SURVEY CONDUCT REPORT

Deliverable 3.2

NUCLEUS

DELIVERABLE DESCRIPTION

This Survey Conduct Report describes the structure of the interview process and the current state of our interview study. For detailed information about the Survey Concept and Design, please take a look at the Deliverable 3.1.

DELIVERABLE

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DISSEMINATION

Dissemination Level:	[ ] Public
	[x] Confidential, only for the consortium and Commission
List of Recipients:	[x] NUCLEUS Executive Board
	[x] All Consortium Members (Open Access)
	[x] Project officer (via Participant Portal)
	[ ] Others (specify):

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.

NUCLEUS ONLINE

🔗 nucleus-project.eu

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EXECUTIVE SUMMARY

The NUCLEUS study has conducted interviews with Leading Researchers and Research Executives (such as Presidents, Vice-Presidents, Principals and Vice-Principals, Directors, as well as professional Deans) from universities and scientific institutions across Europe and Georgia. This Survey Conduct Report describes the structure of the interview process and the current state of our interview study.

For detailed information about the Survey Concept and Design, please take a look at the Deliverable 3.1.

TABLE OF CONTENTS

1   OBJECTIVES

The aim of the empirical study is to understand the perspectives of university management and researchers towards Responsible Research and Innovation (RRI) in their institutions. From their common themes and views, we will derive policy recommendations for the European Commission on how to implement RRI in academic institutions.

2   STRUCTURE OF THE INTERVIEW PROCESS

The interviews of the NUCLEUS empirical study were conducted between June 2016 and October 2016. All consortium partners were asked to name potential interview partners by the end of October. We made exceptions for the last interviews, so some appointments are scheduled for November and December.

Our consortium partners had to find interview partners from two kinds of people. The first group consisted of experienced researchers. In light of our study design we sought primarily the cooperation of natural and social scientists. The second group consisted of research executives such as Presidents, Vice-Presidents, Principals and Vice-Principals, Directors, as well as professional Deans. After receiving the names of the interview partners, we sent an invitation to participate with information about the project and the study, as well as the link to our project website and a 'Participant Information Sheet' (see ANNEXES 5.1 and 5.2). When we found a suitable date for an interview, we confirmed the appointment and sent the interview partners the 'Declaration of Informed Consent' (see ANNEX 5.3). The interviews were conducted with the web-based teleconference software Adobe Connect. Using this programme, we communicated by video and showed the participants a presentation about the interview questions. The interview partners only had to click on a link and enter the meeting room with a password. To be sure that we could use Adobe Connect, the interview partners were able to test their internet connection and their Flash Player using a web link. If there were problems in using Adobe Connect, we conducted the interviews with Skype or we interviewed them via telephone.

The interview questions for Leading Researchers from scientific institutions and universities were divided into eight sections with 29 individual questions. By November 21, 2016, we completed interviews with 52 interviewees, 35 of them male and 17 female. The mean time of the interviews with Leading Researchers was 53 minutes. The duration ranged between 30 minutes and 112 minutes.

The interview questions with Research Executives were divided into two parts, each with four sections, and 32 individual questions in total. By November 21, 2016, we completed interviews with 35 interviewees, 19 of them male and 16 female. The mean time of the interviews with Research Executives was 62 minutes. The duration ranged between 23 minutes and 86 minutes.

For more detailed information about the interview partners, please take a look at the list of interview partners that we received from each consortium partner (see ANNEX 5.6).

2.1 LEADING RESEARCHERS

The interviews with Leading Researchers (see ANNEX 5.4) began with a short description of the project and the study. We informed them that the interviews would be anonymised and only used for the NUCLEUS project. The interview partners then provided us with permission to record the interview, and were told they would later have the opportunity to correct factual mistakes of their transcribed interview.

We then asked the interview partners about their age and educational background. They were asked to tell us how many years they had worked in research after acquiring their PhD. Finally, they were asked to briefly describe their field of research.

The interview with Leading Researchers then used an icebreaker. We asked the interview partners if the willingness of scientists to cooperate with one another had declined over the last years and for anecdotal evidence in support of their answer.

The second section of the interview asked about the experiences and views of the interviewees in regard to Responsible Research and Innovation. We asked them to describe how they saw the role of science or research in society. Then, they were asked about positive and negative examples of Responsible Research and Innovation. The last question of the second section addressed personal experiences with science or research in society: for example, how did interviewees engage people in research, or did societal challenges influence their research projects.

The third section focused on the possibilities of stakeholder engagement in researchers' own work and in other fields of research. The interviewees were asked to describe their hopes and worries regarding the possibilities of stakeholder and laypeople engagement, and what conditions would need to be fulfilled in order for these possibilities to be realised.

Influence factors for shaping research were addressed in the next section. The interview partners had to answer questions about how calls for proposals influenced their own research, and research in general. The other four questions of this section asked about private sponsorship, senior researchers/renowned experts, collaborations among all researchers including junior researchers and students, and citizen science (the involvement of both researchers and representatives of civil society in research activities). At the end of the section the interview partners were asked to rank these five mechanisms according to their importance for their own research.

The fifth section asked about the institutional environment. We asked about opportunities and challenges to RRI in funding structures, career paths, publication environment, intellectual property rights, institutional initiatives or agendas, support services and the distribution of power.

We defined "existing institutional initiatives or agendas" as follows: "Institutional initiatives or agendas are institutionally initiated programmes to promote an alignment of research with societal needs and values, including requirements of gender equality or interdisciplinarity. For example, in the UK there is the Athena SWAN initiative to promote equal opportunities for women in science. Also, many universities have on-site incubators which seek to covert research into marketable products."

We also defined "support services" as follows: "With this we mean organisational units such as Human Resources, IT and Web Development, or Controlling, that contribute to the administration of research in line with accepted frameworks of conduct."

The interview partners were asked to respond to the new definition of Responsible Research and Innovation adopted by the European Commission. In the Research Framework Horizon 2020 the European Commission defined Responsible Research and Innovation as "*a process in which all societal actors (researchers, citizens, policymakers, business, third sector organisations, etc.) work together during the whole research and innovation process in order to align research and innovation outcomes with the values, needs and expectations of society*." We asked the interview partners if they saw opportunities and risks in this definition for their own research, and research in general.

The seventh section was about the assessment of research and innovation outcomes. We asked to what extent interviewees felt it was possible to anticipate research outcomes during the research process, and to what extent they anticipated societal consequences of technological innovations.

The last section asked about interviewees' personal vision for Responsible Research and Innovation. The interview partners talked about their ideas for the future, what kind of support was needed in order to realise these possibilities, and the obstacles the interview partners anticipated.

The interview ended with an open-ended invitation to add any final comments regarding Responsible Research and Innovation that had not yet been discussed.

2.2   RESEARCH EXECUTIVES

The interviews with Research Executives (see ANNEX 5.5) began with a short description of the project and the study. The first part of the interview was about their own personal experiences and the experiences of their current institution. The second part was about the possibilities for institutional change as they perceived them. We informed them that the interviews would be anonymised and only used for the NUCLEUS project. The interview partners then provided us with permission to record the interview, and they were told they would later have the opportunity to correct factual mistakes of their transcribed interview.

We then asked the interview partners about their age and their current position. They were asked to tell us how long they had worked in this position, and their professional background. Finally, they were asked about the number of research staff and research students in their institution.

The first section asked about the experiences and views of interviewees with regard to Responsible Research and Innovation. We asked them how they saw the role of their institution in society. Then they were asked about a positive example of Responsible Research and Innovation. The last question of this section was about their institution's experience with science or research in society: for example, did their institution engage people in research, or had societal challenges influenced their research projects.

The second section was about the possibilities of stakeholder engagement in their own institution and other research areas. The interview partners were asked to describe their hopes and worries regarding the possibilities of stakeholder and laypeople engagement, and what conditions would need to be fulfilled in order for these possibilities to be realised in their institution.

Influence factors for shaping research were addressed in the next section. The interview partners had to answer questions about how calls for proposals influenced the research of their institution. The other four questions of this section were about private sponsorship, senior researchers/renowned experts, collaborations among all researchers including junior researchers and students, and citizen science (the involvement of both researchers and representatives of civil society in research activities). The interview partners were asked to rank these five mechanisms according to their importance for their own institution.

The last section of the first part asked about the existing embedding of RRI within the institutional setting. We asked the interview partners which partnerships with industry they had, how this differed from partnerships in the past, and if there were differences with other institutions they had worked for. We asked them about partnerships outside of those with industry and how this differed from partnerships in the past.

The first section of the second part asked about the changes the interviewees would make to the current institutional environment of research and innovation. We asked them if they would make any changes to the funding structures, career paths, publication environment, intellectual property rights, institutional initiatives or agendas, support services, reporting lines or distribution of power. See above for the definition of institutional initiatives or agendas, and support services.

The interview partners were asked to describe their views on the new definition of Responsible Research and Innovation adopted by the European Commission (as described in Section 2.1). We asked the interview partners if they see opportunities and risks in this definition in their own institution.

The seventh section focused on the vision for Responsible Research and Innovation. We asked the interview partners to characterise their ideal outcome of Responsible Research and Innovation and the ideal process for achieving this outcome.

The last section asked about what needs to be done. The interview partners were asked where they saw their own institution in relation to RRI, and if they had all the resources required, which steps they would take in the next year or two to move their institution closer to the envisaged ideal.

The interview ended with an open-ended invitation to add any final comments regarding Responsible Research and Innovation that had not yet been discussed.

3   NEXT STEPS

We are currently conducting the last interviews and producing transcripts from the audio files of those already conducted. All of our interview partners will have the opportunity to give us corrections of their transcripts.

After the transcription phase, we will do a content analysis (cf. Meuser, Nagel 1991) by using Atlas.ti software. We will condense all of our transcripts with paraphrases and then will categorize these paraphrases.
With the results of the European study and the adapted study to different socio-cultural contexts from the University of Twente, we will derive specific policy recommendations for the European Commission.

4 REFERENCES

Meuser, M., Nagel, U.: 'ExpertInneninterviews – vielfach erprobt, wenig bedacht: ein Beitrag zur qualitativen Methodendiskussion', Qualitativ-empirische Sozialforschung: Konzepte, Methoden, Analysen, Garz, D., ed., Westdt. Verl., Opladen, 1991, pp. 441-471.

5   ANNEXES

APPENDIX 5.1:   PARTICIPANT INFORMATION SHEET FOR LEADING RESEARCHERS

Participant Information Sheet for the NUCLEUS Research Study

The Project

We are asking you to participate in this interview test as part of a European wide research study into the characteristics of Responsible Research and Innovation (RRI), on behalf of the Horizon 2020-project "NUCLEUS".

Our goal is to uncover and model the complex factors that contribute to shaping research decisions in a range of university and research institutions across Europe and from partners in China and South Africa. A thorough analysis will produce an evidence-based assessment of the nature of RRI and its understanding among the relevant parties. NUCLEUS then aims to develop practically useful guidelines and recommendations for the implementation of RRI by the European Commission within Higher Education Institutions and funding agencies.

The Process

To allow us to produce outcomes that are practical, it is crucial that as many people as possible who are involved in research in different ways take part in the study to allow us to collect well-informed views and evidence on which to base our recommendations. The interview participants will be recruited in EU countries where there are partners from the NUCLEUS consortium, an alliance of 26 partners which include 14 universities and research institutes.

Interviews will be conducted online or in person, whichever is more convenient. They should take a maximum of 60 minutes. During the interview, our goal is to capture all your experiences and insights as far as they are relevant to this project. We will ask you a range of open questions to do with different facets of Responsible Research and Innovation, including ways in which stakeholders and laypeople can participate in research activities.

Information provided during the interviews will be compared and contrasted with information obtained from other sources; for example, institutions' policy statements and strategy documents.

Ethical Considerations and Data Protection

Participants are provided with this Participant Information Sheet and asked to sign a Declaration of Informed Consent.

You will be asked for your permission to record the conversation, and no recording will take place without your explicit consent. After the interview you will be sent a transcript of the interview and asked to check it for factual accuracy and send us any required changes. If we do not hear from you within 10 working days of you receiving the interview transcript, we shall assume you are happy with its content.

Participation in this research study is entirely voluntary and your informed consent will be obtained in advance. You have the right to refuse to participate and to withdraw your participation, samples or data at any time — without any adverse consequences. In this case, personal data are deleted without delay. No personal or confidential information will be collected and there are no physical risks or discomfort involved.

Data are saved temporarily for the purpose of this study and are erased 10 years after its conclusion at the latest. All data from this research will be anonymised and no remarks will be attributed to an individual or institution, in any reports or papers produced by the project. You have the right to know how your data are recorded and stored.

The consortium wishes to ensure that you fully understand what is being asked for and what will happen to the information you supply. The questionnaires and interviews concern only your professional views and opinions that you share with the interviewer Data will be stored securely only on the computers of universities that are part of the consortium and have to our data collection processes. All researchers involved in this endeavour are obliged to respect applicable data protection legislation and policies. As the lead in this aspect of NUCLEUS project, the University of Bielefeld will hold the overall responsibility for approval of our research ethics and Data Protection. If non-EU-institutions involved in the consortium (which are not recognized by the EU commission as providing adequate protection) are asked to provide additional person-related material, data transfer agreements are made with the relevant institution. No data are exported from the EU to any third country.

Contact Details

In case of any questions about this project please contact Ellen Hannemann:
Mail: ehannemann@wiwi.uni-bielefeld.de
Phone:+49 521 - 106 5108

APPENDIX 5.2:   PARTICIPANT INFORMATION SHEET FOR RESEARCH EXECUTIVES

Participant Information Sheet for the NUCLEUS Research Study

The Project

We are asking you to participate in this interview test as part of a European wide research study into the characteristics of Responsible Research and Innovation (RRI), on behalf of the Horizon 2020-project "NUCLEUS".

Our goal is to uncover and model the complex factors that contribute to shaping research decisions in a range of university and research institutions across Europe and from partners in China and South Africa. A thorough analysis will produce an evidence-based assessment of the nature of RRI and its understanding among the relevant parties. NUCLEUS then aims to develop practically useful guidelines and recommendations for the implementation of RRI by the European Commission within Higher Education Institutions and funding agencies.

The Process

To allow us to produce outcomes that are practical, it is crucial that as many leading scientists and senior managers/executive officers (such as Presidents, Vice Chancellors, Vice-Presidents, Research leaders and Deans) as possible take part in the study to allow us to collect well-informed views and evidence on which to base our recommendations. The interview participants will be recruited in EU countries where there are partners from the NUCLEUS consortium, an alliance of 26 partners which include 14 universities and research institutes.

Interviews will be conducted online or in person, whichever is more convenient. They should take a maximum of 60 minutes. During the interview, our goal is to capture all your experiences and insights as far as they are relevant to this project. We will ask you a range of open questions to do with different facets of Responsible Research and Innovation, including ways in which stakeholders and laypeople can participate in research activities.

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You will be asked for your permission to record the conversation, and no recording will take place without your explicit consent. After the interview you will be sent a transcript of the interview and asked to check it for factual accuracy and send us any required changes. If we do not hear from you within 10 working days of you receiving the interview transcript, we shall assume you are happy with its content.

Participation in this research study is entirely voluntary and your informed consent will be obtained in advance. You have the right to refuse to participate and to withdraw your participation, samples or data at any time — without any adverse consequences. In this case, personal data are deleted without delay. No personal or confidential information will be collected and there are no physical risks or discomfort involved.

Data are saved temporarily for the purpose of this study and are erased 10 years after its conclusion at the latest. All data from this research will be anonymised and no remarks will be attributed to an individual or institution, in any reports or papers produced by the project. You have the right to know how your data are recorded and stored.

The consortium wishes to ensure that you fully understand what is being asked for and what will happen to the information you supply. The questionnaires and interviews concern only your professional views and opinions that you share with the interviewer.

Data will be stored securely only on the computers of universities that are part of the consortium and have to our data collection processes. All researchers involved in this endeavour are obliged to respect applicable data protection legislation and policies. As the lead in this aspect of NUCLEUS project, the University of Bielefeld will hold the overall responsibility for approval of our research ethics and Data Protection. If non-EU-institutions involved in the consortium (which are not recognized by the EU commission as providing adequate protection) are asked to provide additional person-related material, data transfer agreements are made with the relevant institution. No data are exported from the EU to any third country.

Contact Details
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Mail: ehannemann@wiwi.uni-bielefeld.de.
Phone:+49 521 - 106 5108

APPENDIX 5.3:   DECLARATION OF INFORMED CONSENT

I, the undersigned, confirm that:

•   I have read and understood the information about the project, as provided in the Participant Information Sheet.

•   I have been given the opportunity to ask questions about the project and my participation.

•   I voluntarily agree to participate in the project.

•   I understand I can withdraw at any time without giving reasons, and that there are no penalties for withdrawal.

•   The procedures regarding confidentiality have been clearly explained to me.

•   The use of the data in research, publications, sharing and archiving has been explained to me.

•   I understand that other researchers will have access to this data only if they agree to preserve the confidentiality of the data and if they agree to the terms I have specified in this form.

•   I confirm with my signature that I feel sufficiently informed about the objectives of the survey, that I am prepared to participate and that I agree that the interview can be recorded.

Participant:

_____
Name of Participant

_____
Place   Date   Signature

Please tell us whether you agree to be contacted at a later point if Bielefeld University should conduct a possible follow-up project.
Yes   No

APPENDIX 5.4:   INTERVIEW FOR LEADING RESEARCHERS

Good Morning/Good Afternoon, Professor/Dr./Mr./Ms. XXX - Thank you very much for your willingness to participate in this interview.

The interview is part of an interdisciplinary study which focuses on a new understanding of Responsible Research and Innovation (RRI) in universities and scientific institutions. The study is embedded in a Horizon 2020-project called 'NUCLEUS'. In this interview, it is our goal to capture and understand your experiences, views, hopes and worries with regard to research performed in the service of society. We want to understand your point of view and what RRI could sensibly mean from where you are sitting.

The data from the interviews will be anonymised and only used for research in the NUCLEUS project.

All in all, this interview will take approximately one hour.
Do you give me the permission to record this interview?
We will send you the transcribed interview for correction of factual mistakes.

Gender (fill in without asking):
□ female
□ male

Age:
Ph.D.:   □ yes
            □ no
    Year:
Years in research after Ph.D.:
Name and country of institution (fill in without asking):
Field of research:

1. **First...**

a. Do you think that the willingness of scientists to cooperate with one another has declined over the last [30] years [or so]? [reword for young participants]

b. Can you provide one piece of anecdotal evidence in support of your answer?

2. **This section of the interview is about your experiences and views with regard to RRI.**

    a. What role do you see for science (or research) in society?

    b. Can you describe a positive example of Responsible Research and Innovation?

    [Can you think of an example that illustrates what RRI means to you personally?]

    [Can you describe an example of where research has led to what you would see as a beneficial application?]

    What makes it a positive example?*

    c. Can you describe a negative example?

    [When you think of what RRI means to you, can you think of an example of research that lacks an appropriate amount of responsibility?]
    [Can you describe an example of where research has led to what you would see as a harmful application?]
    What makes it a negative example?*

    d. What is your personal experience with science or research in society? For example, how do you engage people in your research? Or do societal challenges influence the research projects which you have conducted or have sought funding for?

[People = literally anybody: students, colleagues, friends and family, representatives of industry or civil society, policymakers and officials, lay people in general]

3. **An important aspect of Responsible Research and Innovation as this term is generally understood is the engagement of stakeholders and lay people. This section is about your general views on stakeholder and lay people engagement.**

    [Stakeholder = any person or party who has an interest in research, e.g. government, industry, media, or representatives therefrom]
    [Lay people = 'people from the street', randomly selected members of the population]
    [Engagement = participation in the widest sense; could be that stakeholders and lay people contribute, that they listen, make suggestions, or that researchers have to justify or explain what they are doing to them, or anything of this sort.]

a. What possibilities do you see for engaging stakeholders or lay people in your own research?

b. What possibilities do you see for engaging stakeholders in fields of research other than your own?

c. What hopes and worries do you have?

    [What hopes and worries do you have with regard to the possibilities of engagement you have just described?]

d. What conditions must be fulfilled in order for these possibilities of engagement to be realised?

[What main things are needed in order to realise the possibilities of engagement you have just described?]

4. **This section is about different mechanisms for shaping research. We are interested in the relative importance of different driving forces that shape research – political agendas, business interests, research-internal factors, or more broader societal influences.**

    [One could also put it like this: There are different kinds of actors who can take the lead in shaping research – for example, political institutions, corporations, researchers themselves, or citizens. In this section, we are asking about your views on, and your experiences with, different mechanisms and actors that can influence the pathways of research.]

    a. How do calls for proposals influence your own research? How do calls for proposals influence research more generally?

        [What do you think about calls for proposals (issued by ministries or other governmental agencies)? What are your experiences?]

    b. How does private sponsorship influence your own research? How does private sponsorship influence research more generally?

        [What do you think about private sponsorship? What are your experiences?]

    c. How do senior researchers (including yourself) influence your own research? How do senior researchers influence research more generally?

        [What do you think about thought leadership of renowned experts (e.g. senior researchers)? What are your experiences?]

    d. How do collaborations among all researchers – including junior researchers and students – influence your own research? How do collaborations among all researchers influence research more generally?

        [What do you think about collaborations among all researchers (including junior researchers or students)? What are your experiences?]

e. What do you think about 'Citizen Science'- involvement of both researchers and representatives of civil society? What are your experiences?

[Citizen Science = involvement of both researchers and representatives of civil society in research activities]

[How do members of civil society influence your own research? How do members of civil society influence research more generally?]

5. **This section is about your evaluation of the existing institutional context of research and innovation. We are interested in your views on, and experiences with, various aspects of this context.**

[In particular, in the following, we would like to talk about funding structures, career paths, the publication environment, intellectual property rights, existing institutional initiatives, support services and the distribution of power within research organisations.]

a. What is good about current funding structures (in the context of RRI)? What is bad about current funding structures? What are your experiences?

[To what extent do current funding structures enable RRI? To what extent do current funding structures constrain RRI?]

[Do funding structures incentivise positive contributions to society? Are positive societal impacts appropriately considered within the current system of research funding?]

b. What is good about current career paths (in the context of RRI)? What is bad about current career paths? What are your experiences?

[To what extent do current career paths enable RRI? To what extent do current career paths constrain RRI?]

[Are positive contributions to society rewarded career-wise? Does it help researchers' careers to think about questions such as "Is my research beneficial to society?"]

c. What is good about the current publication environment (in the context of RRI)? What is bad about the current publication environment? What are your own experiences?

[To what extent does the current publication environment enable RRI? To what extent does the current publication environment constrain RRI?]

[Are positive contributions to society considered within the current publication system? Does thinking about questions such as "Is my research beneficial to society?" help getting published]

d. What is good about the current system of intellectual property rights (in the context of RRI)? What is bad about the current system of intellectual property rights? What are your own experiences?

[To what extent do intellectual property rights enable RRI? To what extent do intellectual property rights constrain RRI?]

[Does the current system of intellectual property rights promote socially beneficial applications of research? Does intellectual property help to make the world a better place?]

e. What is good about existing institutional initiatives/agendas (in the context of RRI)? What is bad about existing institutional initiatives/agendas? What are your experiences?

[Existing institutional initiatives or agendas = institutionally initiated programmes to promote an alignment of research with societal needs and values, including requirements of gender equality or interdisciplinarity. For example, in the UK there is the Athena SWAN initiative to promote equal opportunities for women in science. Also, many universities have on-site incubators which seek to convert research into marketable products.]

[To what extent do existing institutional initiatives and agendas enable RRI? To what extent do existing institutional initiatives and agendas constrain RRI?]

[Do existing institutional agendas promote socially beneficial applications of research? Do existing institutional agendas help to make the world a better place?]

f. What is good about current support services (in the context of RRI)? What is bad about current support services? What are your experiences?

[Support services = organisational units such as Human Resources, IT and Web Development, or Controlling, that contribute to the administration of research in line with accepted frameworks of conduct.]

[To what extent do existing support services enable RRI? To what extent do existing institutional initiatives and agendas constrain RRI?]

g. What is good about the distribution of power among researchers (in the context of RRI)? What is bad about the distribution of power? What are your experiences?

[To what extent do existing power structures within research organisations and projects enable RRI? To what extent do existing power structures within research organisations and projects constrain RRI?]

[Who can set research agendas?]

[Do they harm? Are they a hindrance?]

6. **This section is about your views on the new definition of RRI adopted by the European Commission.**

In the Research Framework HORIZON 2020 the European Commission defines RRI as *"a process in which all societal actors (researchers, citizens, policymakers, business, third sector organisations, etc.) work together during the whole research and innovation process in order to align research and innovation outcomes with the values, needs and expectations of society."*

a. What opportunities and risks does RRI as defined by this definition present for your own work?

b. What opportunities and risks does RRI as defined by this definition present for the future development of science and research more generally?

7. **This section is about the assessment of research and innovation outcomes.**

a. To what extent is it possible to anticipate research outcomes during the research process?

b. To what extent do you think the societal consequences of technological innovations can be anticipated?

8. **This section is about your visions for Responsible Research and Innovation.**

a. What are your ideas for the future of Responsible Research and Innovation?
[To what characteristics and ideals should RRI aspire? What should RRI be like?]
[What steps would you take? Where do you want to go?]

b. What kind of support (institutional, economic, etc.) do you need in order to realise these possibilities?

      i.   Are there differences between your own research and other fields of research?

    c.   What obstacles do you anticipate?

Is there anything regarding Responsible Research and Innovation that we haven't discussed that you'd like to add?

Thank you for your time and answers. We will send you the transcript of the interview as soon as possible.

APPENDIX 5.5:   INTERVIEW FOR RESEARCH EXECUTIVES

Good Morning/Good Afternoon, Professor/Dr./Mr./Ms. XXX - Thank you very much for your willingness to participate in this interview.

The interview is part of an interdisciplinary study which focuses on a new understanding of Responsible Research and Innovation (RRI) in universities and scientific institutions. The study is embedded in a Horizon 2020-project called 'NUCLEUS'. In this interview, it is our goal to capture and understand your experiences, views, hopes and worries with regard to research performed in the service of society, with a particular focus on your own institution. We want to understand your point of view and what RRI could sensibly mean from where you are sitting.

The structure of the interview is as follows: the first part is about your own personal experiences and the experiences of your current institution, the second part is about the possibilities for institutional change as you perceive them.

The data from the interviews will be anonymised and only used for research in the NUCLEUS project.

All in all, this interview will take approximately 50 to 60 minutes.
Do you give me the permission to record this interview?
We will send you the transcribed interview for correction of factual mistakes.

Gender (fill in without asking):
        □ female
        □ male

Age:
Name and country of institution (fill in without asking):
Current position in institution:
Time in current post:
Professional background:
Number of research staff:
Number of research students:

Part One: Personal Experience and Experience of *Own Institution*

The idea of the first part is to talk about your own personal experience and the governance of *your own institution*. We are interested in your views on 'Responsible Research and Innovation' and the possibilities, opportunities and risks you see as far as 'Responsible Research and Innovation' in *your own institution* is concerned.

9.   The first section is about your experiences and views.

a. How would you describe the role of *your institution* in society?

b. Can you describe a positive example of Responsible Research and Innovation?

[Can you think of an example that illustrates what RRI means to you personally?]

[Can you describe an example of where research has led to what you would see as a beneficial application?]

What makes it a positive example?*

c. What is *your institution's* experience with science or research in society? For example, how does *your institution* engage people in research? Or do societal challenges influence the research projects that *your institution* seeks funding for?

[People = literally anybody: students, colleagues, friends and family, representatives of industry or civil society, policymakers and officials, lay people in general]

[Can you say a few words about the relationship between your institution and society?]

10.   An important aspect of Responsible Research and Innovation as this term is generally understood is the engagement of stakeholders and lay people. This section is about your general views on stakeholder and lay people engagement.

[Stakeholder = any person or party who has an interest in research, e.g. government, industry, media, or representatives therefrom]
[Lay people = 'people from the street', randomly selected members of the population]
[Engagement = participation in the widest sense; could be that stakeholders and lay people contribute, that they listen, make suggestions, or that researchers have to justify or explain what they are doing to them, or anything of this sort.]

e. What possibilities do you see for engaging stakeholders or lay people in *your own institution*?

f. How do these possibilities of engagement differ between different research areas?

g. What hopes and worries do you have with regard to these possibilities for engagement?

h. What conditions must be fulfilled in order for these possibilities of engagement to be realised in *your institution*?

[What main things are needed in order to realise the possibilities of engagement you have just described?]

11. **This section is about different mechanisms for shaping research. We are interested in the relative importance of different driving forces that shape research - political agendas, business interests, research-internal factors, or more broader societal influences.**

[One could also put it like this: There are different kinds of actors who can take the lead in shaping research – for example, political institutions, corporations, researchers themselves, or citizens. In this section, we are asking about your institution's experiences with different mechanisms and actors that can influence the pathways of research.]

a. How do calls for proposals influence research in your institution?

[What do you think about calls for proposals (issued by ministries or other governmental agencies)? What are your institution's experiences?]

b. How does private sponsorship influence research in your institution?

[What do you think about private sponsorship? What are your institution's experiences?]

c. How do renowned experts (e.g. senior researchers) influence research in your institution?

[What do you think about thought leadership by renowned experts and senior researchers? What are your institution's experiences?]

d. How do collaborations among all researchers – including junior researchers and students – influence research in your own institution?

[What do you think about collaborations among all researchers (including junior researchers or students)? What are your institution's experiences with collaborations among all researchers?]

e. What do you think about 'Citizen Science'? What are your institution's experiences?

[Citizen Science = involvement of both researchers and representatives of civil society in research activities]

[How do members of civil society influence research in your own institution?]

12.   This question is about the 'embeddedness' of research performed by *your institution* within the larger institutional setting.

a. How would you characterise the relation between research performed by *your own institution* and industry?

   i. What partnerships with industry does *your institution* currently have?

   [Can you give us a broad overview of the types of relationships with industry that your institution is currently engaged in?]

   ii. How does this differ from the past?

   [Can you say a few sentences about how the relationship between your institution and industry has evolved over time?]

   iii. How does this differ from other institutions you have worked for?

   [How do the relations between your current institution and industry differ from other institutions you have worked for?]

b. How would you characterise the relation between research performed by *your institution* and external partners other than industry?

   i. What partnerships other than those with industry does *your institution* currently have?

   [Can you give us a broad overview of the types of relationships with partners other than industry that your institution is currently engaged in?]

   ii. How does this differ from the past?

   [Can you say a few sentences about how the relationship between your institution and non-industry partners has evolved over time?]

   iii. How does this differ from other institutions you have worked for?

   [How do the relations between your current institution and non-industry partners differ from other institutions you have worked for?]

Part Two: Desirable Changes

The idea of the second part is to explore the potential for institutional change.

13.   This question is about the changes would you make to the current institutional environment of research and innovation.

h.   What, if any, changes would you make to the following elements of the current institutional environment as faced by *your own institution*?

    i.   Funding structures

    ii.   Career paths

    iii. Publication environment

    iv.   Intellectual property rights

    v.   Existing institutional initiatives/agendas

[Existing institutional initiatives or agendas = institutionally initiated programmes to promote an alignment of research with societal needs and values, including requirements of gender equality or interdisciplinarity. For example, in the UK there is the Athena SWAN initiative to promote equal opportunities for women in science. Also, many universities have on-site incubators which seek to convert research into marketable products.]

    vi.   Support services (e.g. HR departments, controlling, IT)

[Support services = organisational units such as Human Resources, IT and Web Development, or Controlling, that contribute to the administration of research in line with accepted frameworks of conduct.]

    vii. Reporting lines

    viii. Distribution of power within research organisations

14.   This section is about your views on the practical implication of the new definition of RRI adopted by the European Commission.

In the Research Framework HORIZON 2020 the European Commission defines RRI as *"a process in which all societal actors (researchers, citizens, policymakers, business, third sector organisations, etc.) work together during the whole research and innovation process in order to align research and innovation outcomes with the values, needs and expectations of society."*

c. What opportunities does RRI as defined by the EC's new definition present for *your own institution*?

d. What risks does RRI as defined by the EC's new definition present for *your own institution*?

15.   This question is about your vision for Responsible Research and Innovation.

a. What is your personal vision for Responsible Research and Innovation?

  i.   How would you characterise the ideal outcome of Responsible Research and Innovation?

  ii. How would you characterise the ideal process for achieving this outcome?

16.   This question is about what needs to be done.

a. Given the vision for Responsible Research and Innovation you have just described, where do you see *your own institution*?

b. If you had all the resources required, what steps would you take within the next year or two to move *your institution* closer to the envisaged ideal?

Is there anything regarding Responsible Research and Innovation that we haven't discussed that you'd like to add?

Thank you for your time and answers. We will send you the transcript of the interview asap.

APPENDIX 5.6: NUMBER OF INTERVIEW PARTNERS FROM EACH CONSORTIUM PARTNER

Consortium Partner	Leading Researchers male	Leading Researchers female	Research Executives male	Research Executives female	All Interview Partners	*All invited potential Interview Partners*
Rhine Waal University of Applied Sciences	1	1	0	1	**3**	*5*
Lyon University	2	0	0	1	**3**	*7*
Ruhr University Bochum	9	1	3	1	**14**	*17*
Science View	0	0	1	0	**1**	*6*
University of Malta	4	1	0	0	**5**	*7*
University of Twente	2*	1	2	0	**5**	*6*
University of Aberdeen	2	0	1	2	**5**	*10*
University of Edinburgh	0	0	0	1	**1**	*14*
Ilia State University	3	2	0	2	**7**	*7*
Bielefeld University	0	0	1	0	**1**	*3*
Science City Hannover	2	2	2	0	**6**	*6*
Psiquadro	0	0	0	1	**1**	*3*
Nottingham Trent University	2	1	1	1	**5**	*8*
Wissenschaft im Dialog	0	0	1	1	**2**	*3*
Dublin City University	0	1	3	2	**6**	****
Delft University of Technology	4	3	1	1*	**9**	*16*
Nottingham City Council	0	1	1	1	**3**	*4*
Mathematical Institute of the Serbian Academy of Sciences and Arts	4	3	2	1	**10**	*15*
All	**35**	**17**	**19**	**16**	**87** *(response rate 61%)*	*143*