

# NUCLEUS POLICY BRIEF NO. 1

*Deliverable 2.11*



**NUCLEUS**

# Facing the RRI Challenge: Obstacles and Opportunities of Implementing Responsible Research and Innovation

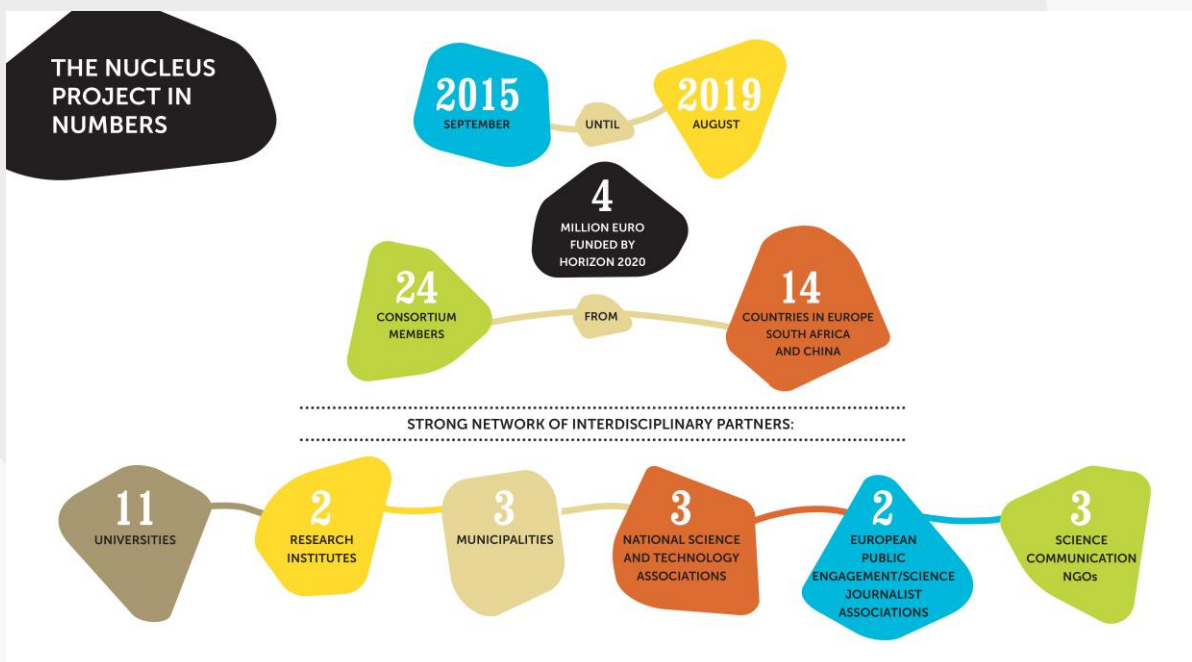
## INTRODUCTION

Productive relationships require open communication and respect for values, expectations and goals – and the relationship between research and society is no exception. Responsible Research and Innovation (RRI) is an approach to research that embraces these shared responsibilities throughout the entire process of knowledge and value creation. By engaging with stakeholders, research is expected to develop a better capacity for addressing the grand societal challenges in a more inclusive way.

Two years into the four-year project, NUCLEUS has developed its first recommendations related to stakeholder management and incentivisation, capacity-building, trans-cultural diversity and the relevance of policy in mainstreaming a paradigm as disruptively different as RRI. These first results are summarised in this first Policy Brief.

## PROJECT IDENTITY

NUCLEUS is a four-year project striving to develop a **New Understanding of Communication, Learning and Engagement in Universities and Scientific institutions**. The transdisciplinary consortium represents 24 partners from three continents, from a wide spectrum of professional experiences, academic backgrounds and disciplines.



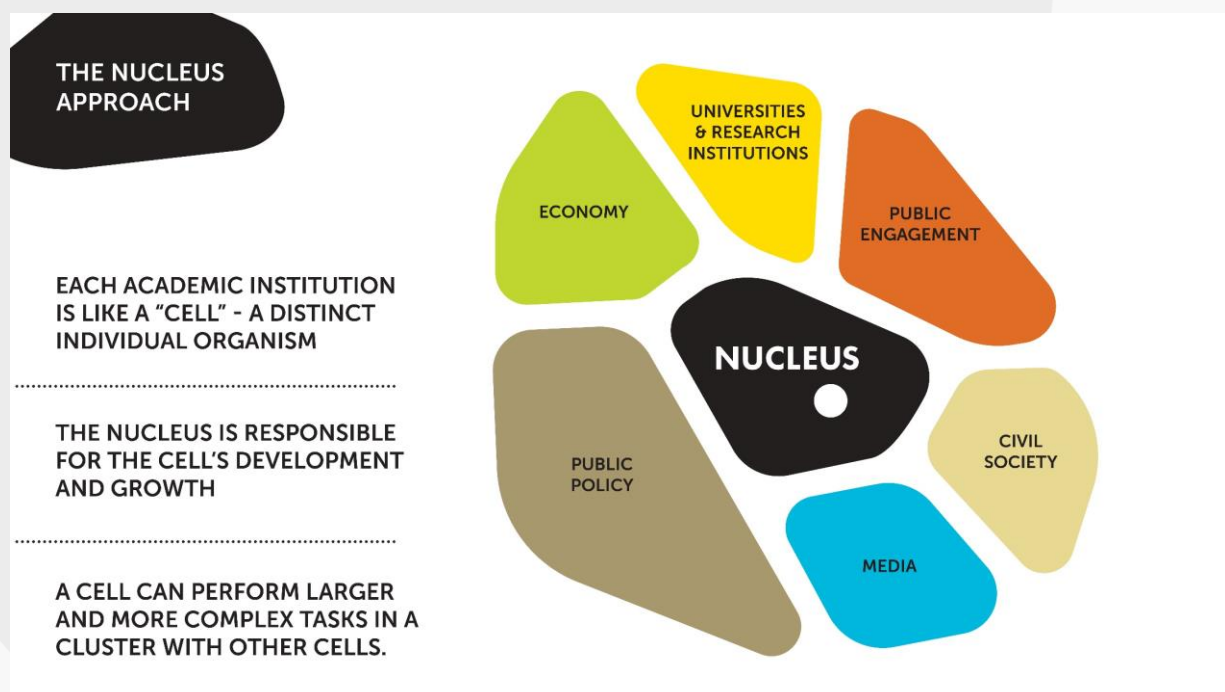
The main goal of the NUCLEUS project is to **analyse, design, and implement new ways to embed RRI into the governance and culture of universities and scientific institutions**. The project receives €4 million funding from the European Commission's Horizon 2020 programme. It is coordinated by Rhine-Waal University in Germany.

## CONCEPT AND APPROACH

At the heart of the NUCLEUS project is the idea that RRI functions in the same way as cells in an organism. **The university "cell" is embedded within a responsive cluster of others cells: Public Policy, Public Engagement, Civil Society, Media and Economy**. In this way the project aims to make the complex RRI approach accessible to stakeholders inside and outside academia, to policy makers and to society at large.

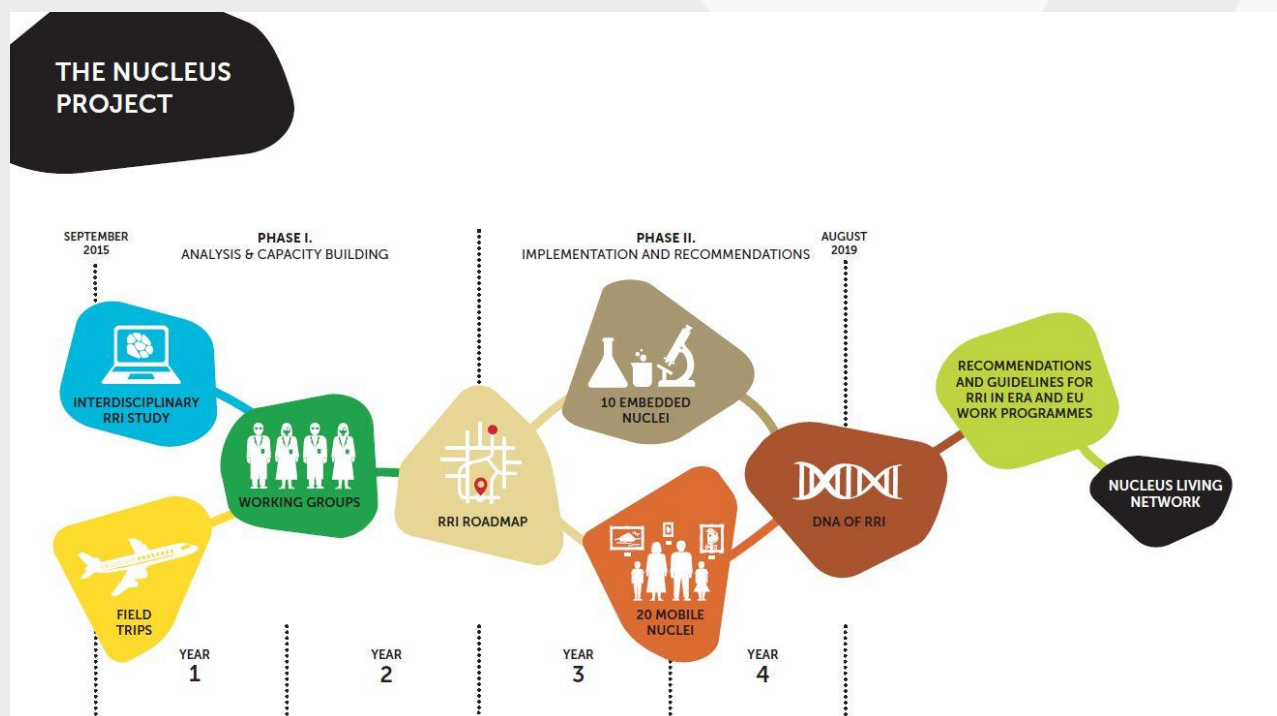
In the first two years of the project, the consortium members discovered and analysed the challenges and obstacles to RRI in an **Interdisciplinary Study**. This study methodologically analysed structural, socio-cultural and individual barriers to RRI in the scientific community. The study-recommendations are summarized in this Policy Brief.

Parallel to the RRI-study the NUCLEUS partners developed **RRI recommendations** based on an international capacity-building process. This process was organized by conducting **Six NUCLEUS Field Trips** to the relevant **"Cells"** defined by the project as reference-frameworks necessary to conduct RRI as a transdisciplinary process.



The experiences gained during the **Interdisciplinary Study** and the **Field Trips** were analysed collectively in thematically focused **Working Groups**, in order to derive applicable recommendations to scientific institutions in Europe and beyond.

The results of the Field Trips, the Interdisciplinary Study and the Working Groups have been integrated into the **NUCLEUS Implementation Roadmap**. They will be practically tested and monitored in **10 “Embedded Nuclei”** – organisational units within academic institutions, and in **20 “Mobile Nuclei”** – modular approaches related to already existing formats and activities. The Implementation Roadmap provides directions for these 30 “RRI testbeds” starting in November 2017. Eventually, all insights and results will lead to an **“RRI-DNA”**, applicable beyond the project timeline.



## EVIDENCE AND ANALYSIS

The policy recommendations in this document are derived from three sources:

- **Six Field Trips analysing RRI practice in different socio-cultural contexts:** Edinburgh, UK (focusing on the cell “Universities”), Dublin, Ireland (“Economy”), Pretoria, South Africa (“Civil Society”), Beijing, China (“Public Engagement”), Nottingham, UK (“Policy-making”).
- An **Interdisciplinary Study comprising a European Survey and a Cultural Adaptation Study** with cases from China and South Africa;
- **Four Working Group meetings** in Bochum, Belgrade, Leuven and Tbilisi;
- The methodologies, reports and results of all above-mentioned sources are accessible on the project website: [www.nucleus-project.eu/resources/](http://www.nucleus-project.eu/resources/)

## POLICY IMPLICATIONS AND RECOMMENDATIONS

### *Recommendations from the NUCLEUS Study*

The following policy implications and recommendations were derived from the **NUCLEUS Study on RRI**, carried out among 130 leading researchers across Europe, with a **Cross-Cultural Study** conducted in China and South Africa.

*Integrating self-assessment into the requirements of RRI coordinating support actions can help map the adoption of RRI. Development of resources to support EU research projects in conducting self-assessments will also enhance the considerations of RRI and remove some of the obstacles.*

*Raise the engagement literacy of researchers. Scientists feel that they need assistance if they are supposed to productively interact with the general audience in terms of time, rewards, money and training. Training in communication and dialogue processes are needed if the dialogue between scientists, lay-man and other stakeholders shall be successful.*

*Funding opportunities tied to engagement can overcome obstacles of lacking recognition and resources. Higher education institutions, major funding agencies as well as scientists should discuss possible incentives.*

*RRI considerations should not block specific research lines upstream and should not initially promote a particular technology. Rather, a plurality of research lines should be pursued.*

*Social scientists and philosophers might be a good source for assessing social resistance.*

*Identify stakeholders or lay people with different interests regarding a certain research project and bring them together with scientists for an exchange of their views on a research topic.*

### ***Recommendations from the NUCLEUS Field Trips***

In addition to the study on RRI barriers in the academic community, the first phase of the NUCLEUS project developed the following recommendations from the NUCLEUS Field Trips, which the consortium considers vital for a successful implementation of RRI in academic institutions:

*Be clear about your definition.*

#### **All partners need to share a common understanding of RRI.**

RRI is a multi-faceted concept that can be practiced in many ways. Before implementing the RRI approach in academic institutions, all partners inside and outside academia should share a common understanding of the definition, its vocabulary, the implications and the impact to be generated by pursuing RRI.

*Analyse before you act.*

**The implementation of RRI should be based on institutional self-assessments.** Before striving to implement RRI, institutions first need to analyse, map and reflect their current RRI status. The NUCLEUS Field Trips' showed that self-assessment and an understanding of an institute's already existing efforts or achievements (whether labelled as "RRI" or not) is necessary. This self-assessment can also be used to measure the current level of support and/or understanding of RRI. It will also spread the awareness of RRI and its implementation.

*Communicate the concept.*

#### **Be aware about the language of RRI, make sure the concept is understood.**

The RRI-approach is relatively complex and needs to be communicated just as much within as beyond academia - in a clear way, with convincing best-practice-examples.

*Involve the governance level of your institution.*

**A successful RRI approach requires change-management processes at the policy- and governmental level of each institution.** The NUCLEUS Field Trips showed that there is a varying level of understanding, appreciation and support for RRI across different areas. In addition, structures and relationships both within universities and between universities and societal actors differ across universities and countries. Without an active involvement of all policy levels, the multi-stakeholder-approach will not be integrated into a new understanding of academic excellence.

*Create trust before you raise expectations.*

**Relationship management is key before starting innovation processes with multiple stakeholders.** Especially in the NUCLEUS Field Trips, a need for open discussions and close collaboration between various stakeholders was recognized as an essential requirement for RRI. Before designing collective research processes, a trust-building strategy needs to be conducted in dedicated platforms and forums, to establish relationships, manage expectations and foster on-going participation

*Address obstacles before starting the process.*

**In order to sustainably develop and pursue RRI processes, potential obstacles need to be identified and addressed.** These could, for example, be gaps in communication, potential divergences of interests, structural or cultural differences between stakeholders from different sectors. The NUCLEUS Field Trips and Study showed that, while the RRI concept as such is appreciated, research executives anticipated communication problems between researchers and lay people. Other potential obstacles are the different socio-cultural understandings and practices of RRI. The NUCLEUS Field Trips revealed cultural differences on how RRI is perceived in different parts of the world. Monitoring and analysing progress in overcoming obstacles will bring more understanding of influencing factors

*Motivate before you demand action.*

**Incentives are needed to encourage RRI in academic practice.** Next to increasing the knowledge about RRI in the scientific community, participants frequently mentioned the need to foster RRI via funding, incentives, career opportunities and support structures. Universities, researchers and societal actors need to be motivated and encouraged to contribute to RRI processes. To ensure credibility, incentives should come from within the academic setting: At a local level, funding and rewarding RRI efforts will support its implementation, just as acknowledging researchers' societal engagement. Training and coaching will improve researchers' skills and knowledge while RRI champions and role models can contribute to awareness and enthusiasm. Embedding RRI trainings in educational structures, e.g. in PhD schools or summer schools, will make RRI more sustainable.

## SUMMARY

Implementing RRI in the governance and culture of scientific institutions will allow universities to better respond to societal challenges. Since RRI is a process in which a variety of academic and non-academic stakeholders work together during the whole research and innovation process, the implementation of this concept requires some key elements to be considered: In order to achieve a new understanding of innovation, public engagement, creativity and learning, RRI requires new structures and formats, as well as trainings and support for scientists and stakeholders – both inside Higher Education Institutions and in the public sphere.

Based on the recommendations described in this Policy Brief, the 30 RRI-test-beds developed in the second period of the NUCLEUS project will strive to create dynamic

**N**etworks of Stakeholders,

**U**pholding Equality and Diversity,

**C**elebrating RRI,

**L**earning for Change,

**E**ngaging with Publics,

**I**nstitutionalising Change.



## DELIVERABLE DESCRIPTION

This Deliverable is the first out of three Policy Briefs of the NUCLEUS project. The Policy Brief is based on two years of capacity-building, conducted in Field Trips and Working Groups, and on an analysis conducted in an Interdisciplinary Study. The document describes the project identity, concept and approach, evidence and analysis, policy implications and recommendations.

## DELIVERABLE

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Main Contributors: EUSJA (Coordination: Jens Degett); Dublin City University; Rhine-Waal University; Science View  
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## DISSEMINATION

Dissemination Level: Public  
List of Recipients: NUCLEUS Consortium (Open Access)  
REA Project Officer (via Participant Portal)  
NUCLEUS Advisory Committee

## PROJECT

NUCLEUS is a four-year, Horizon 2020 project bringing Responsible Research and Innovation (RRI) to life in universities and research institutions. The project is coordinated by Rhine-Waal University of Applied Sciences. For more information, please visit the NUCLEUS website, follow our social media, or contact the project management team at [info@nucleus-project.eu](mailto:info@nucleus-project.eu).

## NUCLEUS ONLINE



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