveys and their possible evolution, and FOSSR virtual panels.

Online webinars were targeted not only to academics, but to a larger audience, including also researchers working in the private sector, practitioners, and various kinds of social actors/stakeholders, e. g., policy makers, officers, administrative staff, associations, and companies. The webinars were intended to give visibility to the project and discuss specific tools and services developed within FOSSR to investigate economic and societal changes, thereby increasing awareness about their public availability and collecting inputs and feedback from civil society to foster their usability in different contexts and ensure their alignment to the needs, values, and expectations of society, as envisaged by the European Responsible Research and Innovation framework.

Moreover, as a complement to the webinars, during the last two editions of the FOSSR Days—annual event aimed at presenting and discussing the project achievements—a new format was introduced to showcase FOSSR services in a practical and operational way: Demonstration Sessions, conceived as hands-on activities designed to involve participants in a direct experimentation with available tools and services.

Structured around a “tour” of the services and concrete application cases, these two sessions allowed participants to explore functionalities and workflows with the support of experts, respectively focusing on FOSSR Virtual Research Environment and Open Cloud and Marketplace. Within the engagement framework adopted in the chapter, Demonstration Sessions represent a transition point from involvement to early forms of collaboration, where participants actively interact with services and contribute feedback to their further development.

All the events were delivered through a Teams platform in Italian, the related written materials being prepared in English to encourage interest beyond the national context and made available on the project cloud via Zenodo together with the video recordings also posted on the project YouTube channel.

Moreover, we conducted an ongoing evaluation activity to improve the quality of the events, submitting evaluation questionnaires to participants to gather information about their appreciation levels and, for the seminars, also asking a discussant from the scientific community feedback.

Both seminars and webinars were conceived as events where dissemination and scientific research overlap: with reference to the FOSSR framework of community building and stakeholder engagement they were aimed to realize not only the “inform” and “involve” level, but also the “collaborate” dimension. Indeed, while giving visibility to the project, seminars offered wide academic audiences—also external to FOSSR partnership—the opportunity of contributing to address FOSSR scientific issues and challenges, informing and nourishing the techno-scientific decisions to be taken within the project; in particular, with reference to the development of the IOPP, to the Agent-based modelling and to the FOSSR Open Cloud. In the case of webinars, tools and innovations developed by the projects were presented and collectively debated: the Policy Learning Platform, targeted to policy makers, and the FOSSR IOPP in the startup phase, debated among international research communities that revolve around other European Online Probability Panels.

15.3.2.3 Policy Dialogue: Policy Brief and Policymakers' Sessions

FOSSR has identified several key audiences (see Sect. 15.2), including policymakers and institutional actors represent a distinct and strategic reference public. The relevance of FOSSR research streams to this audience is twofold: first, these streams are targeted at gathering socio-economic data regarding key societal issues, and to the development of methodological advancements in data collection; secondly, they monitor, interpret, and offer advanced interpretation tools of general trends related to relevant socio-political development that are relevant to policy design, implementation, and evaluation.

In line with the differentiated articulation of publics adopted by the project, communication with policy makers was conceived not as a generic outreach activity, but as a targeted form of institutional engagement, calibrated to the roles, constraints, and informational needs of actors involved in decision-making processes.

Specifically, FOSSR aimed to engage with officers from all levels of policy implementation, including government bodies at both the national and local levels. The primary strategy adopted to establish and consolidate these interactions built upon pre-existing relational capital developed within European Research Infrastructures RIs (RISIS, CESSDA, SHARE), with the subsequent expansion of these networks through a snowball approach and by means of devoted communication tools.

The two principal instruments conceived to provide content and stimulate dialogue with policy officers were the Policymakers Sessions and the Policy Brief series which should be read as complementary components of a single engagement strategy. Both tools were developed to translate research results into policy-relevant knowledge, adopting a language, format, and narrative style suited to the time constraints and operational logics of policy actors, while preserving analytical rigour. In this perspective, policy briefs functioned as *boundary objects*, enabling a first level of interaction by framing complex evidence in a concise and accessible form, supported by visual elements and infographics to facilitate rapid interpretation.

The Policy Briefs were published as six-page booklets, with a coordinated cover illustrated with cover images that metaphorically evoked the contents. Following the dissemination of the Policy Briefs to the designated target audience, the identical content was presented and discussed in concise two-hour webinars, designated as "Policymakers sessions". These webinars were specifically targeted at policymakers and enriched by the presence of a discussant, who played a role in commenting on and animating the debate, chosen to ensure scientific rigour and enhance clarity.

Each Policymakers Session was strategically positioned as the opening event of the annual FOSSR Days, reinforcing the connection between policy dialogue and the broader scientific and community-oriented activities of the Research Infrastructure. This design choice contributed to situating policy engagement within the wider communicative framework.

Policy Briefs and Policymakers Sessions were structured around substantive policy questions emerging at the intersection of data availability, methodological

innovation, and policy evidence. Among the recurrent themes addressed were data-driven policy learning and ex-ante policy evaluation, the use of advanced analytical techniques such as text mining and causal inference to support policy design, and the production of high-quality, high-frequency individual data for monitoring social and economic change.²

These topics were selected not only for their scientific relevance, but also for their direct applicability to ongoing policy challenges, including the evaluation of public programmes, the alignment of research funding with societal goals, and the anticipation of policy impacts in contexts of uncertainty.

Focusing policy dialogue on concrete thematic domains contributed to grounding interaction in shared problem spaces, facilitating discussion on how research infrastructures can support policy learning processes, enhance the usability of evidence, and strengthen institutional capacities for evidence-informed decision-making.

15.4 A New Action Research Methodological Approach to Generate Impact on the Community

The Action Research sessions are part of the participatory sessions of the FOSSR project, which aimed to promote shared knowledge creation and transformative reflection among researchers, students, and societal stakeholders.

In the FOSSR context, Action Research was used in an innovative way, as described below, with the aim of fostering the creation of a community among partners and stakeholders to promote the generativity of the project and improve its social impact. In this sense, the aim was to experiment with broadening the competencies of those involved to expand the vision of FOSSR's potential.

The Action Research methodology is a type of research that complements traditional scientific research. It is characterised by its ability to generate knowledge about the dynamic reality of socio-economic systems by activating the actors in the field to investigate the critical issues they experience and transform them. It proposes the transformation of social systems, using certain elements of the descriptive-analytical tradition, but focusing on transformative and interactive processes (Lewin, 1972; French & Bell, 1998, Reason & Bradbury, 2001, 2008, 2015).

In Action Research, the relationship between subject and object is intersubjective; both are social actors, the product and producer of processes based on a mutual

² Details and agendas are available at the pages: <https://www.fossr.eu/en/eventi/fossr-days-opportunities-from-italys-first-open-cloud-for-social-sciences/> (First Policy makers session, October 16th, 2023); <https://www.fossr.eu/eventi/fossr-days-2024-policy-makers-session/> (Second Policy makers session, October ninth, 2024); <https://www.fossr.eu/eventi/fossr-days-2026-policy-makers-session-high-quality-high-frequency-individual-data-production-in-italy-innovation-introduced-by-fossr/> (Third Policy makers session, February four, 2026).

relationship. Here, the empirical object no longer has a passive role, but an active one, as does the researcher, who is no longer just an observer.

Action Research becomes an essential approach for studying complex systems, considered, as Edgar Morin argues, to be a set of heterogeneous variables, both subjective and objective, which can only be understood by studying their interaction; it is not possible to understand a complex system by abstracting its variables and studying them as isolated from the situation from which they originate.

Kurt Lewin (1972), who first formalised the forms of Action Research, defines it as: “research that, by comparing the conditions and effects of various forms of social action and research, produces social action. Research that only produces books is not sufficient”.

Action Research is based on a spiral of steps, each of which consists of a cyclical process of planning, action, and reflection on the results of the action.

In the international debate, in the last 25 years, two critical issues have emerged that needed to be addressed in order to develop various Action Research practices: improving the quality of interactions and being able to transform the contexts in which the critical issues to be addressed emerge (Reason & Bradbury, 2001, 2008, 2015, Rizziato, 2014).

During a long-term Action Research project by CNR-IRCrES, a methodology was developed that brought significant innovations to these two critical issues: the methodology for horizontal leadership and integrated organisations (HOLIO), which forms the basis of a CNR spin-off company.

It proposes a paradigm shift regarding traditional approaches to change in organisational and territorial contexts, overcoming the reductive rationalistic visions of the positivist approach with a transdisciplinary and multidisciplinary approach. It is based on a systemic and evolutionary vision of the individual and the organisation and on a generative approach to development, characterised by transformative learning dynamics. The methodology has also been applied to innovation in the management of complex projects, to the renewal of university teaching, and to placement (Rizziato, 2010, 2020; Rizziato, 2017; Rizziato, 2022a, b; 2024; Scardicchio, 2019).

The person is considered as a system, characterized by the dimensions through which they relate to reality-cognitive, emotional, and volitional-guided by a biographical leitmotif toward the realization of their own identity (Morin in Ceruti, 2017; Morin, 1993; Campbell et al., 1982; Mounier, 1955; Assagioli, 1977; Lievegoed, 1979; Kelly, 2004; Maslow, 1954). This becomes visible in the activation of a transformative “intention” toward one’s personal constructs, often unconscious, derived from one’s biography and constituting the source of the recurring critical issues the individual faces. Neuroscience has shown that the power of intention in interactions has a transformative nature (Rizzolatti & Sinigaglia, 2006; Tomasello, 2005; Siegel, 2001; Poli, 2014; Bateson, 1993; Rohen, 2007). From this arises a new form of responsibility: that of one’s own intentionality and how it manifests in the thought-forms that guide our feeling and acting. It involves adopting an evolutionary attitude that enables the identification and transformation of the constructs that

inspire the automatisms underlying our recurring criticalities, thereby consciously renewing our implicit epistemologies.

The organisation/project is seen as a social structure, both closed and open, according to the vision of philosopher Edgar Morin, for whom it is “what determines a system from different elements, and therefore constitutes a unity at the same time as it constitutes a multiplicity”, capable of imposing constraints on the parts, as well as “bringing out qualities that would not exist without such an organisation”. It is an autonomous system of relationships, but one that is constantly connected to the outside world. It defines its identity, its *raison d'être*, in serving a customer/beneficiary through a product or service (Morin, 2002; Novara, 2008; Novara in Rizziato, 2010; Senge, 1990; Lievegoed, 1973; Bekman, 2007, 2010; Varela et al., 1991; Luhmann, 2001).

Organisational/project health is linked to the fact that personal and organisational/project identities are connected by an evolutionary synergy, guided by a mutual generation of meaning that is both subjective and collective.

For this reason, the HOLIO methodology proposes the creation of a “horizontal space” as a development infrastructure, to initiate systemic interactions by overcoming vertical functional logics (or projects excessively fragmented into activities), which have often been the source of the critical issues to be addressed.

It consists of two groups, which are fundamental to initiating new forms of work: that of the responsible (staff) and that of those called upon to take concrete action to create new processes (developers). The two groups work through regular meetings using a transformative learning method (TRASE—Systemic Evolutionary Training) and an exploratory, experimental approach that allows for the creation of new competencies and new processes, constantly focusing attention on the added value for the beneficiary.

The starting point of the process is the formulation of development questions, designed to orient activities toward the beneficiary and overcome self-referential logic. These development questions must be shared with those impacted by the critical issues and reoriented to broaden perception and the reference system's scenario, so that innovation becomes sustainable because it is generated by the actors who will have to implement it. They differ from problem-solving questions, which narrow the view of the system's complexity, often leading to illusory solutions because they are disconnected from the reality that needs to be transformed.

The HOLIO methodology was applied in the FOSSR context to maximize social impact by co-generating project activities with the involvement of partners and stakeholders. To this end, a development process was created, organized into two sessions of 2 days each, one week apart: the first session took place in March 2024 and the second in May 2025.

The responsible and operational staff (developers) were brought together in a horizontal space, conceived as a development infrastructure, in which the groups reflected and worked on how to optimize impact on the beneficiary, who was analysed and divided into different categories.

On the first day of the first session, which involved several beneficiaries and stakeholders, the project's development questions were explored, focusing on the

impact on beneficiaries from a systemic perspective. The work was carried out in groups, within which the questions were reformulated several times. Finally, concrete steps were defined to explore, together with the stakeholders and beneficiaries not present at the meeting, the possibilities of redefining the questions themselves and gathering ideas to generate the innovations envisioned by the project.

The development questions were particularly useful for shifting the focus from problem-solving tasks to be carried out to problem setting, i.e., a systemic and shared awareness of the scenario in which the innovations envisioned by the project are to be implemented.

The groups worked with the TRASE approach of transformative learning, defined as an alternating cycle between reflecting on what one aims to achieve, identifying possible steps to explore/experiment with real opportunities for innovation, and implementing those steps. The method highlights the participants' interactive habits and the potential improvements achievable through the renewal of their implicit personal epistemologies, according to the needs that emerge from focusing on the beneficiary during the process.

The TRASE pathway of the HOLIO methodology articulates reflective and future-oriented phases through specific dialogue and movement exercises (MOV-CORE), which stimulate imaginative and intuitive thinking, enabling the expansion and sharing of the reference scenario. This allows the conscious co-creation of new processes.

The pathway is focused on action-rhythmic and generative, characterized by creative initiative in relation to the complexity of the context. People are valued as an "active part" of the system: they are not considered a "resource" like any other, which would render them de-subjectified. On the contrary, they are called to act as individuals.

The groups worked in parallel on the development of new processes and new competencies suited to complex contexts: horizontal leadership competencies for the systemic and evolutionary development of organizations, territories, and projects. Horizontal leadership is not defined by leading people, but by leading oneself (self-leadership) and the processes in which the people involved can act responsibly toward a common goal. The competencies that characterize horizontal leadership enable systemic-evolutionary thinking, perception, and action, making forms of social creativity possible.

The proposed transformative learning approach has a constructivist foundation (Mezirow, 2003) and is inspired by recent developments in neuroscience, particularly studies on neuroplasticity (Siegel, 2001; 2010; Damasio, 1995; Doidge, 2007). It is characterized by a multi and trans disciplinary approach that combines an analytical, formal, and quantitative dimension with a descriptive, phenomenological, and qualitative one, and specifically proposes working on the transformative potential of intention.

The second day of the first session of the FOSSR program, held after one week, involved sharing the results of the explorations, defining new questions, and articulating them for a dynamic design of the outcomes to be pursued, which enabled the co-generation of ideas emerging from the shared development

questions. Dynamic design is an important element of the HOLIO methodology, as it allows a shift from development questions to a mode of co-designing-together with key stakeholders-what is intended to be achieved. It is defined through seven interconnected perspectives (called the 7 Beacons), allowing for the experimentation of the innovation to be realized.

After about a year, the main FOSSR services had been prototyped, and the two-day process was repeated, starting from development questions on how to optimize these services to maximize their impact on beneficiaries.

During the process, some horizontal leadership competencies were exercised, which proved to be very significant in changing the perspective of the working group and reviewing processes.

In this regard, it is believed that, in general, horizontal leadership competencies can be considered as new competencies for social researchers who wish to work with Action Research in social contexts aimed at optimising impact, as has been the case for FOSSR research infrastructures.

Furthermore, as a follow-up to the Action Research sessions emerged that:

- the Action Research sessions helped expand and solidify the concept of co-creation with stakeholders and users, stimulating new systemic competencies in the definition of FOSSR services;
- for many participants, the path clarified how Action Research can support the development of FOSSR's soft infrastructure, moving beyond the data dimension alone;
- the work on the development question and the dynamic design approach with the "7 Beacons" allowed the group to focus collectively on beneficiaries, broadening the audience and assisting in co-designing with a focus on maximizing the impact of FOSSR's offerings. Consequently, it was possible to share a working principle centred on the actual use of the prototyped services, allowing for their refinement;
- some services and platforms had been designed for researchers and research institutions, but their potential for community activation had been underestimated. In this regard, the exploratory logic of the "next step" was considered particularly useful for concretely defining work phases and clarifying easily achievable short-term goals;
- for many, the proposed approach was seen as a valuable methodology for future use as well.

The innovative experimentation of Action Research Sessions within the framework of an RI was considered one of the most original contributions to the transformative development of FOSSR into a socially robust Research Infrastructure, based on knowledge co-production and with the ability to engage in reflexivity.

In alignment with the engagement framework, the Action Research sessions positioned FOSSR at the upper stages of the engagement continuum-primarily within the *Collaborate* and *Engage* dimensions by enabling participants to influence decision-making processes, service development, and long-term organisational learning. This represents one of the most innovative elements of the FOSSR

engagement model, moving from participation to shared responsibility and co-construction.

15.5 Monitoring Communication Performance and Engagement with Potential Users

The development of a system of Key Performance Indicators (KPIs) is a crucial step for monitoring the progress and effectiveness of a Research Infrastructure. In the case of FOSSR the KPI framework was designed with a specific focus on the performance of communication and outreach activities. In this sense, engagement is conceived as a preparatory dimension, aimed at familiarising relevant audiences with the infrastructure and supporting the gradual construction of a community that may later evolve into an active user base once the cloud-based environment becomes available. In this section, we present an overview of main results emerging from the implementation of these indicators and discuss how they have supported a clearer understanding of the project reach, visibility, and interactions with relevant audiences and stakeholders.

While traditional performance metrics proved appropriate for documenting communication activities, it also became evident that a meaningful assessment of infrastructural impact would require conditions that are not yet in place within FOSSR, such as stable user communities and integrated service use. This distinction between performance monitoring and impact assessment is widely acknowledged in the literature on Research Infrastructures, which highlights how impact can only be meaningfully assessed once infrastructures reach a sufficient level of maturity and sustained use (Fabre et al., 2021; Mayernik et al., 2017).

Our approach aligns with recent debates within the European Research Infrastructure landscape, particularly those fostered by ESFRI (European Strategy Forum on Research Infrastructures) and the ERIC (European Research Infrastructure Consortium) Forum, which underscore the need for flexible, domain-sensitive, and development-stage-aware indicator systems (ESFRI Working Group on Monitoring, 2019). Comparative analyses of KPIs across Research Infrastructures show that no single set of metrics can adequately reflect the diversity of missions, services, and communities involved, especially in early or transitional phases (Kolar et al., 2019). This could be particularly relevant for Social Science Research Infrastructures, where patterns of use, citation, and impact tend to emerge more slowly and in less standardised forms.

Within FOSSR, the assessment of communication and community-building activities was guided by a combined system of quantitative indicators and a qualitative interpretative framework represented by the Engagement Chart (see Sect. 15.2). In the current phase of the infrastructure development, this dual approach was designed to document the performance of communication activities and early forms of engagement with potential users. This combination reflects recommendations in

the RI evaluation literature to complement quantitative metrics with interpretative frameworks capable of capturing relational and processual dimensions of infrastructural development (Mayernik et al., 2017).

From a quantitative perspective, the KPIs defined in the Communication Strategy (Reale & Fabrizio, 2024) tracked the main dimensions of dissemination and visibility: website accesses and visits; downloads of newsletters, policy briefs, and training materials; uploads and downloads on Zenodo; number of social media posts, followers and interactions; number of media mentions; and the growth of mailing lists and contact bases. These indicators provide evidence of the capacity of communication actions to reach relevant audiences and sustain a regular flow of content across channels.

Complementing these performance indicators, the KEIs included the number of events organised—such Training, Seminars and Webinars and Networking Events (General Conference, FOSSR Café)—the number and profiles of participants, the recurrence of participation across multiple activities, interactions with stakeholders and policymakers, and the emergence of expressions of interest or co-designed initiatives. These indicators trace how potential users progressively move from passive contact to more active forms of involvement in the project communication and dialogical activities, consistent with approaches that interpret engagement as a gradual and relational process (Mayernik et al., 2017).

Looking ahead, the challenge is to move from measuring communication performance and early engagement towards forms of assessment that may become meaningful once stable conditions of infrastructure use are in place. This implies going beyond documenting how many potential users interact with the Research Infrastructure, towards understanding how such interactions may eventually translate into enhanced research capabilities, informed decision-making, and the uptake of scientific resources beyond academic circles. In this perspective, reflections on next-generation indicators are necessarily prospective and point to the need for indicator systems capable of integrating quantitative and qualitative dimensions, considering the pathways through which Research Infrastructures may contribute to societal outcomes, and reflecting core Open Science values such as openness, interoperability, and inclusiveness (ESFRI Working Group on Monitoring, 2019).

To clarify the conceptual framework Fig. 15.2 illustrates the distinction between KPIs (communication performance), KEIs (early engagement with potential users), situating current indicators within a pre-operational phase of the Research Infrastructure; while Action Research represents the only context in which design-oriented internal impacts can currently be observed.

The KPI and KEI framework adopted within FOSSR was conceived as evolvable. When stable conditions of use are in place, the same framework may be progressively extended to capture engagement with services and patterns of actual use, allowing for a clearer distinction between potential and established users. In this sense, current indicators contribute to documenting the early consolidation of a community that is already familiar with FOSSR and may therefore be more readily oriented towards active use of the infrastructure in its next phase.

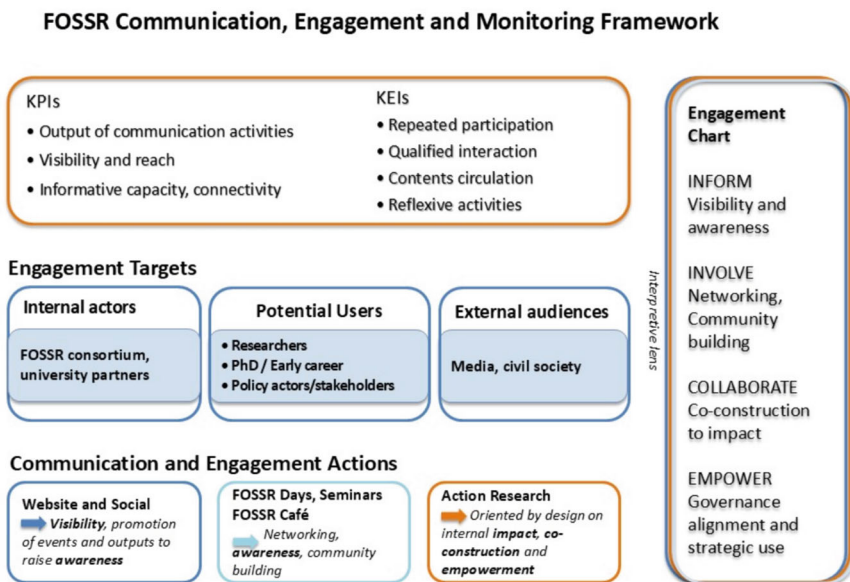


Fig. 15.2 Conceptual scheme for monitoring communication performance and early engagement in FOSSR. *Source:* CNR-IRCrES elaboration

15.5.1 Preliminary Results from Communication and Early Engagement Indicators

This section provides an overview of the performance of FOSSR communication and outreach activities and of early engagement dynamics involving potential users. While individual metrics are discussed in detail below, this section introduces the overall logic through which the results should be read and interpreted (Table 15.1).

The results are organised to reflect the progression from the ability of the project to reach relevant audiences, then to sustain interaction over time, and finally to mobilise a community of potential users through differentiated formats and channels.

Quantitative indicators first describe the scale and continuity of communication activities and their reach across target audiences. They are followed by engagement-oriented indicators that shed light on participation patterns, recurrence of involvement, and interaction within more participatory formats, such as Action Research activities.

Table 15.1 Main indicators on community building and stakeholder engagement in FOSSR

Indicator category	Indicator	What it captures	Target
KPI	Communication and training events organised	Volume and continuity of communication activities	Potential users; stakeholders
KPI	Participants in events and sessions	Reach of communication and outreach actions	Potential users
KPI	Website access, downloads, and social media interactions	Visibility and circulation of project content	External audiences; potential users
KPI	Dissemination activities by FOSSR members	Effort in scientific and policy dissemination	Scientific and policy audiences
KEI	Recurrence of participation across activities	Continuity of interest over time	Potential users
KEI	Participation in interactive formats	Transition from exposure to active involvement	Selected potential users
KEI	Feedback and co-design contributions	Reflexive interaction influencing service design	Potential users; project team

15.5.1.1 Overview of the Main Performance Results

As of October 2025, 30 months from the start of the project, communication activities display a steady and cumulative growth across digital channels, events, and policy-oriented outputs, reflecting the consolidation of a recognisable presence within emerging community of potential users.

The project website, comprising 25 active pages, recorded over 22,000 unique visitors by October 2025 with an average annual growth rate exceeding 60%. Over time, the most visited sections shifted from general informational pages (e.g. Home, What We Do) towards event-related and community-oriented content, in line with the progressive movement along the engagement trajectory described earlier (Table 15.2).

Social media activity followed a comparable pattern. Between 2023 and October 2025, almost 100 posts and audio-visual contents were published with a regular frequency of one to two updates per week. The combined number of followers across platforms reached approximately 1750, corresponding to an annual organic

Table 15.2 Growth of FOSSR Communication (2023–2025)

Indicator	2023	2024	2025 (Oct.)	Notes
Unique website visitors	≈8000	≈17,000	≈22,000	Continuous increase, with peaks corresponding to major events (e.g., FOSSR days)
Most visited pages	Home, what we do, news	News /Events, FOSSR days	Community building	Increasing interest in participatory and community-related content
Social media posts	45	68	72 (cumulative)	Consistent publishing rate (1-2 posts per week)
Total followers (fb + linkedin + ig)	≈450	≈1100	≈1750	Annual organic growth exceeding 60%

Source: CNR-IRCrES elaborations from website and social media statistics

growth rate above 60%. As discussed in relation to KPI indicators, these figures are interpreted as signals of sustained attention and content circulation, rather than as evidence of deep engagement.

Communication performance is also reflected in the scale and continuity of project events. By October 2025, a total of 21 events had been organised, involving 1447 participants overall. These events, ranging from conferences and policy-oriented sessions to online seminars and capacity-building initiatives, represent the main arenas in which early engagement with potential users was activated, in line with the objectives outlined in the engagement framework.

The circulation of research outputs further complements this picture. By October 2025, 33 materials were uploaded to Zenodo, accounting for nearly 5000 downloads, while policy briefs were downloaded 382 times. Together with the growth of the mailing list to 743 contacts, these indicators document the capacity of communication activities to sustain information flows and maintain regular contact with academic and institutional audiences (Table 15.3).

Overall, these results provide a coherent overview of communication performance consistent with the documenting of the conditions under which a community of potential users has been progressively developed, informed, mobilised, and stabilised, thereby laying the groundwork for future engagement once integrated services become fully operational.

Table 15.3 Key Engagement Indicators (2023–2025)

Dimension	Indicator	October 2025
Events and participation	Number of events organised	21
	Number of participants at events	1447
Publications and materials	Materials uploaded on Zenodo	33
	Materials downloaded from Zenodo	4983
Policy-oriented outputs	Policy briefs downloaded	382
Mailing and contacts	Mailing list contacts	743

Source: CNR-IRCrES elaborations from database of events and participants

15.5.1.2 Overview of FOSSR Community, Events Participation and Engagement Traces

Participation data highlight the central role of events as drivers of early engagement within FOSSR. The predominance of online participation reflects the pre-operational phase and a strategy aimed at maximising accessibility and reach (KPI).

The following analyses are based on a database originally comprising 975 records (registered participants to all events organized during the project). The dataset was systematically cleaned, missing information was completed where possible, and organisational affiliations and job positions were harmonised through a recoding process. The resulting core dataset of 899 validated contacts was subsequently analysed to explore the composition and characteristics of the FOSSR community developed to date, starting from the participants involved in the project kick-off meeting held in November 2022.

The distribution shown by Fig. 15.3 highlights the central interest by universities and public research organisations, with researchers and doctoral candidates representing the largest groups across all organisational types.

Gender distribution appears relatively balanced across positions, with a slight prevalence of female participation, particularly among early-career profiles (Fig. 15.4).

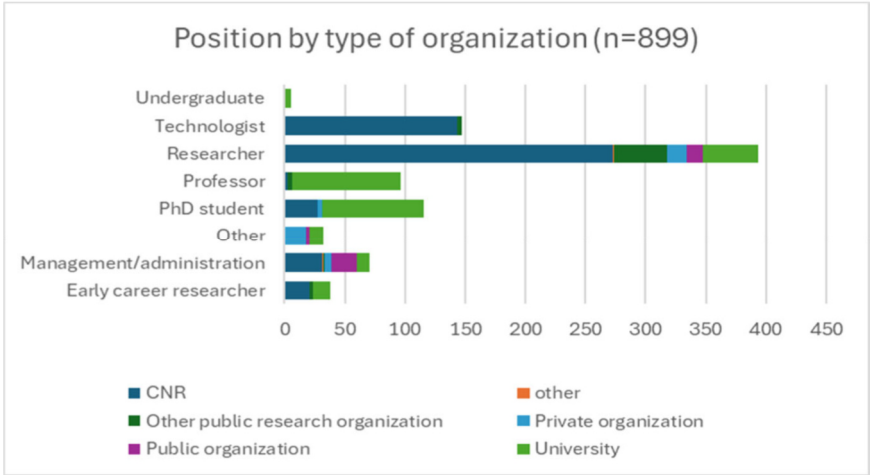


Fig. 15.3 Position by type of organization. Source: CNR-IRCrES elaborations from database of events and participants

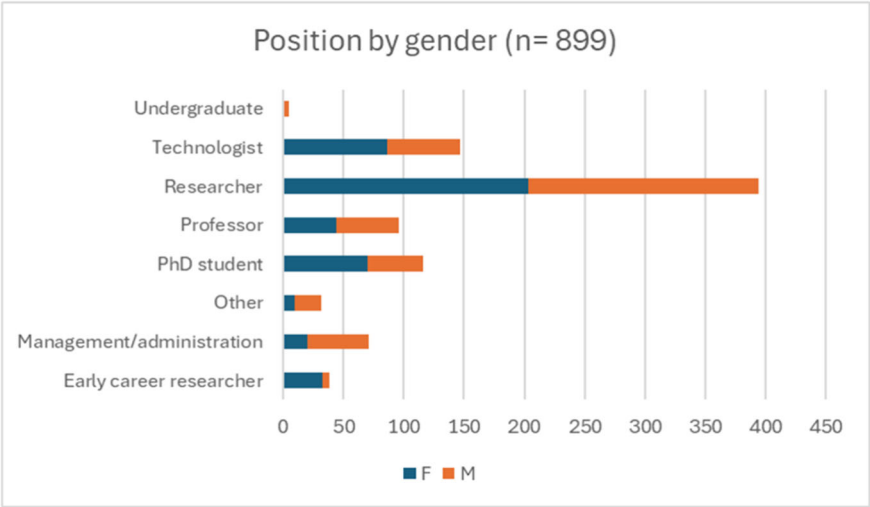


Fig. 15.4 Position by gender. Source: CNR-IRCrES elaborations from database of events and participants

Networking activities³ show the highest participation levels (Fig. 15.5), indicating strong demand for capacity building and peer interaction and acting as

³ Event categories were derived through the aggregation of different activity formats into broader analytical categories. In particular, Networking encompasses general conferences, FOSSR cafés, and the kick-off meeting; Dissemination covers seminars, webinars, and service demonstration sessions; and Policy dialogue refers to dedicated sessions with policymakers. Participation counts

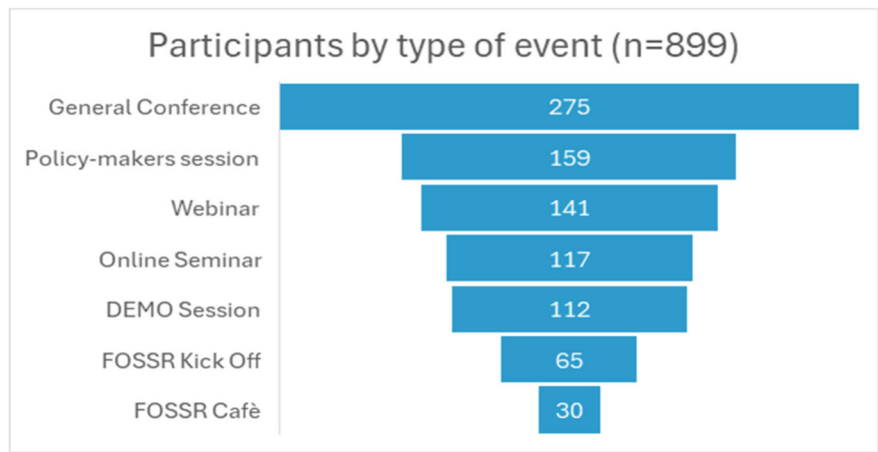


Fig. 15.5 Participants by type of event. Source: CNR-IRCrES elaborations from database of events and participants

early signals of sustained engagement (KEI). Participation in seminars/webinars and policy dialogue further suggests the ability to address both scientific and institutional audiences through differentiated formats.

Gender participation remains broadly balanced across event categories, suggesting inclusiveness in the design of communication and engagement formats (Fig. 15.6).

Early-career researchers and PhD candidates show the highest levels of participation (Fig. 15.7), indicating strong interest in capacity-building and community-oriented activities.

Among 481 unique participants, 175 individuals took part in more than one project activity, resulting in a participation redundancy rate of 36.4%. This level of recurrence provides evidence of sustained engagement over time and suggests the progressive consolidation of a core community actively involved in FOSSR communication and participatory initiatives.

Finally, feedback questionnaires collected from 110 participants indicate a very high level of satisfaction with the FOSSR events. The average overall rating is 4.6 out of 5, with most respondents assigning the highest scores (5 or 4). Moreover, 87 participants explicitly stated that the events met their expectations, while only two negative responses were recorded. Qualitative comments highlight, in particular, the relevance of the topics and the quality of the organisation, while suggestions for improvement mainly concerned the duration of some sessions.

consider registered participants for Networking, Dissemination, and Policy dialogue events, while for Training activities only selected participants were included, in line with the admission procedures foreseen for these formats.

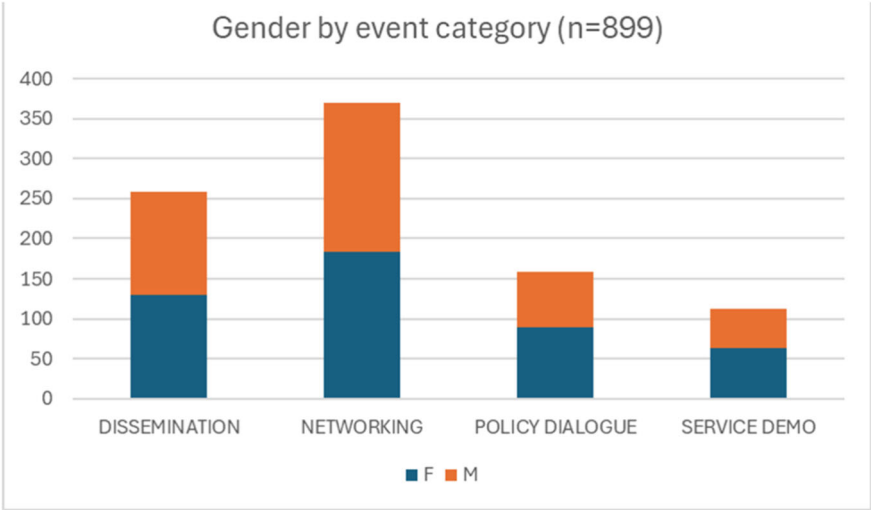


Fig. 15.6 Gender distribution by event category. *Source:* CNR-IRCrES elaborations from database of events and participants

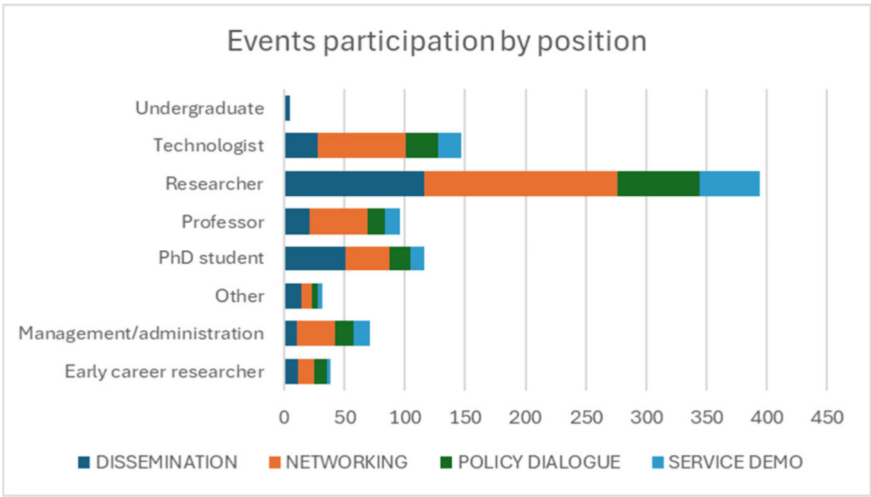


Fig. 15.7 Events participation by position. *Source:* CNR-IRCrES elaborations from database of events and participants

Overall, the data align with the progressive engagement framework discussed in the chapter, linking visibility, involvement, and early forms of collaboration.

15.6 Conclusions

The FOSSR communication experience illustrates how a research infrastructure can construct and consolidate its public identity through a balanced interplay of institutionalality and openness, informational rigor and community-oriented practices. The analysis presented in this chapter shows how website, social media channels, and participatory event formats operate as an integrated communicative ecosystem: the first ensures informational continuity and transparency, the second enhances visibility and accessibility, and the third fosters dialogue, interaction, and awareness.

Beyond describing communication tools and activities, the chapter highlights their functional role in supporting the use, uptake, and development of infrastructural services. Communication within FOSSR thus emerges as a mechanism that connects access to resources, capacity building, and feedback processes, rather than being limited to dissemination for visibility purposes.

In perspective, the communication strategy aims to consolidate the FOSSR community, broaden participation, and promote the transition from passive user to active member—that is, a researcher who not only accesses the platform but also contributes to events, governance, and service co-design.

The measurable outcomes—growth in audience size, increased participation, and improved quality of interaction—confirm that communication within FOSSR functions not as a secondary dissemination activity but as a constitutive dimension of open research.

From a policy and decision-making perspective, the FOSSR experience suggests that communication and engagement strategies can provide significant signals for understanding early patterns of adoption, user needs, and relational dynamics within Research Infrastructures. The use of KPIs and early engagement indicators offers decision makers and infrastructure managers a monitoring framework to inform strategic choices, resource allocation, and the design of participatory mechanisms, particularly in pre-operational and transitional phases.

The various follow-ups to the Action Research actions further demonstrated the importance of reflexive and beneficiary-oriented approaches to reassess objectives, recalibrate activities, and strengthen internal learning processes. Feedback emerging from these participatory settings also highlighted the relevance of social research competences as a key asset for initiatives aimed at involving heterogeneous stakeholders and generating value at multiple levels.

Looking forward, sustaining community commitment beyond the project lifetime will require the gradual institutionalization of engagement mechanisms and governance practices to support long-term contributions, ownership, and shared accountability. Future developments may include the refinement of engagement indicators, the integration of communication data into broader evaluation frameworks, and the consolidation of participatory spaces as stable components of Research Infrastructure governance.

Appendix

List of events organised in the frame of the Communication Work Package (Table 15.4):

Table 15.4 List of organised events (2022-2026)

Event	Date	Title	People involved
Kick off meeting	25/11/2022	FOSSR—fostering Open Science in social science research	8 speakers, 1 moderator
Online Seminar	11/18/2023	“Building the Italian online probability panel”	2 speakers, 7 panelists, 1 moderator
Online Seminar	01/23/2024	“Agent-based modeling: Contributions for the social sciences and FOSSR”	2 speakers, 6 panelists, 1 moderator
Online Seminar	04/29/2024	“Open cloud and knowledge integration for empowering social sciences”	2 speakers, 7 panelists, 1 moderator
Webinar	02/19/2025	“The FOSSR policy learning platform: A tutorial”	3 speakers, 2 discussants
Webinar	05/05/2025	“European online probability panels (EOPPs): Opportunities for social research” among OPPs	12 speakers/panelist
Polymakers session	16/10/2023	Data driven policy learning: The role of FOSSR	1 speaker, 2 discussants, 1 moderator
Polymakers session	09/10/2024	Text mining in and for policy-making within FOSSR	2 speakers, 2 discussants, 1 moderator
Polymakers session	04/02/2026	High-quality, high-frequency individual data production in Italy: Innovation introduced by FOSSR	4 speakers, 3 discussants, 1 moderator
Demo session	11/10/2024	The FOSSR virtual research environment	3 speakers, 1 moderator
Demo session	06/02/2026	The FOSSR cloud infrastructure and marketplace	3 speakers, 1 moderator
General Conference	17/10/2023	FOSSR conference - fostering Open Science in social science research	13 speakers, 1 moderator
General Conference	10/10/2024	FOSSR general conference - fostering Open Science in social science research	15 speakers, 1 moderator
General Conference	05/02/2026	FOSSR final general conference - achievements, tools, and future perspectives for Open Science in the social sciences	52 speakers, 6 moderators, 2 discussants

References

- Assagioli, R. (1977). *L'atto di volontà*. Astrolabio.
- Bateson, G. (1993). *Verso Un'Ecologia della Mente*. Adelphi.
- Bekman, A. (2007). The methodology of evidential. In J. J. Boonstra & L. Caluwè (Eds.), *Intervening and changing: Looking for meaning in interactions* (pp. 29–45). Wiley.
- Bekman, A. (2010). *The horizontal leadership book*. Alertverlag.
- Benessia, A., Funtowicz, S., Guimarães Pereira, Á., Ravetz, J. R., Saltelli, A., Strand, R., & van der Sluijs, J. P. (2016). *The rightful place of science: Science on the verge*. Consortium for Science, Policy and Outcomes at Arizona State University.
- Bodmer, W. F. (1985). *The Public Understanding of Science: Report of a Royal Society Ad Hoc Group Endorsed by the Council of the Royal Society*.
- Campbell, D., Elgin, D., Harman, W., Hastings, A., Markley, O., Matson, F., O'Regan, B., & Schneid, L. (1982). *Changing image of the man*. Stanford Research Institute, Pergamon Press.
- Ceruti, M. (2017). *Il tempo della complessità*. Raffaello Cortina.
- Damasio, A. (1995). *L'errore di Cartesio. Emozione, ragione e cervello umano*. Milano: Adelphi.
- Davies, S. R., Horst, M. (2016). The changing nature of science: Academic capitalism, Entrepreneurial Universities and PR. In *Science communication*. London: Palgrave Macmillan. https://doi.org/10.1057/978-1-137-50366-4_5
- Davies, S. R., Halpern, M., Horst, M., Kirby, D., & Lewenstein, B. (2019). Science stories as culture: experience, identity, narrative and emotion in public communication of science. *JCOM*, 18(05), A01. <https://doi.org/10.22323/2.18050201>
- Doidge, N. (2007). *The brain who change itself*. New York: Penguin book
- ESFRI Working Group on Monitoring. (2019). *Monitoring of research infrastructures performance: A report from the ESFRI Working Group on Monitoring*. European Strategy Forum on Research Infrastructures (ESFRI). <https://www.esfri.eu>
- Fabre, R., Egret, D., Schöpfel, J., & Azeroual, O. (2021). Evaluating the scientific impact of research infrastructures: The role of current research information systems. *Quantitative Science Studies*, 2(1), 42–64. https://doi.org/10.1162/qss_a_00111
- Fabrizio, S., Reale, E., & Spinello, A. O. (2023). Policy Brief, Issue 15/ Building a stronger community in STI studies for effective impact: the experience of RISIS (Versione 1). *Zenodo*. <https://doi.org/10.5281/zenodo.11276785>
- French, W. L., & Bell, C. H. (1998). *Organisation development: Behavioral science. Intervention for organisational improvement*. Englewood Cliff.
- Funtowicz, S., & Ravetz, J. (1993). Science for the post-normal age. *Futures*, 25(7), 739–755. [https://doi.org/10.1016/0016-3287\(93\)90022-L](https://doi.org/10.1016/0016-3287(93)90022-L)
- Gibbons, M., Limoges, C., Nowotny, H., Schwartzman, S., Scott, P., & Trow, M. (1994). *The new production of knowledge: The dynamics of science and research in contemporary societies*. SAGE.
- Hecker, S., Haklay, M., Bowser, A., Makuch, Z., Vogel, J., & Bonn, A. (2018). *Citizen science: Innovation in Open Science, society and policy*. UCL Press. <https://doi.org/10.14324/111.9781787352339>
- Hughes, T. P. (1987). The evolution of large technological systems. In W. E. Bijker, T. P. Hughes, & T. Pinch (Eds.), *The social construction of technological systems* (pp. 51–82). MIT Press.
- Irwin, A. (2015). Citizen science and scientific citizenship: Same words, different meanings? In B. Schiele, J. L. Marec, & P. Baranger (Eds.), *Science communication today* (pp. 29–38). Presses Universitaires de Nancy.
- Jasanoff, S. (2003). Technologies of humility: Citizen participation in governing science. *Minerva*, 41(3), 223–244. <https://doi.org/10.1023/A:1025557512320>
- Jasanoff, S. (2004a). Science and citizenship: A new synergy. *Science and Public Policy*, 31(2), 90–94. <https://doi.org/10.3152/147154304781780064>
- Jasanoff, S. (2004b). *States of knowledge: The co-production of science and the social order*. Routledge.

- Jasanoff, S. (2005). *Designs on nature: Science and democracy in Europe and the United States*. Princeton University Press.
- Kelly, G. (2004). *La psicologia dei costrutti personali*. Raffaello Cortina.
- Kolar, J., Ahlgren, P., & Sørensen, M. P. (2019). Towards key performance indicators of research infrastructures. *arXiv preprint*. <https://arxiv.org/abs/1910.00304>
- Lefika, P. T., & Mearns, M. A. (2015). Adding knowledge cafés to the repertoire of knowledge sharing techniques. *International Journal of Information Management*, 35(1), 26–32. <https://doi.org/10.1016/J.IJINFORMGT.2014.09.005>
- Lewin, K. (1972). *I conflitti sociali*. FrancoAngeli.
- Lievegoed, B. C. J. (1973). *Developing organisation*. Tavistock Publications.
- Lievegoed, B. C. J. (1979). *Phases, crisis and development in the individual*. Rudolf Steiner Press.
- Luhmann, T. (2001). *Sistemi sociali. Fondamenti di una teoria generale*. Il Mulino.
- Maslow, A. (1954). *Motivation and personality*. Harper, Row.
- Mayernik, M. S., Hart, D. L., Maull, K. E., & Weber, N. M. (2017). Assessing and tracing the outcomes and impact of research infrastructures. *Journal of the Association for Information Science and Technology*, 68, 1341–1359. <https://doi.org/10.1002/asi.23721>
- Mezrow, J. (2003). *Apprendimento e trasformazione*. Milano: Raffaello Cortina.
- Miller, J. D. (2004). Public understanding of, and attitudes toward, scientific research: What we know and what we need to know. *Public Understanding of Science*, 13(3), 273–294. <https://doi.org/10.1177/0963662504044908>
- Molas-Gallart, J., & Tang, P. (2011). Tracing “productive interactions” to identify social impacts: An example from the social sciences. *Research Evaluation*, 20(3), 219–226. <https://doi.org/10.3152/095820211X12941371876706>
- Morin, E. (1993). *Introduzione al pensiero complesso*. Sperling & Kupfer.
- Morin, E. (2002). *Il metodo 5: L'identità umana*. Raffaello Cortina.
- Mounier, E. (1955). *Rivoluzione personalista e comunitaria*. Edizioni di Comunità.
- Novara, F. (2008). Si può guarire l'organizzazione? Esperienze professionali, proposte metodologiche e teoriche, rivista *Psicologia Sociale* 1/2008. Il Mulino.
- Novara, F. (2010). Le ragioni del progetto. In E. Rizziato (Ed.), *Etica dello sviluppo organizzativo e senso del lavoro: verso un approccio europeo*. FrancoAngeli.
- Poli, E. (2014). *Anatomia della guarigione*. Anima Edizioni.
- Powell, M. (2010). Science Café. In *Encyclopedia of science and technology communication* (pp. 689–690). SAGE Publications. <https://doi.org/10.4135/9781412959216>
- Reale, E., & Fabrizio, S. (2024). *FOSSR Deliverable 9.1 - Dissemination and communication plan (Version 1)*. <https://doi.org/10.5281/zenodo.13970700>.
- Reason, P., & Bradbury, H. (2001, 2008, 2015). *Handbook of action research: Participative inquiry and practice*. Sage.
- Rizziato, E. (2010). *Etica dello sviluppo organizzativo e senso del lavoro. Verso la definizione di un approccio europeo*. FrancoAngeli.
- Rizziato, E. (2014). *La ricerca-azione: un approccio per comprendere ed interagire con i processi delle dinamiche socio-economiche*. Working Paper 26/2014. CERIS-CNR. http://www.ceris.cnr.it/ceris/workingpaper/2014/WP_26_RIZZATO.pdf
- Rizziato, E. (2017). *Horizontal organization and leadership: A generative approach for an ethic development in complex systems book of proceedings international conference*. Euromed. <https://emrbi.org/wp-content/uploads/2020/09/EuroMed-10-2017.pdf>
- Rizziato, E. (2020). *Verso un umanesimo della vita organizzativa: generare sviluppo nella complessità con la leadership orizzontale*. FrancoAngeli, collana AIF.
- Rizziato, E. (2022a). Contributi di Nemmo, E. e Vetrano, G. *Lo sviluppo locale: un approccio sistemico e generativo con la leadership orizzontale*. Quaderni IRCrES n.15. CNR-IRCRES. <https://doi.org/10.23760/2499-6661.2022.15>
- Rizziato, E. (2022b). *Leadership orizzontale e organizzazioni integrate: rendere costruttiva la complessità in Sviluppo & Organizzazione, Sezione accreditata AIDEA (Accademia Italiana di economia aziendale)*, n.304 Marzo/Aprile 2022. Este ISSN 0391-7045.

- Rizziato, E. (2024). *Toward a humanism in organizations. Horizontal leadership and consciousness*. Roma: CNR Edizioni. <http://doi.org/10.23760/TowardsHumanism-2024>. ISBN (ed. digitale) 978 88 8080 628 8
- Rizzolatti, G., & Sinigaglia, C. (2006). *So quel che fai. Il cervello che agisce e i neuroni specchio*. Raffaello Cortina.
- Rohen, J. W. (2007). *Functional morphology: The dynamic wholeness of the human organism*. Adonis Press.
- Scardicchio, A. C. (2019). *Complessità delle organizzazioni, complessità della formazione. Report di studio qualitativo ed analisi ermeneutica del Modello TRASE - IRCRES/CNR-IMO. Working Paper 1/2019*. IRCrES-CNR.
- Senge, P. (1990). The fifth discipline. In *The art and practice of the learning organization*. New York: Doubleday Currency.
- Siegel, D. J. (2001). *La mente relazionale. Neurobiologia dell'esperienza interpersonale*. Raffaello Cortina.
- Siegel, J. (2010). *Mindsight*. Milano: Raffaello Cortina.
- Tomasello, M. (2005). *Le origini culturali della cognizione umana*. Il Mulino.
- Trench, B. (2008). Towards an analytical framework of science communication models. In *Communicating science in social contexts* (pp. 119–135). Springer. https://doi.org/10.1007/978-1-4020-8598-7_7
- Varela, F. J., Thompson, E., & Rosch, E. (1991). *The embodied mind: Cognitive science and human experience*. MIT Press.
- Wynne, B. (1992). Misunderstood misunderstanding: Social identities and public uptake of science. *Public Understanding of Science*, 1(3), 281–304. <https://doi.org/10.1088/0963-6625/1/3/004>
- Wynne, B., Felt, U., Callon, M., Gonçalves, M., Jasanoff, S., Jepsen, M., Joly, P.-B., Konopasek, Z., May, S., Neubauer, C., Rip, A., Siune, K., Stirling, A., & Tallacchini, M. (2007). *Taking European Knowledge Society Seriously. Report of the Expert Group on Science and Governance to the Science, Economy and Society Directorate, Directorate-General for Research, European Commission*.
- Ziman, J. (2000). *Real science: What it is and what it means*. Cambridge University Press.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License (<http://creativecommons.org/licenses/by-nc-nd/4.0/>), which permits any noncommercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if you modified the licensed material. You do not have permission under this license to share adapted material derived from this chapter or parts of it.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

