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SUPER MoRRI – Scientific understanding and provision of an enhanced and robust monitoring system for RRI

D4.2 RRI and benefits beyond Europe

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List of Acronyms and Abbreviations

Acronyms/Abbreviations	Definition
CCN	Country Correspondent Network
HEIs	Higher Education Institutions
ISP	International Satellite Partners
RFOs	Research Founding Organizations
RPOs	Research Performing Organizations
RRI	Responsible Research and Innovation



Executive Summary

The “Scientific understanding and provision of an enhanced and robust monitoring system for RRI” (SUPER MoRRI) project contributes to the monitoring Responsible Research and Innovation (RRI). Over the duration of the project, several actions to better understand the inclusion of RRI and its benefits beyond Europe have been carried out.

The SUPER MoRRI project's Work Package 4 (WP4) focuses on the international and global dimensions of promoting responsibility in research and innovation (RRI). It aims to facilitate mutual learning about RRI activities in different countries and regions. To achieve this, a network of ten International Satellite Partners (ISPs) from various non-European countries and regions was established. These ISPs serve as a global sounding board for SUPER MoRRI, representing and articulating important perspectives from outside Europe.

This deliverable summarizes the significant contributions made by the ISPs in collecting data for SUPER MoRRI under the task of "Global involvement in data collection" (task 4.3). ISPs from Australia, Brazil, China, and the USA participated in data collection for WP2, following harmonized procedures with the corresponding network in WP2. This harmonization allows for comparisons and partial benchmarking of RRI practices between European and non-European contexts.



1. INTRODUCTION

1.1. Scope and Objectives of the Deliverable

The "Scientific understanding and provision of an enhanced and robust monitoring system for RRI" (SUPER MoRRI) project contributes to the monitoring of Responsible Research and Innovation (RRI). The SUPER MoRRI monitoring framework utilizes existing resources and data while also generating new information through primary data collection as part of the project. It employs a combination of qualitative and quantitative approaches, covering various levels of research and innovation systems, including individuals, organizations, regions, and countries. By involving stakeholders in co-creation processes, the project aimed to ensure that the proposed indicators are relevant, credibly contextualized, and responsibly communicated.

Within the project's Work Package 2 (WP2), two large scale studies were conducted to gather primary data at the organizational level. These studies focused on research-performing organizations (RPOs) and research-funding organizations (RFOs). Both studies encompassed the EU-27, Norway, and the UK, and included an international benchmarking component.

The international benchmarking was facilitated by the establishment of a network of International Satellite Partners (ISPs) administered by Universitat Pompeu Fabra (UPF) as part of WP4. This report (Deliverable D4.2) presents a summary of the results obtained from data collected by selected members of the International Satellite Partners (ISPs), including comparisons to the EU results for both studies.

1.2. Relation to Other Tasks and Deliverables

The entire WP4 of SUPER MoRRI project is dedicated to the international dimension, with the aim of promoting responsibility in research and innovation globally, enabling mutual learning about RRI and RRI-like activities in other countries and regions.

The internationalisation activities of SUPER MoRRI project began with the formal constitution of a network of ten International Satellite Partners (ISP) from different countries and regions outside Europe (see Table 1). This network acts as a global sounding board for SUPER MoRRI and represents and articulates important non-European perspectives.

The ISP's network is composed of key individuals working in organizations outside Europe with experience and deep insights into issues of responsibility in research and innovation. UPF, with the help of the rest of WP leaders, nominated different individuals and the network was formally constituted on June 2019 based on criteria ensuring diversity in terms of geographical location, stakeholder group, gender and RRI profile experiences (Task 4.1).

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Asako Okamura	National Graduate Institute for Policy Studies	Japan
Carmelo Polino	Consejo Nacional de Investigaciones Científicas y Técnicas	Argentina
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Table 1 Members of the SUPER MoRRI international satellite network

This deliverable summarizes the main contributions of the International Satellite Partners network in the collection of SUPER MoRRI data carried out under task 4.3 “Global involvement in data collection”. ISPs from Australia, Brazil, China and the USA contributed to the WP2 data collection. These ISPs collected national data based on procedures harmonized with those of the correspondent network in WP2. This allows comparisons and, at least partial, benchmarking of RRI (or RRI-like) practices in European and non-European contexts.

Complete data and information from the RPO and RFO studies are presented in Chapters 6 and 7 of Deliverable D2.3 “Second Responsible Research and Innovation Monitoring Report”¹. In order for the reader to have a complete understanding of all the data collected under WP2, we also recommend a review of these chapters.

1.3. Deliverable Structure

This deliverable is structured as follows: The Executive Summary briefly presents the purpose and contents of this report. Chapter 1 introduces the scope and objectives of the deliverable, its relation to other tasks within the project, and its structure. Chapter 2 presents data and indicators from the international aspects of the RPO study and Chapter 3 covers the international aspects of the RFO study.

¹ Available at: <https://super-morri.eu/download/153/findings-and-deliverables/5454/d-2-3-second-responsible-research-and-innovation-monitoring-report.pdf>



2. INTERNATIONAL BENCHMARKING OF RRI IN RESEARCH-PERFORMING ORGANIZATIONS

Chapter 6 of Deliverable D2.3 provides a comprehensive overview of the SUPER MoRRI CCN-RPO study, which examined the institutional policies, strategies, and structural support for Responsible Research and Innovation (RRI) in 122 European universities across the EU27 countries, Norway, and the UK. The study focused on analyzing the publicly available documents and strategies published on the universities' official websites to gain insights into their commitment to RRI. Additionally, the study investigated the presence of dedicated organizational units responsible for implementing RRI objectives. The SUPER MoRRI Country Correspondent Network ensured that the study could access and interpret website content and documentation in local languages. Furthermore, an international benchmarking exercise was conducted in seven universities located in Australia, Brazil, and the USA through the SUPER MoRRI network of International Satellite Partners (ISP).

In this section we present a summary of the main results of this study, then we focus on the international dimension and finally we compare the EU and international results.

2.1. Summary of the main results of the RPO study carried out in WP2

The study results presented an assessment of the inclusion of five key areas of responsible research and innovation, namely open science, public engagement, the third mission, research integrity and ethics, and gender equality, within the policies and strategies of Higher Education Institutions (HEIs). The degree to which each area was prioritized by HEIs was also evaluated. Moreover, an examination of whether the combination of policy, strategy, and support structures reflected a merely aspirational or actually a practical approach was conducted. Additionally, the report provided a descriptive summary of the range of initiatives emerging from the sample of HEIs for each of the five RRI areas.

The findings indicate that European HEIs generally exhibit strong support for RRI in their policies and strategies. However, individual HEIs tend to focus on specific RRI areas, rather than covering all of them comprehensively. The study, based on a stratified sample of European HEIs, highlights the heterogeneous nature of institutional action towards RRI across universities. Consequently, the study emphasizes the existence of ample opportunities to further disseminate RRI policies, strategies, and supporting structures within the European university community. The degree of prioritization of RRI-related policies and strategies varies significantly, revealing an uneven commitment to operationalize different RRI areas.

2.2. RPO international benchmarking overview

In this section, we provide a brief description of how international Higher Education Institutions (HEIs) in Australia (n=3), Brazil (n=2), and the USA (n=2) support Responsible Research and Innovation (RRI) in the key areas addressed by the study.



Firstly, all the key RRI areas in the context of research and innovation studied in relation to the European HEIs are also mentioned in the policy and strategy documents of the seven international HEIs (Table 2).

	Gender Equality	Open Science	Public Engagement	Third Mission	Research Ethics and Integrity
EU HEIs (n122)					
Policy	78	84	66	76	99
Strategy	79	59	76	111	79
Both	62	50	49	40	68
ISP HEIs (n=7)					
Policy	7	7	7	7	7
Strategy	5	3	5	5	5
Both	5	3	5	5	5

Table 2 International benchmarking of Higher Educational Institutions

Secondly, across these seven organizations, the International Satellite Partners (ISPs) rated the RRI areas as strategically important to the international HEIs, with a medium to high level of importance. These universities were also rated as practically oriented in their strategic approach to these areas.

Thirdly, the overall impression regarding the structures and actions characterizing the international HEIs is that similar RRI work is being carried out in both European and international contexts. HEIs in Australia and the USA describe several detailed initiatives across the RRI areas, while the Brazilian HEIs have less publicly available information on their websites, highlighting similar aims, structures, and actions but with less detail.

The remainder of this section describes notable international benchmarking highlights for each of the RRI areas. In the area of Open Science, the international HEIs aim to make research accessible to as many people as possible. They utilize institutional repositories and support open science communities (OSCs) that promote Open Access and other dimensions of Open Science. For instance, the Massachusetts Institute of Technology (MIT) in the USA has a policy granting the institution non-exclusive permission to openly disseminate scholarly articles written by any MIT author.

Gender Equality in Australian HEIs is supported by a national Gender Equality (GE) plan, which includes Athena SWAN accreditation. Brazilian RPOs focus mainly on preventing harassment and promoting diversity, but also mention structures such as gender equality committees.

Regarding the areas of Third Mission and Research Ethics and Integrity, HEIs in Australia and the USA consistently demonstrate a high level of structure and detail in their strategies, policies, and actions,



which can be considered equivalent to integrating "best practices" from European HEIs into a coordinated vision across the organization. Brazilian HEIs also address Research Ethics and Integrity in their strategies but with less detail.

In terms of Public Engagement, all the international HEIs have similar strategies to those commonly seen in European RPOs.

An inspiring example can be found at Royal Melbourne Institute of technology (RMIT) in Australia, where the #ShapeRMIT campaigns have been developed and implemented to drive the strategic development of the university. These campaigns, run every five years, engage the public in shaping the university's future through various means such as online discussions, meetings, workshops, public events, presentations, and consultations. The grassroots movement approach implemented in urban environments aims to surprise, delight, inspire, and spark conversation. Unconventional tactics like street stencils, bill posters, digital conversations hubs, and street art contribute to engagement. The campaigns purposefully include citizens in RMIT's agenda-setting, decision-making, policy formation, and knowledge production processes.

2.3. Comparisons to the EU results

The international benchmarking exercise reaffirmed the European findings, demonstrating that HEIs in Australia and the US tend to have policies and strategies that encompass most, if not all, of the RRI areas, with detailed information and consistently high levels of prioritization. Furthermore, the benchmarking exercise revealed more advanced methods of involving staff, students, and stakeholders in framing RRI-related policies and strategies in some international HEIs.

The categorical data presented in this report represents the initial coding of the retrieved policy and strategy documents. A descriptive summary of the key elements found in these documents was provided. Ongoing work will continue to develop more detailed information and categorizations of the policy and strategy initiatives characterizing universities' institutional support for RRI. Visualizations focusing on the repertoires within each RRI area will provide a more comprehensive picture of how European universities support RRI and their aspirations for future initiatives.



3. INTERNATIONAL BENCHMARKING OF RESEARCH FUNDING ORGANISATIONS, RRI AND RESPONSIBLE RESEARCH CULTURES

Chapter 7 of Deliverable D2.3 serves as an introduction to the monitoring of RRI and related initiatives in research funding organizations (RFOs). The overall aim of the CCN-RFO study was to examine the mechanisms through which research funding organizations (RFOs) enhance responsibility in research and innovation. Mechanisms that were the focus of the study covered:

1. setting priorities for research funding;
2. designing funding instruments; and
3. conducting assessments of grant proposals (research and researchers).

The CCN-RFO study was not designed to assess or evaluate RFOs either individually or comparatively. The study sought to understand how RFOs work to improve responsibility in research practices and cultures. It also gathered inspiring examples and innovative approaches employed by RFOs.

The focus of data collection was qualitative, designed to build an understanding of the repertoires of policies and practices RFOs use, or are planning to introduce, in order to both shape their own actions and shape research culture to enhance responsibility.

In this section we present a summary of the main results of the RFO study as well as an overview of the international approach and, finally, we compare them.

3.1. Summary of the main results of the RFO study carried out in WP2

While RRI itself may not be prominent in the policies and practices of a majority of RFOs, there is notable support for RRI-related elements such as promoting gender equality, open science, and including societal stakeholders in funding processes to some extent.

The SUPER MoRRI CCN-RFO study has gathered substantial data, and ongoing efforts are underway to process and analyze this data. The chapter presents valuable insights into RFO policy portfolios that are relevant to supporting RRI and the involvement of stakeholders providing advice to RFOs. Additionally, an overview of the inclusion of RRI or RRI-related elements in funding instruments and assessment processes is provided. The chapter also illustrates the repertoires of responsible research assessment practices observed in RFOs.

These findings demonstrate that RFOs are actively promoting the transformation towards more responsible research cultures and practices through various significant avenues. The data highlights the opportunity for inter-organizational learning and further dissemination of these approaches among RFOs.



3.2. Comparisons to the EU results

Comparisons with international Research Funding Organizations (RFOs) have revealed numerous consistent features in research assessment procedures. Additionally, several innovative approaches have been observed. For instance, one international RFO has implemented unconscious bias training for all assessors, coupled with innovative written guidance that encourages assessment panel members to remain vigilant about the emergence of biases among their fellow panelists during interactive meetings involved in the assessment process.

Furthermore, the inclusion of community assessors in panels responsible for selecting grants aimed at working with vulnerable communities has been recognized as another noteworthy innovation. In such cases, the grant application includes a statement of community engagement and relevance, which becomes an integral part of the assessment process.

Another RFO has taken the initiative to involve technical stakeholders in the evaluation of all grant applications with anticipated market or other practical impacts. A relevance threshold is established, and the assessment focuses on determining whether the application is effectively aligned with the needs of end-users.

These examples illustrate the diverse and innovative approaches employed by international RFOs to enhance the fairness, inclusivity, and practical relevance of the research assessment process. By adopting such practices, RFOs are making valuable contributions to responsible research and innovation efforts worldwide.

Continuing work will yield additional insights into how RFOs exert responsibility pressure in their operations and their expectations of the research community. This includes further exploration of priority setting, as well as the repertoires of RRI and RRI-related elements incorporated in funding instruments and research and researcher assessments.



4. FINAL REFLECTIONS

In this section we reflect on both studies and discuss the main findings, the comparisons to the EU results, also taking into account the insights from our conversations with the International Satellite Partners reported on Deliverable D4.1.²

RRI is an emerging concept that extends beyond the boundaries of Europe, gaining recognition and adoption on a global scale. RRI represents a shift in the approach to research and innovation, emphasizing the ethical, inclusive, and sustainable dimensions of scientific advancement. Beyond Europe, countries and regions are increasingly acknowledging the importance of integrating RRI principles into their research and innovation systems. This inclusive and forward-thinking approach recognizes the need to engage stakeholders, consider societal impacts, address ethical dilemmas, and foster responsible and sustainable research practices. As RRI continues to gain traction outside of Europe, it holds the potential to shape the future of research and innovation, driving positive societal change and contributing to global challenges in a responsible and impactful manner.

Still, the discussions that we carried out in 2019 with SUPER MoRRI International Satellite Partners (ISPs) revealed that the term RRI is not widely used outside of Europe, particularly in Latin American countries. However, the principles and components of RRI are present in different contexts, and different though related terminologies, such as "social progress," "social innovation," or "inclusive innovation" are applied. The challenge lies in translating and adapting the concepts of RRI between different regions. The ISPs emphasized the importance of concepts such as open science, responsible innovation, public participation, and gender equality, but noted variations in how these elements are packaged and addressed (cf. Deliverable D4.1).

Among other objectives, the SUPER MoRRI project wants to address the pressing need to gain deeper insights into how RRI is integrated within Research Performing Organizations (RPOs) and Research Funding Organizations (RFOs) across the globe. Understanding the current practices and approaches of RPOs and RFOs in different regions is crucial to foster a transition towards a more global responsible science. By examining the inclusion of RRI principles, the project seeks to uncover good practices and to identify areas for improvement. This knowledge will enable the development of strategies and initiatives promoting a more inclusive, ethical, and socially responsible research ecosystem worldwide, paving the way for a truly global responsible science.

The international benchmarking exercise in the RPOs study reaffirms the findings in Europe, providing evidence that Higher Educational Institutions in Australia and the USA generally embrace comprehensive policies and strategies that cover most, if not all, aspects of RRI. These policies and strategies are characterized by detailed information and consistently high levels of prioritization. Moreover, the benchmarking exercise has unveiled more advanced methods of involving staff, students, and stakeholders in shaping RRI-related policies and strategies within select international HEIs.

As stated in Deliverable D4.1, ISPs suggested essential transformations in policy and practices to advance RRI beyond Europe including stable funding, research programs focused on responsible practices, and integrating RRI into PhD training. Strengthening communication and cooperation

² Available at: <https://super-morri.eu/download/153/findings-and-deliverables/5453/d-4-1-global-response-to-rri-monitoring.pdf>



among different stakeholders was emphasized, along with improving public participation in science and technology governance.

The inclusion of RRI principles in HEIs holds significant importance in shaping the future of research and innovation globally. HEIs are where future researchers acquire knowledge, skills, and values essential for scientific inquiry and critical thinking. By incorporating RRI principles into the curriculum of researchers, HEIs have the unique opportunity to instill a deep understanding of the ethical, social, and environmental implications of research. This ensures that future researchers not only possess technical expertise but also embrace a responsible and inclusive mindset. By integrating RRI principles into researchers' curriculum, HEIs play a crucial role in cultivating a new generation of scientists who are not only proficient in their respective fields but also conscious of the societal impact of their work. This transformative approach paves the way for a more responsible and sustainable scientific community that actively engages with diverse stakeholders, incorporates ethical considerations, and addresses societal challenges, ultimately leading to positive and impactful outcomes for the betterment of society as a whole.

The ISPs also highlighted the pivotal role Research Funding Organizations (RFOs) to shape the integration of RRI worldwide (see Deliverable D4.1). Through their funding calls and policies, RFOs have the power to influence and drive the adoption of RRI principles by researchers and institutions. By prioritizing RRI in their calls, RFOs signal the importance of responsible and inclusive research practices. These calls not only provide financial support but also set expectations for researchers to consider societal impacts, engage with diverse stakeholders, and address ethical considerations. RFOs have the ability to incentivize and reward research proposals that demonstrate a commitment to RRI, thereby creating a ripple effect across the research landscape. By actively promoting RRI in their funding calls, RFOs contribute to the establishment of a global research community that embraces responsible and sustainable practices, ultimately leading to research outcomes that address societal challenges.

The comparisons with international Research Funding Organizations (RFOs) showed in this deliverable have identified a range of consistent features in research assessment procedures, accompanied by several noteworthy and innovative approaches. One example mentioned above, was how one international RFO has effectively implemented unconscious bias training for all assessors. Another notable innovation is the inclusion of community assessors in panels responsible for selecting grants that target vulnerable communities. In such cases, the grant application incorporates a statement highlighting community engagement and relevance, integrating it as an integral component of the assessment process. Furthermore, a different RFO has taken the initiative to involve technical stakeholders in evaluating grant applications with anticipated practical outcomes or market potential. This involves establishing a relevance threshold and assessing the alignment of applications with the needs of end-users.

These examples aptly illustrate the diverse and innovative approaches implemented by international RFOs and HEIs, which effectively enhance the fairness, inclusivity, and practical relevance of research assessment processes. Through the adoption of such practices, RFOs and HEIs make valuable contributions to the global efforts of responsible research and innovation.

This study represents an exploratory effort to improve our knowledge about the implementation of RRI beyond Europe. While the findings provide valuable insights into the current state of RRI integration in non-European regions, it is important to acknowledge that this is just the beginning of our understanding. Further research is needed to delve deeper into the practices, challenges, and



opportunities associated with RRI in these regions. By expanding the scope of research, increasing the number of cases, and examining a wider range of contexts, cultures, and research systems, we can gain a more comprehensive understanding of how RRI is being implemented globally.

Overall, the findings included in this report and the SUPER MoRRI discussions with ISPs revealed the importance of adapting RRI concepts to different regions and cultural contexts, the potential benefits and challenges of RRI monitoring, the need for policy and practice transformations, and the priorities for responsible indicators and data collection. The ISPs emphasized the role of governance indicators and called for responsible use and understanding of indicators through stakeholder consultation and resources. However, despite RRI being a European based concept, it seems that the key areas of responsible research and innovation (open science, public engagement, the third mission, research integrity and ethics, and gender equality) are also included or taken into account in non-European settings.



SUPER MoRRI

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