NUCLEUS
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NUCLEUS

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Fostering Responsible Research and Innovation in Research Institutions

EXECUTIVE SUMMARY

This document describes a set of practical actions and options that can support research institutions and the academic community to build strong and sustained partnerships with a range of stakeholders during the research process. These practical tools aim to foster Responsible Research and Innovation in institutions by providing a set of actions (NUCLEUS Action Framework), timelines (stages) and a process for integrating actions into a logical and transferable approach that can be applied to research institutions worldwide. This process, the **NUCLEUS Approach** for RRI implementation, enables research institutions to better plan, conduct and assess their RRI approaches to suit their specific needs.

INTRODUCTION

The European Commission's Horizon 2020 programme states that Responsible Research and Innovation (RRI) "is a process in which all societal actors…work together during the whole research and innovation process in order to align R&I outcomes to the values, needs and expectations of European society." (Horizon 2020) In practice, this requires a context-dependent package of multi-actor co-development activities.

To address this need, NUCLEUS offers a developed understanding of RRI based on systematic and individual reflections from within the scientific community and expectations, demands and challenges from outside the academic world. Three years into the four-year project, NUCLEUS has tailored a reliable approach to implementing and evaluating RRI in research institutions with the **NUCLEUS Action Framework.** The Framework provides research institutions with a structured approach towards embedding RRI in their structure, governance and culture.

The project currently has ten "Nuclei" embedded in institutions across Europe, Georgia, China and South Africa. These test-beds are dedicated units working to establish RRI in the culture and structures of their host institutions. They constitute the cornerstone of the project as it builds the capacity to integrate the proposed interventions into a straightforward, transferable, four-step approach that can be applied to science institutions worldwide – the **NUCLEUS Approach for RRI implementation**.

THE NUCLEUS APPROACH

The NUCLEUS Approach enables research institutions to plan, conduct and evaluate interventions that are tailored to their specific characteristics and needs. It has been developed from the first phase of the project (comprising interdisciplinary studies, field trips and working groups) together with recommendations from other RRI projects and literature.

The main recommendations targeted at research institutions and policy makers are outlined in the **seven actions of the NUCLEUS Action Framework** which will be further tested and reviewed throughout the remaining time of the project.

The Framework sets out 7 Actions comprising a total of 63 elements which act both as indicators for the current level of RRI implementation and interventions to foster it. The actions are:

- **Action 1**: Develop RRI Institutional Capacity.
- **Action 2**: Build Institutional bridges between the research community, stakeholders and the general public
- **Action 3**: Catalyse ongoing debates about the role of science in society
- **Action 4:** Develop, nurture and support new forms of transdisciplinary research
- **Action 5**: Stimulate the responsibility of all actors involved in the process of research and innovation
- **Action 6**: Question and refine the prevailing notion of 'recipients' and 'agents'
- **Action 7**: Embed ongoing reflection and analysis into the RRI implementation process

Using the NUCLEUS Approach

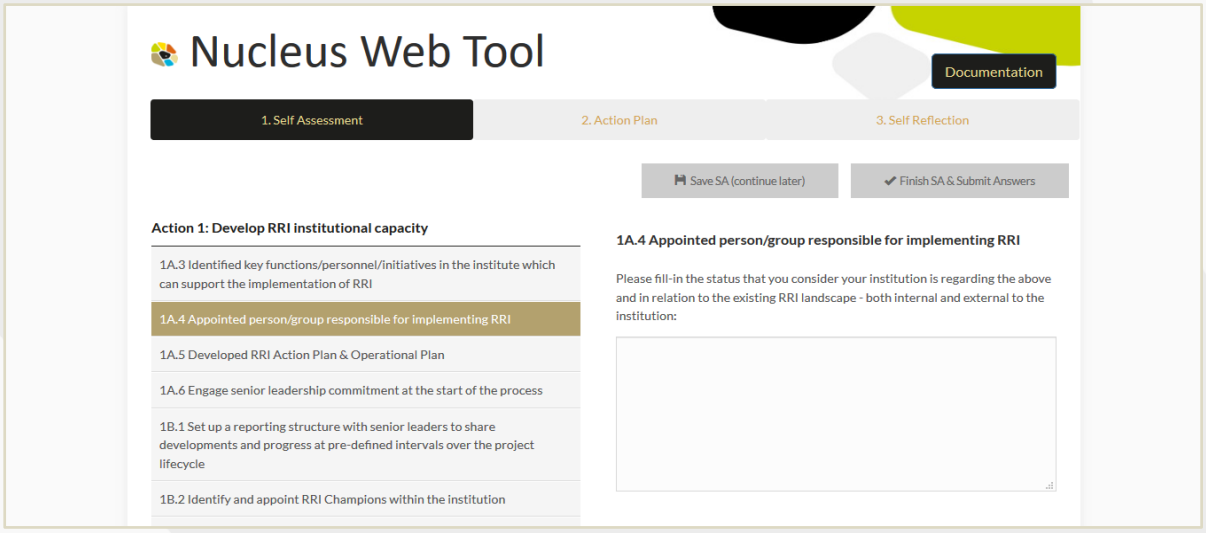
We define four steps for institutions to follow when implementing this approach. An innovative Web Tool has been developed to connect these steps and ensure both the alignment with the NUCLEUS Action Framework elements and consistency when assessing impact.

Step one: Complete a **Self-Assessment** Questionnaire which is directly aligned to the NUCLEUS Action Framework. This will indicate the level which the institution is at regarding RRI integration. For this step, we suggest use of the **NUCLEUS Web Tool** which contains all elements of the Action Framework to ensure consistency and alignment to the NUCLEUS approach.

Step two: Develop an **Action Plan**. The Action Plan is directly linked to the Self-Assessment, and should thus be completed in the **Web Tool.** Specific interventions are proposed for each element that the institution plans to address, based on the NUCLEUS Action Framework. The Action Plan serves as a strategic planning document for an institution's activities.

Step three: The **Implementation Phase,** which is contextualized and aims to bring change to the institution. This step requires engaging with societal stakeholders in a meaningful way. NUCLEUS advises the use of some **additional reporting tools** in order to support the institution's monitoring, management and implementation of the planned activities. Such tools are Gantt Charts and Report Formats on which the implemented activities, including their impact and outreach are reported in detail.

Step four: The final step of the process is completing the **Self-Reflection** questionnaire through the **NUCLEUS Web Tool**. The questionnaire is linked to the activities described in the submitted Action Plan (Step 2): The same activities/elements from the NUCLEUS Action Framework automatically appear in the Self-Reflection questionnaire so that institutions can respond to reflective questions on their implementation.



Screenshot from the NUCLEUS Web Tool

INVOLVING REGIONAL STAKEHOLDERS - BUILDING NETWORKS

The **4th Annual NUCLEUS Conference** (Malta, 11-12 October 2018) brought together a range of stakeholders to explore how RRI could open research to the needs and values of society. The conference included contributions from other RRI projects (including RRI Practice, MoRRI, MARIE and RRING) and generated discussion among researchers, practitioners, policy makers, and civil society organisations. Several key needs were identified regarding the implementation of RRI. More particularly:

- Explore ways to balance regional economic benefits with social and environmental responsibilities
- Engage local authorities and stakeholders in co-development activities to ensure the social responsibility of research and innovation
- Build sustainable, strong communities of RRI practice at the local, national and global level
- Foster synergies with projects and initiatives with similar objectives

These are of direct relevance to the NUCLEUS goal of developing the "DNA of RRI" – a set of practical guidelines for Higher Education Institutions and other stakeholders which will ensure sustainability of the NUCLEUS Approach beyond the life of the project.

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DELIVERABLE DESCRIPTION

This Deliverable is the second 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 the analysis conducted in an interdisciplinary study, and incorporates the first year of implementation. This document describes the RRI integration approach that NUCLEUS is proposing to research institutions and policy makers.

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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.

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