

Mutual Learning Exercise (MLE) on Research Integrity

Processes and structures

Thematic Report No 1



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MLE on Research Integrity: Processes and structures – Thematic Report No 1

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1 INTRODUCTION

At the Kick-off Meeting of the Mutual Learning Exercise (MLE) on Research Integrity (RI) the 14 participating countries in this MLE (Austria, Bulgaria, Denmark, Estonia, Finland, France, Greece, Ireland, Lithuania, Luxembourg, Moldova, Norway, Spain, and Sweden) presented the basic information about RI framework in their countries. After the discussion sessions, the participating countries agreed on four priority topics for the MLE:

1. Processes and structures for the RI,
2. Incentives for RI,
3. Dialogue and communication about RI, and
4. Training and education for RI.

This Report focuses on the first priority topic – **Processes and structures** to promote RI and deal with allegations of research misconduct. The Paper is based on the review of existing relevant literature and documentation, information about RI framework in 14 countries for research integrity (RI) presented at the Kick-off Meeting and consultations with the representatives of the participating countries. The final input for the Report was provided from the discussions during the first Working Meeting in Oslo on the 30th January 2019.

The scope for the Report on Processes and Structures is outlined in Section 2. Section 3 presents an overview of the information available from published literature and surveys on the existing landscape for RI in Europe, Section 4 presents the lessons learned from the consultations with 14 countries participating in the MLE, as well as from ongoing H2020 grants related to RI, Section 5 presents the challenges that were discussed during the first Working Meeting, and Section 6 presents the way forward in relation to RI processes and structures. The Appendix to the Report 1 contains information related RI in for each of the 14 participating countries, collected during the consultations with MLE-participating countries.

2 SCOPE

This Challenge Paper is based on the review of existing relevant literature and documentation on the topic of RI structures and procedures, as well as the discussions at the MLE Kick-off Meeting in Brussels on the 15th November 2018. After the Kick-off Meeting, the representatives from the 14 countries participating in this MLE were consulted in order to collect relevant data about RI, which would be useful not only to address the processes and structures for RI but also to provide a wider picture for RI in research/academic, public and policy communities.

During the scoping and kick-off meetings, the following themes were identified for the topic of Processes and Structures:

2.1 Definitions related to RI

One of the important themes that emerged in the discussion includes differences in how RI is defined in practice. The participating countries were interested in exploring differences in normative approach to RI: "good" research vs misconduct, RI vs research ethics, research fraud vs research misconduct, questionable research practices vs detrimental research practices, crime vs ethical breach.

2.2 Structures for RI

The participating countries identified as one of the central aims for this MLE to compare national and institutional structures among the countries in order to exchange good practices and identify possible directions and suggestions for further development of RI systems in their countries. They were also interested in exchanging experiences related to challenges in creating RI bodies, particularly in relation to what expertise is relevant for the members of RI bodies, as well as how to deal with competing interests of members of these RI bodies. Finally, the problem from the policy and funding viewpoint was how to monitor RI bodies in individual institutions, particularly in countries lack and inter-institutional framework to coordinate and monitor RI activities.

2.3 Processes and practices

Although this topic includes processes and practices for promoting responsible conduct of research, those will be explored in more depth in other challenge papers, particularly the one related to Training and Education. The primary focus for this theme was to exchange best practices regarding processes for dealing with research misconduct. The important challenges that were identified as potential topics for the discussion were related to good practices in implementing RI principles and requirements in real life, so that all stakeholders subscribe to good practices and actually implement them in their work. Another challenge that emerged was the overlap of legal regulation and research integrity with research ethics principles. Finally, the question of protection of both the whistle-blowers and the accused in allegations of research misconduct was identified as a theme where exchange of good practices would be useful for the participating countries.

2.4 Resources for RI

As the participating countries are at different stages of developing RI systems, they were interested in sharing best practices and different roads in ensuring sufficient resources for RI framework.

2.5 Cross-national/cross-institutional/cross-sectoral/cross-disciplinary issues

With a growing importance of multidisciplinary and multinational research, important themes for RI systems in a country are related to dealing with RI issues, particularly in RI investigations : a) across national boundaries (when researchers change country of residence), b) cross-institutional (when researchers change institutions within a single country), c) collaboration across sectors (academia, research, industry), and d) cross-disciplinary differences (where established professional practices may significantly differ, such as authorship practices). The participating countries were particularly interested in exchanging good practices in how to cross different barriers in RI investigations and how to ensure that structures and processes work across different barriers.

2.6 Emerging issues

The participating countries were also interested in the discussion and sharing of good practices in dealing with emerging issues for RI, such as the application of the General Data Protection Regulation (GDPR) in research, as well as the implications of Open Science for RI, including Data Management¹ and FAIR principles for data use (findability, accessibility, interoperability and reusability),² and Open Access publishing of research.³

This Report presents an in-depth analysis of what is known about definitions, structures, processes and resources for RI, and will put forward the challenges related to collaboration in investigating research misconduct and to emerging issues, such as data management, protection of privacy and open access.

¹ European Commission. Guidelines on FAIR Data Management in Horizon 2020. 2016. Available at: http://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf.

² Turning FAIR into reality. 2018. Available: https://ec.europa.eu/info/sites/info/files/turning_fair_into_reality_1.pdf.

³ Science Europe. Plan S. Accelerating the transition to full and immediate Open Access to scientific publications. 2018. Available: https://www.scienceeurope.org/wp-content/uploads/2018/09/Plan_S.pdf.

3 LANDSCAPE

Since December 2015, when the Council of the European Union put research integrity for the first time on its agenda and adopted Conclusions recognising “research integrity as the foundation of high quality research and as a prerequisite for achieving excellence in research and innovation in Europe and beyond”,⁴ research integrity has become an important part of research policy also for research funding organizations but also at national research policy, research and funding bodies.

3.1 Current policies for RI and new initiatives

Currently, we have the revised “European Code of Conduct for Research Integrity”⁵ (ECCRI), developed in 2017 by the All European Academies (ALLEA), as the basic document for RI in Europe, particularly in H2020 programme, where RI is part of contractual obligation (in Article 34 of the Grant Agreement).

Other international organizations have recently addressed RI. For example, World Economic Forum convened a group of young scientists to produce a “Code of Ethics for Researchers”⁶ in 2018, which defines important principles related responsible conduct of research: 1) Engage with the public, 2) Pursue the truth, 3) Minimize harm, 4) Engage with decision-makers, 5) Support diversity, 6) Be a mentor, and 7) Be accountable. This Code was criticised as being produced by single stakeholder in research, younger researchers (younger than 40 years of age in this case), whereas the ECCRI was built by diverse stakeholders.⁷

In 2017, an international group of diverse stakeholders published The Brussels Declaration on Ethics & Principles for Science & Society Policy-Making, calling for cooperation of all stakeholder and setting expectation for all of them in relation to RI.⁸

“Expectations from the scientific community:

- The integrity of science needs to be clear and the integrity of scientists providing advice must be unimpeachable
- The full range of scientific disciplines should be included; notably, the social sciences can play a key role in improving how the public may react or adapt
- Scientists must learn to use established communication channels for providing policy advice more effectively and be less aloof and perhaps less arrogant
- Scientists must listen and respond to criticism.

Expectations from the policy-making communities:

- Policy-makers must listen, consult and be held accountable
- Ethical consideration of the impact of policy decisions is crucial
- Policy-makers have to challenge science to deliver on public investment

⁴ The Council of the European Union. Draft Council conclusions on research integrity. 2015. Available: <https://data.consilium.europa.eu/doc/document/ST-14201-2015-INIT/en/pdf>.

⁵ The European Code of Conduct for Research Integrity. 2017. Available: https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf.

⁶ World Economic Forum. Young Scientists. Code of Ethics. 2018. Available: http://www3.weforum.org/docs/WEF_Code_of_Ethics.pdf.

⁷ Hiney M. Code of conduct for research integrity. Nature 2018;556:436.

⁸ The Brussels Declaration. 2017. Available: <https://www.sci-com.eu/main/docs/Brussels-Declaration.pdf>.

- Policy-makers should be willing to justify decisions, particularly where they deviate from independent scientific advice
- Policy-makers should acknowledge the potential for bias and vested interests contrary to the scientific consensus.

Expectations from the public, media, industry and interest groups:

- The public plays a critical role in influencing policy and must be included in the decision-making process
- Industry is an investor in knowledge generation and science and has every right to have its voice heard
- Interest groups similarly have every right to have their voice heard as guardians of the common good or legitimate sectoral interests
- Advice from any source to policy-making must acknowledge possible bias".

3.2 Surveys of RI frameworks in Europe

In response to the growing importance of RI and its incorporation in European and global research policies, many European countries have adopted laws, codes and/or guidelines to promote research integrity and prevent research misconduct. They have also established national or organizational frameworks for RI, including relevant structures and procedures. However, these policies and structures, as well as the definitions of research integrity and misconduct are quite varied among European countries.

This Report presents the findings of four surveys that explored how different aspects of RI are addressed in different European settings. These surveys were published from 2013 to 2017 and involve different but overlapping country samples. The results of these surveys will be presented chronologically, in order to capture the possible changes in time.

3.2.1 Survey of the Danish Agency for Science, Technology and Innovation (2013)

This survey explored the national systems for handling cases of research misconduct in 15 European countries.⁹ The European countries covered by the survey were: Austria, Belgium, Croatia, Denmark, Ireland, Luxembourg, Norway, Poland, Switzerland, Sweden, The Netherlands, and United Kingdom. Three other surveyed countries were Australia, Canada and the USA.

The survey showed that there were different definitions of research misconduct. For some countries only falsification, fabrication and plagiarism (FFP) constitute misconduct, but in others the list is longer and includes what is usually called "questionable research practices". In some countries' definitions, misconduct needs to include intention, and honest errors and scientific discussions are differentiated from misconduct behaviour. The policies in different countries also take different forms: some are defined by law and are legally binding (such as in Denmark, Norway, and Poland) whereas in others the guidelines/codes are not legally binding documents.

At the time of the survey (2012), some European countries had national legislations that addressed RI (Croatia, Denmark, Norway, Poland, Sweden and Switzerland). In some of them, the role of research institutions in research misconduct was defined. Furthermore,

⁹ The Danish Agency for Science, Technology and Innovation. National systems for handling cases of research misconduct. 2013. Available: http://www.enrio.eu/wp-content/uploads/2017/03/National_systems_for_handling_cases_on_research_misconduct.pdf.

in all surveyed countries except Luxembourg, investigations of research misconduct cases fell under the responsibility of the institutions, whereas other bodies, such as national RI bodies, were involved to varying degrees. The degree of involvement of national bodies ranged from actually making decisions and recommendations to having only an advisory role. In some countries, national bodies are also required to supervise institutional processes.

The members of the RI bodies (or committees – the term used in the survey), were usually established researchers from different research disciplines and were appointed for a term which usually ranged from 2 to 4 years. The committees often included a lawyer as a member to help with legal matters. Finally, some committees included outside (foreign) expertise, and one country (Austria) engaged only outside experts in RM investigations.

Regarding the procedures for handling research misconduct cases, the survey identified different practices regarding the four investigation steps.

The possibility for taking up cases: The cases (complaints) are usually submitted to a committee by private persons or institutions submitting a complaint, which usually needs to be in a written form. Some committees can initiate cases on their own. After the preliminary investigation, the committee decides whether to proceed with the case, i.e. whether it has the competence to deal with the complaint and/or whether the case falls under their mandate and terms of reference.

The hearing process: Usually takes the form of statements from the parties in a case. These statements are mostly in a written form, but some committees (like in Austria) can have oral hearings too. In some countries this process is regulated by general legislative rules on administrative decisions.

The possibility for appeal: The range is from an appeal at the institutional level (Ireland, UK) to an appeal to an external body (committee) (Belgium, Croatia, Norway, Poland, Netherlands). In some countries, there is no formal appeal system (Austria, Denmark, Luxembourg, and Sweden).

The possibility for sanctions: These can be at the level of institutions (range from a warning to disciplinary action or withdrawal of title or internal funding) or funding agencies (ranging from withdrawal of funding to prohibition from submitting funding application). In countries that have national bodies, these usually provide recommendations to the institution which the institution can then choose to follow. In some countries, the decision of the national committee has full binding power.

The surveyed countries also differed in the confidentiality/transparency of the misconduct investigation. About half of the surveyed countries deal with the cases in confidence and does not make the decision public, whereas the other half keeps the cases confidential but the decisions are made public (often anonymized).

The protection of whistle-blowers, defined as “persons disclosing information to other person’s wrongdoing”, also varied, with half of the countries having some protection for them and the others without such protection.

Finally, the respondents in this survey identified benefits and challenges to the system of handling cases of research misconduct:

- a) the research institutions are best placed to conduct investigation of misconduct allegations, where the research was done;
- b) this calls for institutional mechanisms in place and willingness to handle such cases, which is sometimes not the case;
- c) absence of national policies or coordination of policies among organizations may result in different outcomes for similar cases at different institutions;

- d) the existence of a permanent national independent body for handling research misconduct cases was identified as a positive element, but the lack of authority of such body to make binding decision presents a serious challenge to the success of combating research misconduct in the community.

3.2.2 Survey of RI guidance documents in countries in the European Economic Area (2014)

This survey performed a systematic content analysis of biomedical research integrity guidance documents from the countries in the European Economic Area.¹⁰ The study included 31 target countries and obtained responses from 30 countries. The documentation was collected from 19 countries and included 49 guidelines. The countries included in the analysis were not specified but include (according to the references to the documents) Austria, Belgium, Czech Republic, Estonia, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Latvia, Lithuania, Netherlands, Poland, Spain, Sweden, Switzerland, and United Kingdom.

Two themes emerged as dominant in guidance documents on RI – related to content of RI and to research misconduct. Importance of RI and threats to RI were predominantly addressed in relation to the first theme, as well as individual responsibility of researchers. In contrast, the analysed guidance documents did not often address conflicts of interest and data management, particularly the preservation of data.

In relation to research misconduct, the guidance documents most often defined misconduct, including the intention, negligence or deceit in the definition, and often addressed authorship manipulations. They also identified factors contributing to misconduct, primarily competition and personal motivation for success and recognition). In relation to the impact of misconduct, damage to the trust between scientists, and the trust in science of society and of research funders was often addressed in the documents, as well as damage to reputation of science in general, of institutions and of research projects. In relation to dealing with allegations of misconduct, the documents most often stated that institutions should have adequate procedures for dealing with misconduct and that they should have the main responsibility for handling allegations, that investigations should be quick and confidential, and that it is important to protect both the whistle-blower and the accused person (warning also that whistle-blowers can have dishonest intentions). Finally, many guidance documents emphasized the importance of RI training and RI environment in preventing misconduct.

3.2.3 Survey of RI practices in Science Europe member organisations (2016)

This survey was performed in 2014 and included 27 responses from 33 different organizations that are members of Science Europe (1 response covered 7 individual councils that were all member organizations)¹¹: Austria, Belgium (2 organizations) Denmark (2 organizations), Estonia, Finland, France (3 organizations), Germany (3 organizations), Hungary (2 organizations), Ireland, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, and United Kingdom). The survey presented predominantly the experiences from research funding organizations (26 out of 33 responding organizations).

¹⁰ Godecharle S, Nemery B, Dierickx K. Heterogeneity in European research integrity guidance: Relying on values or norms? *J Emp Res Hum Res Val* 2014;93:79-90.

¹¹ Science Europe. Research Integrity Practices in Science Europe Member Organisations. 2016. Available: <https://www.scienceeurope.org/wp-content/uploads/2016/07/Science-Europe-Integrity-Survey-Report-July-2016-FINAL.pdf>.

The survey addressed several important topics related to RI, including training, raising awareness, self-assessment, and recommendations on policy and procedures. Here we present those relevant for the topic of this Report.

Definition of RI: One third of responding organizations did not have a definition of RI, and many noted that the distinction between RI and research ethics remains unclear. They also thought that having policies and processes for research ethics was not sufficient to cover RI issues.

RI policy and instruments: Most of the respondents stated that their organization had a specific RI policy.

Legal instruments: About half of respondents stated that their organizations had to follow one or more legally binding instruments or processes for dealing with misconduct cases, and half of respondents also had established processes for dealing with allegation of misconduct; more than half had established some kind of body to deal with misconduct cases. However, the information on these processes was not readily available in the public domain (i.e., on the organization's web site). The bodies for investigating misconduct cases were most often external to the responding organization, and were permanent bodies. About half of these bodies had a decision making role, and the other half had an advisory role in misconduct cases. For investigatory groups formed within the organization that conducted misconduct investigations, the membership was predominantly external to the organization. There was no predominant nature of bodies dealing with misconduct allegations, as they ranged from the board of an organisation to an internal body such as ethics committee or dedicated external bodies.

Mobility in misconduct cases: Only a few of the respondents reported that their organizations had procedures for dealing with allegations against persons that moved before the allegation was made, during the investigation process or after the completion of investigation. Furthermore, few organizations had processes to check the history of misconduct allegation with previous employers, or required a declaration on previous proven cases of misconduct for a position or grant. No organization had a policy to check with previous employers about any history of allegations of misconduct for new appointments.

Whistle-blowers: Only a few organizations had procedures for protecting whistle-blowers.

Sanctions: A range of sanctions was reported, from warnings to blocking of grants to withdrawal of academic degrees. In some cases, the sanctions were determined by bodies that were different from those that concluded the misconduct cases. Only in a single case there was an option of a sanction for the organization that failed to follow RI rules.

Appeal: Less than half of the organizations permitted appeals against administrative decisions on RI cases.

Collaboration: Only a few organizations had RI and collaboration in misconduct cases as a part of collaborative agreement with other organizations.

3.2.4 Survey of guidance on RI and misconduct at European universities (2017)

This survey explored what guidance about RI was available at 18 universities from 10 European countries (Belgium, Finland, France, Germany, Italy, Netherlands, Spain, Sweden, Switzerland, and United Kingdom), which were members of the League of European Research Universities (LERU).¹² The analysis encompassed 38 documents, which

¹² Bonn NA, Godecharle S, Dierickx K. European universities' guidance on research integrity and misconduct: accessibility, approaches, and content. *J Emp Res Hum Res Ethics* 2017;12:33-44.

were mostly available online, in the public domain, but for some there was no document in English, which restricted the usability of the documents to the international community. Most of the analysed documents were in the form of a code of conduct in which they stated the principles, values standard and/or norms of responsible conduct of research.

Most of the document defined fabrication, falsification and plagiarism as research misconduct, and many explicitly stated that honest errors were not misconduct, and some included negligence as misconduct. Some documents also described other undesirable practices, such as authorship misuse, duplicate publication and data mismanagement.

The specificity of this survey was that it looked at the surveys in mid-2014 and then again in 2016. The authors noticed that the documents were more available on the web pages at the second time point and that they were updated by several institutions, which addressed new issues, such as whistle-blower policies etc. Some institutions (examples from UK) started publishing an RI annual report or statement on their web-sites. Also, institutional guidance documents increasingly mentioned to national or international RI guidance, such as the European Charter for Researchers.

The authors concluded that the current guidance documents show a variability of approaches to definitions and policies, but that they should be more transparent and available to the national and international community.

4 LESSONS

The analysis of available research and surveys so far showed quite a large variety of RI structures and practices in Europe.

This section will present the recent findings from H2020 projects that specifically dealt with research integrity (Table 1). These project provide some guidance related to the questions and challenges identified by the participant countries during the Scoping and Kick-off Workshops, such as the definition of RI vs that of research ethics, the definition of and competencies for research integrity and research ethics experts. The summary of information about RI structures and procedures collected from the 14 countries participating in this MLE will also be presented. Detailed information about RI in 14 countries are presented in the Annex to this Report.

Table 1 H2020 projects related to RI and serving as sources of information for this MLE

Project acronym	Project title	Web-site
PRINTEGER	Promoting Integrity as an Integral Dimension of Excellence in Research	https://printeger.eu/
ENERI	European Network of Research Ethics and Research Integrity	http://eneri.eu/
EnTIRE	Mapping Normative Frameworks for EThics and Integrity of REsearch	http://www.entireconsortium.eu/

4.1 Definition of RI

The **ENERI project** specifically dealt with the definitions of research integrity and research ethics:¹³

“**Research ethics** addresses the application of ethical principles or values to the various issues and fields of research. This includes ethical aspects of the design and conduct of research, the way human participants or animals within research projects are treated, whether research results may be misused for criminal purposes and it refers also on aspects of scientific misconduct”

Research ethics is considered as a more generic concept than research integrity:

“**Research integrity** is recognized as the attitude and habit of the researchers to conduct research according to appropriate ethical, legal and professional frameworks, obligations and standards.”

Thus, RI includes both external and internal forms in relation to a researcher: external in the form of laws/regulations, policies, codes or guidelines that govern researchers in their work, and internal, in the form of internalized norms or desirable practices.

The two fields “combine general ethical reflections, ethics and law as academic disciplines addressing research activities, moral attitudes of researchers, normative policies of stakeholders like sponsors or funding organizations, and various ethical expectations of the civil society”. More details are available in the recently released ENERI RI&RE manual.¹⁴

¹³ ENERI. What is research ethics? Available: <http://eneri.eu/what-is-research-ethics/>.

¹⁴ ENERI. ENERI Manual. Research integrity and ethics. Available: <http://eneri.eu/e-manual/>.

The **PRINTEGER project** analysed how different stakeholders defined RI, particularly how researchers and policy-makers have diverged in their outlook on RI.¹⁵ While researchers have a rather broad conception of RI, seeing it as a virtue that should be promoted, policy makers take a more regulatory tone in their documents, with strict norms and financial concerns. This conceptual divide results in several problems, which need to be kept in mind in discussing RI structures and procedures. One of the problems is that researchers see RI policies more as an obstruction than as a native part of the research community, and approach the policies as a ritual but not with real compliance. Furthermore, it is then more difficult to harmonize approaches to RI or impose one definition of RI, especially having in view the already described diversity of national practices and politics.

4.2 Conducting research misconduct investigations

The **PRINTEGER project** tried to assess the incidence of research misconduct and found that it is very difficult to determine. Even the incidence of registered cases of scientific misconduct and, more generally, RI breaches was difficult to determine with precision.¹⁶ There was very little available data on misconduct cases on the official sites and in the public domain. The need for transparency is challenged by the need for confidentiality and fair procedures.

The project also investigated in detail fair procedures in research misconduct investigations.¹⁷ The report included the discussion on the necessity of procedures on one side and the necessity of fairness on the other, visibility and transparency, clear limitations of the scope of investigations, access to preliminary evidence, decision on launching an investigation, reporting of misconduct, protection of whistle-blowers, dealing with allegations in "bad faith", rights of the accused, nature of investigating and deciding bodies, publicity and transparency of the procedure, determination of misconduct, sanctions, appeals and communicating the results of an investigation.

Detailed presentation of the PRINTEGER report is beyond the scope of this Report, but it is an important read for all involved in setting up and maintaining an RI framework. The report ends with the conclusion that the differences in the definition of RI make it difficult to have harmonized procedures. However, it also argues that, from a legal perspective, the absence of clear definition could be to some extent mitigated by case law or a collection of decisions on research misconduct, so that those decisions could define the common contours of research misconduct and provide a learning opportunity and reflective exercise for the RI system in an organization or a country.

4.3 Definition of research ethics/research integrity expert

Both ENERI and PRINTEGER projects dealt with this issue.

ENERI project had an extensive stakeholder consultations about what constitutes expertise for RI (and research ethics).¹⁸ As the report was not publicly available at the time of writing this Challenge Paper, the conclusions are presented here in more detail.

¹⁵ PRINTEGER. Deliverable 2.2. Promoting virtue or punishing fraud: mapping contrasting discourses on 'scientific integrity'. Available: <https://printeger.eu/wp-content/uploads/2016/10/D2.2.pdf>.

¹⁶ PRINTEGER. Deliverable 3.1. Final report on the incidence of misconduct. Available: <https://printeger.eu/wp-content/uploads/2015/12/D3.1.2.pdf>.

¹⁷ PRINTEGER. Deliverable 3.10. Fair procedures. Available: <https://printeger.eu/wp-content/uploads/2018/05/D3.10.pdf>.

¹⁸ ENERI. Deliverable 6.1. Summary of empirical programme and preliminary set of indicators for e-database. Not yet available online.

The evidence from the literature and EU projects indicates that “experience in ethics assessment processes is valued over qualification, and training is advised for all members” and that “specific knowledge/qualification is required for *ethics specialists* and *legal experts*”. In regard to certification of this expertise, “procedure and training certification are favoured over personal certification”. The expert interviews with 11 participants identified core competencies for RI/RE expertise:

- “Ethical competences (deep knowledge of national and international regulation; cases, awareness of moral dilemmas and ethical deliberation)
- Integrity competences (deep knowledge of national and international regulation, policy and guidelines)
- Research/science experience (having performed research activities in the past)
- Legal competences
- Ethics assessment/review experience (having performed ethics assessment in the past)
- Integrity assessment/review experience (having performed integrity assessment in the past)”

Table 2 presents the identified desirable skills for RI/RE experts

Table 2 Desired skills for RI/RE experts

Hard skills	Soft skills	Process skills	Emotional skills
Analytical skills	Communicational	Administrative/manag ement	Open-mindedness
Scientific skills	Interpersonal	Turning ideas into recommendations/prac tice	Independence
Ethical commitment/thinkin g/abilities	Eye for details	Decision-making	Societal/cultural/health care awareness/impact
Critical thinking	Ability towards deliberation		Personal commitment
Assessment/ review	Peace-making, conflict- resolution		
	Collaboration		

In relation to the certification of expertise, the following recommendation was provided, based on the interviews and a survey of stakeholders:

“... training should only be offered on a voluntary basis and not be made mandatory and that ‘any ethics/integrity training’ should be accepted as opposed to a certified training by an official body. When defining the type of certification required for the training, a majority would opt for a certification to be received following completion of the course as opposed to requiring certification of the teaching method of the specific course.”

4.4 RI country report cards

For the purpose of this MLE, information about the environment for RI was collected for all 14 participating countries. The full information on individual countries is presented in the Appendix to this Challenge Paper in the form of RI Country Report Cards.

The idea of Country Report Cards came from the discussions by different stakeholders during the 4th World Conference on Research Integrity (WCRI) in Rio de Janeiro in 2015. The discussions were held during one of the Conference's Focus Tracks – "Improving Research Systems: the Role of Countries".¹⁹ The participants, who came from different countries (Austria, Brazil, China, Croatia, France, Germany, Ireland, Japan, Kenya, the Netherlands, Norway, Saudi Arabia, Singapore, Slovenia, Switzerland, UK, and USA) discussed the ways in which information about the RI framework in a country could be organized. They created the principle of RI Country Report Cards, whose purpose would be to help in benchmarking and then monitoring the development of RI framework in a country; a tool for comparing good practices and for empowering to develop and strengthen RI; to increase awareness of RI and to encourage research into possible effective ways to strengthen the integrity of the research systems.

The Focus Track concluded with the proposition of the content for a RI Country Report Card. The idea for this structure came from the quality assessment approach used in health care – the so-called Donabedian approach.²⁰ In this approach, a system (in this case RI) is evaluated through its **structures** (characteristics of the RI/RE system), **processes** (procedures for ensuring responsible research and procedures for dealing with RI investigations) and **outcomes** (results of RE/RI system).

The discussion of the stakeholders at the 4th WCRI identified the following defining elements of the **RI structures**: the number of researchers and research institutions per population (to capture the demographics of the research community); the amount of spending on research and the distribution of private, public and charity funding; scientific strategy; national bodies and laws relevant for RI/RE; the organizational structure and level of research integrity; number of researchers and others involved in RI/RE; percentage of postdoctoral students who get paid positions and percentage of grant success for applications to national funders (to capture structural elements of the research environment).

For **RI processes**, the following elements were suggested: procedures to disseminate and enforce RE/RI policies, existence and nature of training for RE/RI, evaluation and monitoring of the RE/RI policies and activities, transparency of outcomes of research misconduct allegations, presence and activity of designated RI offices in institutions, procedures for whistle-blowers protection, funding for RE/RI work and research; registration of clinical trials (for biomedical research) and actions to ensure transparency of research (open access).

For **RI outcomes**, the discussion at the 4th WCRI did not come to a clear conclusion and there were different suggestions, ranging from "the status of research integrity in a country (as measured by an array of indicators)" to "the current efforts on achieving maximum research integrity and a conducive research environment". In the discussions that followed the 4th WCRI, the following elements for outcomes were identified: results of research integrity evaluation as a part of institutional quality assessment; research impact assessment and translation of research findings to the community; public's perception of research integrity in their country, rewards for collaborative science and incentives for networks.

This topic continued to be in the focus of the WCRI, so the practical application of Country Report Cards were discussed at the 5th WCRI in Amsterdam, May 28-31, 2017. The RI Country Report Cards were presented for 4 countries: USA (by Z.H. Hammat, formerly from the Office of Research Integrity, ORI),²¹ UK (by E. Wager, former president of the

¹⁹ Kleinert S, Marušić A. F2 Focus track on improving research systems: the role of countries. Proceedings of the 4th World Conference on Research Integrity. Res Int Peer Rev. 2016;1(Suppl 1): 55-56. Available at: <https://researchintegrityjournal.biomedcentral.com/articles/10.1186/s41073-016-0012-9>.

²⁰ Donabedian A. Evaluating the quality of medical care. Milbank Mem Fund Q. 1966 ;44 Suppl:166-206.

²¹ Hammat ZH. Accountability & transparency for research integrity via country report cards: USA. Presentation at the 5th World Conference on Research Integrity, Amsterdam, 28-31 May 2017. Available at:

Committee of Publication Ethics),²² Norway (by E. Engh, from the Norwegian National Research Ethics Committees)²³ and Croatia (by A. Marušić, president of the European Association of Science Editors).²⁴ This exercise for four countries demonstrated the diversity of approaches to RI globally and in the EU.

The principle of RI country report cards was then used to develop the information framework for collecting data on RI for European countries for the **EntIRE project**,²⁵ an EU project dedicated to development of an online Wikimedia information and discussion platform for RI and research ethics. The country report cards were piloted and tested for three countries: Netherlands, Spain and Croatia.

The same approach was used to collect the information on RI system in 14 countries participating in this MLE. The country tables were first filled with information available in the public domain (starting from the information at the European Network of Research Integrity Offices – ENRIO).²⁶ Then the tables were sent to the representatives of the 14 countries, who participated in the MLE Scoping and Kick-off Workshops. The revised tables are presented in the Annex to this Report. For some countries, the legislation changed recently or will be changing in near future, so it was not always possible to obtain most recent information.

The information in the tables is very extensive, and presented here is a very brief summary of the structures and processes. The tables can serve, as they were intended, as a benchmark for the current situation and follow up of the development, and as a comparison and learning tool to improve RI in a country setting.

Table 3 presents a brief summary of the structures and processes in the 14 countries participating in this MLE, according to the information available in the public domain and updated by representatives from participating countries. Only 5 out of 14 countries did not have a national RI policy (Bulgaria, Greece, Lithuania, Luxembourg, and Moldova). Countries that do not have a national policy have policies at the level of research performing or/and research funding organizations. Only 3 out of 14 countries did not have a national body or bodies for RI (Estonia, Greece, Moldova), and only 3 countries (Bulgaria, Moldova, Lithuania) are not ENRIO members (with Lithuania having submitted a membership application). Finally, most of the countries have a defined procedure for handling misconduct at the national level (9 out of 14 countries).

<https://wcrif.org/images/2017/documents/3.%20Wednesday%20May%2031,%202017/1.%20Aula/Z.%20Ham matt%20-%20Accountability%20and%20transparency%20for%20research%20integrity%20via%20country%20report%20cards.pdf>.

²² Wager E. Research integrity country report card: UK. Presentation at the 5th World Conference on Research Integrity, Amsterdam, 28-31 May 2017. Available at: <https://wcrif.org/images/2017/documents/3.%20Wednesday%20May%2031,%202017/1.%20Aula/E.%20Wager%20-%20Research%20integrity%20report%20card%20for%20the%20UK.pdf>.

²³ Engh E. Country report card on research integrity: Norway – a broad approach. Presentation at the 5th World Conference on Research Integrity, Amsterdam, 28-31 May 2017. Available at: <https://wcrif.org/images/2017/documents/3.%20Wednesday%20May%2031,%202017/1.%20Aula/E.%20Engh%20-%20Country%20report%20card%20on%20research%20integrity%20-%20Norway%20-%20a%20broad%20approach%20to%20research%20integrity.pdf>.

²⁴ Marušić A. Report card: Croatia. Presentation at the 5th World Conference on Research Integrity, Amsterdam, 28-31 May 2017. Available at: <https://wcrif.org/images/2017/documents/3.%20Wednesday%20May%2031,%202017/1.%20Aula/A.%20Maru sic%20-%20Accountability%20and%20transparency%20for%20research%20integrity%20via%20country%20report%20cards.pdf>.

²⁵ Mapping Normative Frameworks for EThics and Integrity of Research. Available at: <https://cordis.europa.eu/project/rcn/210253/factsheet/en>.

²⁶ European Network of Research Integrity Offices. Available at: <http://www.enrio.eu/>.

On the other hand, institutions in most of the countries (n=8) do not have dedicated RI bodies, such as specific RI offices or officers. The level of handling misconduct investigation was only institutional in 6 countries or different combinations of institutional and national levels in 8 countries.

Table 3 Basic information about RI structures and processes of MLE participating countries

Country	National RI policy	National body(ies) for RI	RI expertise (officers) in institutions	Member of ENRIO	Misconduct investigation level (institutional, national, other)	Procedure for misconduct investigation defined
Austria	Yes (OeAWI Guidelines for Good Scientific Practice)	Yes (Austrian Agency for Research Integrity – OeAWI)	Yes	Yes	Institutional and/or national (OeAWI)	Yes (OeAWI Rules of Procedure)
Bulgaria	No	Yes (Committee on Academic Ethics)	No	No	Institutional or national (Ethics Committees or Committee on Academic Ethics)	No
Denmark	Yes (Danish Code of Conduct for Research Integrity)	Yes (Danish Committee on Research Misconduct – DCRM)	Yes (Research Integrity Officers; Special Advisers)	Yes	Institutional and national (DCRM)	Yes (Danish Act on Research Misconduct)
Estonia	Yes (Estonian Code of Conduct for Research Integrity)	No	No	Yes	Institutional (Ethics Committees)	No
Finland	Yes (TENK Guidelines on Research Integrity)	Yes (Finish National Board on Research Integrity – TENK)	Yes (Research Integrity Advisors by TENK)	Yes	Institutional or/and national (TENK)	Yes (TENK Guidelines)
France	Yes (French National Charter for Research Integrity)	Yes (French Office for Scientific Integrity – OFIS)	Yes (Research Integrity Officers)	Yes	Institutional (Ethics Committees, RI Officers, Boards)	Yes (Guidelines of research integrity officers for handling misconduct allegations)
Greece	No	No (only for bioethics and medicines ethics)	No	Yes	Institutional (Ethics Committees)	No
Ireland	Yes (National Policy Statement on Ensuring Research Integrity)	Yes (National Forum for Research Integrity)	Yes	Yes	Institutional (RI officers, panels)	Yes (Guidelines of the National Forum for Research Integrity)
Lithuania	No	Yes (Office of the Ombudsman for Academic Ethics)	No	No (application submitted)	Institutional (Research Ethics Committees)	No

Country	National RI policy	National body(ies) for RI	RI expertise (officers) in institutions	Member of ENRIO	Misconduct investigation level (institutional, national, other)	Procedure for misconduct investigation defined
Luxembourg	No	Yes (Luxembourg Agency for Research Integrity – LARI)	Yes (LARI Coaches)	Yes	Institutional and national (LARI)	Yes (LARI National Commission for Research Integrity – Rules of Procedure)
Moldova	Yes (Ethical and Professional Deontology Code for Scientific and Scientific-didactical Personnel)	No	No	No	Institutional (Ethics Committees or Commissions)	No
Norway	Yes (Act on Ethics and Integrity in Research)	Yes (The National Commission for the Investigation of Research Misconduct - GRU)	No	Yes	Institutional or national (GRU)	Yes (At the institutional level in accordance with the Research Ethics Act, Public Administration Act, Freedom of Information Act, and Archives Act)
Spain	Yes (Code of Good Scientific Practice; National Statement on Scientific Integrity)	Yes (Ethics Committee of the Spanish Research Council – CSIC)	No	Yes	Institutional or/and national (Deontological Commissions, Ethics Committees, Justice System)	Yes (At the institutional level, e.g. CSIC Workflow Chart)
Sweden	Yes (Good Research Practice by Swedish Research Council)	Yes (Group on Research Misconduct at the Ethical Review Appeal Board)	No	Yes	Institutional or/and national (Appointed Board at the universities; Group on Research Misconduct at Ethical Review Appeal Board)	Yes (At the institutional level; e.g. at the higher education institutions in accordance with Guidelines for universities and colleges in the handling of questions of scientific dishonesty)

Table 4 presents the bodies/institutions that produced policies and guidelines for RI. As for other elements of the RI framework, there is a diversity of practices and bodies that produce RI guidance. The documents are produced mostly at the level of the institutions where research is performed.

Table 4 Origin of the guidelines and policies for RI

Country	Published by ministries	Laws	National bio-ethical committees listed by WHO	National RI governance frameworks	Academies of Sciences - a member of All European Academies	National research organisations (examples)
Austria			Austrian Bioethics Commission issues only recommendations and opinions regarding the ethical point of view on all social, natural scientific and legal issues.	Austrian Agency for Research Integrity (OeAWI) -Guidelines for Good Scientific Practice -Guidelines on the Issue of Dual Use (currently in stakeholder consultation process) -Rules of Procedure for Research Misconduct	Austrian Academy of Sciences was involved in the establishment of the OeAWI. Has a member at the Permanent Working Group of Intellectual Property Rights and Science Education Group at ALLEA.	University of Graz -Principles of Good Scientific Practice Graz University of Technology -Guidelines for Securing Good Scientific Practice University of Vienna and Medical University of Vienna -Guidelines for Good Scientific Practice University of Linz -Guidelines for Ensuring Good Scientific Practice University of Klagenfurt -Ombudsman Guidelines for Good Scientific Practice -Code of Conduct for Good Academic Practice
Bulgaria		The Act for the Development of the Academic Staff in the Republic of Bulgaria	Not listed by WHO		Bulgarian Academy of Sciences (BAS) -Rules of Procedure of the Academic Ethics Committee at Assembly of Academicians and Corresponding Members The Institute for the Study of Societies and Knowledge at the BAS -Code of Ethics	University of Sofia -Code of Ethics for Good Academic Practice The University of National and World Economy -Code of Ethics -Rules of Procedure of the Commission for Academic Ethics Medical University Sofia -Rules of the Ethics Committee of the Scientific Research Burgas Free University -Rules of Conduct Burgas Free University Institute for the Bulgarian Language -Ethical Guidelines for Publication Medical University Pleven -Code of Ethics of the Scientist Bulgarian Sociological Association -Code of Ethics
Denmark	Ministry of Higher Education and Science -The Danish Code of Conduct for Research Integrity	The Danish Parliament -Research Misconduct Act -Research Council Act -Act on Research Ethics Review of Health	The Danish Council of Ethics issues statements and recommendations regarding different health issues and dilemmas (e.g. genome testing, use of antibiotics, health data and biological material, genetic modification).	The Danish Committee on Scientific Dishonesty (today Danish Committee on Research Misconduct) -Guidelines for Good Scientific Practice The Danish Social Science Research Council -Guidelines for Research Ethics in Social Sciences	The Royal Danish Academy of Sciences and Letters -Member of the Science Education Working Group	University of Aarhus -Policy for responsible conduct of research -Codes of practice -Standards for Responsible Conduct of Research Health -Principles on Responsible Scientific Conduct at Health -Principles on Responsible Scientific Conduct at Aarhus Business School -Supplemental Standards of Responsible Conduct of Research at Aarhus BSS University of Copenhagen -Rules on Good Scientific Practice -Booklet – Practical advice regarding good scientific practice -Code of Good Scientific Practice in Research Collaborations with External Partners

Country	Published by ministries	Laws	National bio-ethical committees listed by WHO	National RI governance frameworks	Academies of Sciences - a member of All European Academies	National research organisations (examples)
		Research Projects				<ul style="list-style-type: none"> -Code for Authorship -Code for public sector services <p>Roskilde University</p> <ul style="list-style-type: none"> -Rules on Good Scientific Practice <p>Technical University of Denmark</p> <ul style="list-style-type: none"> -Code of Conduct for Research Integrity -Guidelines for handling suspicions regarding research misconduct and breaches of responsible research -Capacity at DTU -The policy of the Retention of Primary materials and Data -Principles for Good Scientific Practice <p>Copenhagen Business School</p> <ul style="list-style-type: none"> -The concept for CBS' procedure for violation of the Code of Academic Conduct
Estonia	Ministry of Education and Research (in cooperation with Estonian research institutions, Academy of Sciences, and Research Council) -Estonian Code of Conduct for Research Integrity		Estonian Council of Bioethics -Handbook of Codes of Conduct -Code of Conduct for Research Integrity -Codes of Conduct: Values, Norms and Ethical Dilemmas	Estonian Research Council has compiled an integrated document of European Research Integrity Codes and Guidelines and had an important role in developing Estonian Code of Conduct for Research Integrity.	Estonian Academy of Sciences -Member of the Science and Ethics Working group which worked on the development of the European Code of Conduct -In 2002 developed Code of Ethics of Estonian Scientist (outdated)	The University of Tartu Centre for Ethics -Handbook of Codes of Conduct -Code of Conduct for Research Integrity -Codes of Conduct: Values, Norms and Ethical Dilemmas
Finland	Ministry of Social Affairs and Health -Medical Research Act		National Advisory Board on Research Ethics -Guidelines on Research Integrity; Responsible conduct of research and procedures for handling allegations of misconduct in Finland -Ethical principles of research in the humanities	Finnish Social Science Data Archive -Data Management Guidelines Committee for Public Information (TJNK) -Bold communication, responsible influence. Science communication recommendations	The Council of the Finnish Academies -Member of the Science and Ethics Working group which worked on the development of the European Code of Conduct for Research Integrity -Member of the Science Education Working group	Universities of Applied Sciences -Ethical Recommendations for Thesis Writing at Universities of Applied Sciences University of Helsinki -Research Data Policy University of Aalto -Code of Conduct -Research Data Management Policy -Open Access Principles University of Turku -Research Data Guide

Country	Published by ministries	Laws	National bio-ethical committees listed by WHO	National RI governance frameworks	Academies of Sciences - a member of All European Academies	National research organisations (examples)
			and social and behavioural sciences -Supervision of doctoral dissertations and their review process in Finland with a special emphasis on research integrity -Recommendations to universities by the Finnish Advisory Board on Research Integrity and Universities Finland UNIFI -Agreeing on authorship. -Recommendations for research publications			-Data Policy -Publication Policy -Open Research Policy University of Tampere -Open Science and Research Policy University of Lapland • Open Science Policy LUT University • Research Data Policy • Checklist for Open access Publishing and Data Management
France	Ministry of Education and Science -The policy of Scientific Integrity within Research Operators -French Charter for Research Integrity -Order on Council of Deontology		The National Consultative Ethics Committee for Health and Life Sciences publishes advisory opinions.	French Office for Research Integrity (OFIS) -Roadmap for Scientific Integrity 2020	Academy of Sciences -Member of the Science Ethics Working Group and Science Education Working Group Académie des Inscriptions et Belles-Lettre	Inserm -Signature of Scientific Publications: Good Practices French National Research Agency -Charter of ethics and scientific integrity National Center for Scientific Research (COMETS) and Conference of the University Presidents -Integrity and responsibility in research practices National Center for Scientific Research -Scientific Integrity Guidelines COMETS -Ethical reflection on plagiarism in scientific research French Agricultural Research Centre for International Development (CIRAD) -Code of Ethics Vademecum -Scientific Integrity policy
Greece			Hellenic National Bioethics Commission publishes recommendations and opinions. -Reflections On Contemporary Issues, Opinions and Reports 2008-2013	EARTHnet works on the promotion of research ethics and research integrity and on raising awareness on issues regarding RE and RI. The Network of Responsible Conduct of Research in Greece (RCR-Greece)	Academy of Athens -Member of the Science Ethics Working Group -Office of Experimental Physics - Scientists and Society: Needs and Responsibilities (Professor Loucas G. Christophorou)	University of Aegean -Code of Conduct Aristotle University of Thessaloniki -Code of Conduct in Research University of Crete -Code of Ethics University of Macedonia -Code of Conduct University of Thessaly -Ethics Code Athens University of Applied Sciences -Code of Ethics Technological Educational Institute of Crete -Code of Ethics

Country	Published by ministries	Laws	National bio-ethical committees listed by WHO	National RI governance frameworks	Academies of Sciences - a member of All European Academies	National research organisations (examples)
Ireland				The National Forum on Research Integrity position papers -Research Integrity Officer Role and Reporting Structure -The interface between Research Integrity and Research Ethics -Guidelines for the Investigation of Misconduct in Research	Royal Irish Academy -Member of the Science Ethics Working Group -Member of the Truth, Trust, and Expertise Working Group -Worked on the development of the National Policy Statement on Ensuring Research Integrity in Ireland	National forum on Research Integrity -National Policy Statement on Ensuring Research Integrity in Ireland Health Research Board -Policy on disclosure of conflict of interest -Policy on data protection and health information -Policy on alleged misconduct in research -Policy on Open Access to research -Guidelines for host institutions dealing with alleged misconduct in research Irish Research Council -Dignity in the Conduct of Research -Open Access Policy Royal College of Surgeons -Checklist for supervisor report -SOPs for research students -SOPs research and children
Lithuania			Lithuanian Bioethics Committee issues recommendations related to bioethics.	Office of Ombudsperson for Academic Ethics and Procedures of the Republic of Lithuania University Rectors' Conference -Publication ethics guidelines (under development) Lithuanian Research Council -Ethical behaviour of researchers -the Description of the Procedure for the Examination of Notifications Related to Infringements of Ethics of Research Activities at the Research Council -Guidelines on Open Access to Scientific Publications and Data	Lithuanian Academy of Sciences -Charter of the Lithuanian Academy of Sciences	Kaunas University of Technology -Code of Academic Ethics (General principles of academic ethics; Standards of ethics for researchers)

Country	Published by ministries	Laws	National bio-ethical committees listed by WHO	National RI governance frameworks	Academies of Sciences - a member of All European Academies	National research organisations (examples)
Luxembourg			National Ethics Commission (CNE) prepares opinions that are communicated to the Government by the Ministry of Higher Education and Research and are available to the public.	Luxembourg Agency for Research Integrity (LARI) -10 Tips for Robust and Ethical Research Coach Handbook	Luxembourg is not a member.	University of Luxembourg -Research Ethics Guidelines University of Luxembourg -Policy on Ethics in Research Luxembourg National Research Fund (FNR) -Research Integrity Guidelines -Ethics Charter and Code of Conduct for Research Assessment -Policy on Open Access
Moldova			Not listed by WHO	The National Agency for Quality Insurance in Education and Research (ANACEC) recently has adopted the Ethic and Professional Deontology Code for Scientific and Scientific-didactical Personnel	The Academy of Sciences of Moldova (ASM) is a member of ALEEA and its ex-president acad. Gheorghe DUCA is the member of ALEEA Board	State University for Medicine and Pharmaceutics has 2 Ethics committees – one is dealing with professional ethics issues (as in other universities too) and the second one - The Ethic committee for research - is dealing with evaluation of research proposal for respecting Ethics and Bioethics Code Other Universities in Moldova have own Ethics Committee: Moldova State University, Technical University of Moldova, Academy of Economic Studies of Moldova
Norway		The Act on Ethics and Integrity in Research The Act on Medical and Health Research (Health Research Act)	The National Committee for Research Ethics (NEM) -Guidelines for research on persons with impaired informed consent capacity -Guidelines for the inclusion of women in medical research -General guidelines for research ethics	The National Commission for the Investigation of Research Misconduct (GRU) The National Committee for Research Ethics in the Social Sciences and the Humanities (NESH) -Ethical Guidelines for Internet Research -Guidelines for research ethics on human remains -Guidelines for Research Ethics in the Social Sciences, Humanities, Law and Theology The Norwegian National Committee for Research Ethics in Science and Technology (NENT) -Ethical guidelines for science and technology -Research ethics checklist	Norwegian Academy of Science and Letters -Member of the Science Ethics Working Group -Member of the Working Group of Intellectual Property Rights -Member of the Science Education Working Group	University of Oslo -Ethical guidelines -Ethical guidelines for supervisors -10 commandments for ethical practice in research University of Bergen -Ethical guidelines for relations between supervisors and students or candidates at the University of Bergen The Arctic University of Norway -Guidelines for Research Ethics Oslo Metropolitan University -Ethical Guidelines for Research -Ethical Guidelines for Supervision

Country	Published by ministries	Laws	National bio-ethical committees listed by WHO	National RI governance frameworks	Academies of Sciences - a member of All European Academies	National research organisations (examples)
Spain		The Law on Biomedical Research	The Bioethics Committee of Spain -Recommendations of the Spanish Bioethics Committee for the impulse and implementation of Good Scientific Practice in Spain	The Spanish National Research Council -Code of Good Scientific Practices -Manual of Conflicts of Interest -National Statement on Scientific Integrity	Spanish Royal Academy of Sciences -Member of the Core Group of Science Education Working Group Royal Academy of Sciences and Arts of Barcelona -Member of Science Ethics Working Group	University of Barcelona -Agreement on Openness
Sweden	Ministry of Education -Proposal for promoting good practice and managing misconduct in research	The Act concerning the Ethical Review of Research Involving Humans	Swedish National Council on Medical Ethics is an advisory board to the Swedish government and parliament on ethical issues raised by scientific and technological advances in biomedicine.	The Ethical Review Appeal Board - Expert Group on Research Misconduct Swedish Research Council -Good Research Practice	Royal Swedish Academy of Letters, History and Antiquities -Member of the Science Ethics Working Group -Member at the Truth, Trust, and Expertise Working Group The Royal Swedish Academy of Sciences -Member of the Core Group of Science Education Working Group	University of Uppsala -Research ethics and good research practice at Uppsala University Karolinska Institute -Guidelines for planning, conducting and documenting experimental research -Guidelines for planning, conducting and documenting clinical and epidemiological research

5 CHALLENGES

The challenges identified during the Scoping and Kick-off Workshops related to RI structures and processes were related to:

- the variations in RI frameworks in different countries
- definitions of RI vs research ethics and definitions of misconduct vs responsible research
- the expertise and competing interests of members of the RI bodies
- monitoring of institutional bodies
- implementation of RI principles in real life
- the procedures for dealing with research misconduct
- resources for RI structures and processes
- resources for RI structures and processes
- cross-national/cross-institutional/cross-sectoral/cross-disciplinary issues
- emerging issues in RI, such as the consequences of Open Science and General Data Protection Regulation to RI structures and processes.

Some of the above challenges have been addressed or are being addressed by H2020 projects related to research integrity. Also, some of the above challenges may not be relevant for all countries participating in the MLE. Therefore the specific challenges for the first country visit related to the Challenge Topic 1 focused on the procedures for RI investigations. In the situation where the mobility of researchers is increasing, sharing experiences and looking for the possibilities to collaborate on research misconduct cases.

5.1 Challenges related to implementation of principles and requirements in practice and transparency of the process

The questions related to these challenges addressed the following issues:

Q1: How to **translate** national policies to the national level?

Q2: How to **monitor** RI procedures at different institutions and ensure that they are harmonized and consistent within a single country?

Q3: What is the **acceptable level of transparency** before, during and after misconduct procedure?

Q4: Should the **findings** of research misconduct investigation be made public and with what level of anonymization?

Q5: How to **communicate** the finding of misconduct investigation to relevant bodies, such as funding organizations and journals?

5.2 Challenges related to mobility of researchers and collaboration of institutions/structures on research misconduct investigation

The challenges were related to the mobility both among institutions in a single country or between countries:

Q1: How to deal with allegations of misconduct for persons that have already moved from the institution when the allegation is made?

Q2: What to do when the person being investigated moves to another institution?

Q3: What to do with misconduct investigations that are concluded but the person being investigated moves?

Q4: Should institutions check for the history of misconduct allegations with previous employers for newly recruited personnel?

Q5: Should applicants for new positions or grants or the institutions they come from be required to provide a declaration on research integrity?

5.3 Challenges related to whistle-blowers

It has been suggested that the term “whistle-blower” is replaced by the term “witness” in order to remove the negative connotation of the word.²⁷ However, the term “whistle-blower” is commonly used, for example in the newest EU proposal for the protection of whistle-blowers.²⁸

The questions relating to this issue were:

Q1: What are good practices in protecting a whistle-blower?

Q2: How to provide support to whistle-blowers before or at the early stages of misconduct investigation?

Q3: How to protect persons who are either whistle-blowers or innocent associates, such as PhD students?

5.4 Challenges related to sanctions and appeals

Research misconduct investigation results in sanctions. In some countries, appeals can be made to such decisions. There are many open questions related to these issues:

Q1: What are possible sanctions?

Q2: Which sanctions work, do they make a difference?

Q3: Can and should institutions be sanctioned, not only individual?

Q4: How should an appeal process be organised? Should it be possible?

²⁷ Science Europe. Workshop Report. Advancing research integrity practices and policies: from recommendation to implementation. Brussels, 22 February 2017. Available: https://www.scienceeurope.org/wp-content/uploads/2017/05/WS_Report_Integrity_Practices_Policies.pdf.

²⁸ European Commission. Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, 23 April 2018. Available: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018PC0218>.

6 PROCESSES AND STRUCTURES IN PLACE IN PARTICIPATING COUNTRIES

The main outcome of the first RI MLE meeting was the establishment of the RI landscape for the involved countries, which is described in the RI Country Report Cards (see Annex).

RI Country Report Cards may help in benchmarking RI environment in Europe and its future follow up. It may also be a tool for comparing good practices in RI, as well as for increasing awareness of RI. They may also encourage collaborative research into possible ways to strengthen the integrity of the research systems.

The Country Report Cards will be incorporated into the EnTIRE project, an EU project dedicated to development of an online Wikimedia information and discussion platform for RI and research ethics. The EnTIRE platform will be presented at the 6th World Conference on Research Integrity in Hong Kong, 2-5 June 2019, where the results of the RI MLE experience will also be presented.

At the First MLE meeting, dedicated to RI Structures and Processes, the participating countries presented their experiences.

The host, The Norwegian National Committees for Research Ethics, presented the Norway RI system. In Norway, research ethics (including research integrity) is regulated under the Research Ethics Act of 2017, which provides a legal basis for four independent National Research Ethics Committees, covering all fields of research in both private and public sector:

1. The National Committee for Medical and Health Research Ethics (NEM)
2. The National Committee for Research Ethics in Science and Technology (NENT)
3. The National Committee for Research Ethics in the Social Sciences and the Humanities (NESH) (subcommittee on Human Remains)
4. The National Commission for the Investigation of Research Misconduct (GRU).

These four bodies are united under the Norwegian National Committees for Research Ethics, which is an independent unit under the Norwegian Ministry of Education and Research and, among others, is in charge of appointing the members of the committees.

The decisions of the committees can be appealed at the Commission for the Investigation of Research Misconduct (GRU).

This system is legally based on the 2013 Act on organization of research ethics (for public and private institutions), which aims to ensure that research is conducted in line with recognized norms of research ethics and which establishes researcher's duty of care.

The Committees actively work on raising awareness on research integrity through web resources, a magazine, RINO project (on the attitudes on falsification, fabrication and plagiarism (FFP) and questionable research practices), and different guidelines.

While the RI issues are already well-embedded in biomedical and natural sciences, the NESH was established to promote research ethics and research integrity in social sciences and humanities. The NESH issues practical ethics guidelines for research ethics in the social sciences, humanities, law and theology (last revision 2016). The guidelines are living documents and are regularly revised. They are produced by scholars (as a part of the self-regulation principle), and cover 6 fields and dimensions of responsibility for researchers:

1. Obligations towards science,
2. Obligations towards people you do research on,

3. Obligations towards people commissioning research,
4. Obligations towards the scientific community,
5. Obligations towards the public,
6. Specialized guidance on internet research, human remains.

The approach of the Research Council of Norway, the main funding body in Norway, was also presented. Ethics issues are addressed at all funding stages: from guidelines, project proposal calls, proposal assessments, etc., and the funding linked to ethics requirements. All funding applications are assessed on ethics compliance based on the project description. Ethics issues management are a part of the project proposal methodology and are assessed together with, not separated from, the scientific issues. Research ethics is evaluated within a wider context of the responsible research and innovation. The position of the Council is that research organizations are responsible for research integrity and ethics issues.

RI MLE-participating countries presented their experiences from different RI systems (**Table 5**).

Table 5 RI system case studies from MLE-participating countries

Countries with national RI bodies with a legal mandate	
Sweden	Sweden is making organizational changes in the RI system. At the moment, research misconduct investigated on an institutional level; the national board of experts that can give (non-binding) advice to the institutions and the cases cannot be appealed. In the new system, which is expected to be in place in 2020, there will be a national agency for investigation research misconduct (the national board of experts), which will decrease potential bias due to competing interests at the institutions. Also, there will be an appeal process in place. Research misconduct will be defined as serious deviation from good practice – falsification, fabrication and plagiarism, as well as intentional or gross negligence.
Luxembourg	Luxembourg Agency for Research Integrity (LARI) is tasked with the promotion of RI and carrying out investigation for research misconduct. LARI is a non-governmental organization financed by fees from its members (proportional to the size). It is very active in education and coaching and employs creative approaches. LARI has also placed RI coaches at different institutes as the first-line of RI advice. The commission for RI investigations is composed of expert members who come outside of Luxembourg in order to avoid possible conflict of interest.
Countries with national RI bodies without a legal mandate	
Austria	Austria Agency for Research Integrity is a non-governmental organization financed by membership fees; it is independent and not a part of any ministry. Its role is to promote RI-investigation, prevention, training. Members of the RI investigation commission come from outside Austria but one member is an expert on Austrian law. The advantages of such a procedure is that it is independent and trusted because the commission is not seen as part of any institution. The disadvantages include the lack of involvement of the ministry, no national overview, and budget issues to ensure the continued work of the Agency.
Lithuania	Lithuania has an Ombudsman for Academic Ethics and Procedures at the national level, as well as the Ethics Commission at the Research Council of Lithuania. The Ombudsman can inform institutions about allegations and encourage them to open and RI investigation, but cannot formally give penalties and sanctions. The penalties include the ban from public research funding for 5 years. The cases can be referred to court.
Countries without national RI bodies	
Estonia	In Estonia, institutional committees provide oversight on research and they are only medical ethics committees. There is significant conflict of interest in a research community as small as in Estonia but it is difficult to engage outside experts because of language barrier. There is the Centre of Ethics of the University of Tartu, but it deals with the research and theoretical perspective of ethics.

The advantages of such a system are that there are sufficient resources at the institutions, that their independence is ensured and that there are not scandals. The disadvantages include no oversight or overview of the cases and practices, there is little awareness or transparency of RI issues in the wider community

7 THE WAY FORWARD

7.1 General recommendations

Although the exchange of experience from MLE-participating countries showed great variance in the RI structures and processes, it is possible to put forward general recommendations regarding this topic.

Recommendation 1: The definition of research integrity should be agreed at the national level in order to harmonize the processes at all levels in a country's RI system and increase the security and trust of researchers and other stakeholders in the fairness and objectivity of RI structures and processes. Ideally, a distinction between what is defined as research integrity vs research ethics should be made, so that there is either a clear distinction separation of the roles of RI and ethics bodies, or there are unambiguous procedures for bodies that are responsible for mandated for both research ethics and research integrity issues. Finally, a clear definition of the procedures for handling RI allegations is recommended, which takes into account the specificities of RI definitions, available structures and existing legal and organizational frameworks.

Recommendation 2: The professional standards for RI and research ethics (RE) experts should be harmonized across Europe. The recent report from the ENERI project provided clear guidance from wide consultations and evidence on core competencies for RI/RE expertise: ethical competencies, integrity competencies, research experience, legal competencies, ethics assessment/review experience and integrity assessment /review experience. The project also outlined "hard", "soft", "process" and "emotional" skills that desirable for RI/RE experts ought to have. This guidance should be used for selecting the members of RI/RE bodies or used in planning training of future RI/RE experts in countries which have no RI structure or have just began to develop RI structures. Such harmonized set of skills for RI/RE experts, would promote international collaboration in RI structures and processes and particularly benefit those countries with small scientific communities where the problem of conflicts of interests is severe.

Recommendation 3: While there is no "right" RI structure that would fit all historical, legal, cultural and socio-economic differences between countries, it would be advisable to create a national RI body that could help coordinate, monitor, educate, communicate and promote research integrity in a country. National RI bodies would also facilitate communication with other countries, particularly in cases where international collaboration is needed, such as in RI investigations. They should also ensure that international experiences are communicated and adapted to the specific country RI systems.

Recommendation 4: It would be beneficial for RI in the European context that countries join the European Network of Research Integrity Offices (ENRIO) so that the discussions, exchange of experiences and collaboration could be continued beyond occasional activities as this MLE. ENRIO has the potential to become the leading body for promoting, discussing and researching RI in order to ensure knowledge and evidence translation to the national levels.

7.2 Specific recommendations

During the breakout sessions, the participating countries discussed specific issues related to RI investigations and reached consensus on possible recommendations.

1. Overlap of different ethics committees and issues of cooperation

Several countries reported the problem of compatibility and overlap of different ethics committees, as well as of the need for the ethics committees to work independently and at the same time establish cooperation with other bodies.

Recommendation: Cooperation of different committees is necessary, but there should be a balance between the independency of work and collaborative efforts in reaching the decisions. In cases where different ethics bodies may have overlapping or conflicting competencies, it is advisable to have a member in common, so that information flows rapidly and effectively between the bodies.

2. Appeals to the results of RI investigations.

The participating countries had different practices regarding appeals to the results of RI investigations, ranging from the possibility to appeal in all cases (e.g., Bulgaria, Ireland), over appeals only if new data are available (Luxembourg) to no appeals (Denmark). The right to appeal also depends on the RI system in the country – in countries with the highest, national RI bodies, appeals to their rulings are usually not possible.

Recommendation: A system of appeal should be made available, especially in systems without national RI bodies, where institutional bodies may have strong conflict of interest.

3. Conflict of Interest

The greatest problem perceived was the conflict of interest that occurs when RI committees are asked to investigate researchers from the same institution or when the appeals of a case are brought to the same body that issued the first RI investigation decision.

Recommendations: RI committee members should be carefully selected to avoid conflicts of interest. International panels would have the least bias in this regard and should be considered at least at the level of the appeals.

4. RI investigations and mobility

In the past, academic researchers tended to spend a significant part of their career at the same university. Each university had a profile, a research culture of its own and this required commitment. Frequent migrations between universities could be perceived as problematic, i. e. as the lack of commitment or willingness to collaborate. Nowadays, mobility is encouraged and regarded as a strength – migrations from one university to the next is seen as a positive sign, an indication of ambition, a strength on someone's academic CV; mobility is becoming the default. However, mobility between institutions can raise problems, such as those of ownership (of research grants; research data; Ph.D. projects and premiums) but also of RI. Whereas performance in terms of education, acquisition of funding and publication track record can be assessed on the basis of indicators such as student evaluations, citation databases, etc., this is not the case with RI.

Recommendations: RI portfolio, similar to teaching portfolio, could be established, consisting of a certificate indicating that this person is a qualified researcher able to address integrity challenges emerging in research.

This can include, for instance, integrity training as part of a mandatory management training program. In this way researchers/academics would develop an integrity record, which would be meaningful in the context of international collaboration, to ensure that all universities and academics involved have a solid training in addressing integrity issues.

Another **recommendation** is that references to codes and responsibilities should be included into employment contracts at research performing organizations

Special form of mobility – that between the private and public sector – also discussed particularly because of possible differences in research culture. For instance, universities are focussed on publications (and increasingly on open access publications), companies may be more concerned about intellectual property rights.

Recommendation: There should be more open dialogue between the sectors on RI and mobility.

5. Whistle-blowers

In the experience of all participants, being a whistle-blower is hardly ever beneficial to career prospects but it exposes persons involved to harms and risks (isolation, loss of position, loss of career opportunities, etc.). Anonymity of complaints or accusations of misconduct is problematic because the person making the allegation may need to be contacted for evidence regarding the allegation, as the institution needs to substantiate, analyse and assess the seriousness of the complaint.

Recommendation: Policies and procedures for RI investigations should address the important distinction between confidentiality and anonymity and ensure safeguarding of /the confidentiality at all times for all involved in the RI investigation.

8 Annex: Research Integrity Country Report Cards

RI Country Report Cards were created to provide information framework for country visits and discussions of challenge papers. The information for the cards was first collected by the expert writing the Challenge Paper 1 (Ana Marušić), based on the publicly available information. The contribution of Rea Ščepanović, mag. iur., doctoral student at the University of Split School of Medicine, Split, Croatia is acknowledged in the preparation of the RI Country Report Cards. The Cards were updated during updated by the representatives of the countries during the preparation for the first county visit and finalized for the Report 1 of RI MLE.

8.1 Austria

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 8,822,267 	<ul style="list-style-type: none"> http://www.statistik.at/web_de/presse/117062.html
GDP (World Bank)	<ul style="list-style-type: none"> US\$416.596 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=AT&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$47,290 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=AT&view=chart
Number of researchers	<ul style="list-style-type: none"> 78,051 researchers (head count in all sectors) in 2015; 43,562 researchers in full time equivalent 	<ul style="list-style-type: none"> https://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsc00004&language=en http://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsc00004&language=en
Number of research institutions	<ul style="list-style-type: none"> Higher education: 22 public universities, 21 universities of applied sciences, 14 private universities Public non-university research organisations: more than 250 Technology Centres and Clusters: over 60 More than 3000 companies involved in research There are also a number of research institutes that are established by the Länder. 	<ul style="list-style-type: none"> https://www.ffg.at/sites/default/files/pdf/6634b001294341bc87c378da8f6b22870c40c251.pdf https://oepuk.ac.at/privatuniversita%CC%88ten-im-u%CC%88berblick/ https://investinaustria.at/en/research-development/institutions-for-research.php https://tietokayttoon.fi/documents/1927382/3099869/Kuuden+maan+tutkimus-+ja+innovaatiopoliittinen+vertailu/e68b7a35-465d-4183-b7be-914eff95f62
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €10.613 billion (2015) 	<ul style="list-style-type: none"> https://www.bmbwf.gv.at/forschung/national/
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 3.12% GDP (2015) 	<ul style="list-style-type: none"> https://www.bmbwf.gv.at/forschung/national/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Corporate sector: 71.4% Higher education sector: 23.5% State sector (federal institutions, excluding those in the higher education sector): 4.6% Private non-profit sector: 0.5% 	<ul style="list-style-type: none"> http://www.statistik.at/web_de/statistiken/energie_umwelt_innovation_mobilitaet/forschung_und_innovation/f_und_e_in_allen_volkswirtschaftlichen_sektoren/023530.html
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 1.687 funded projects, 2.605 project participations, receiving €988.6 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 132 ERC grants receiving €212.13 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> The Austrian Federal Government Strategy for Research, Technology and Innovation (2011) 	<ul style="list-style-type: none"> https://era.gv.at/directory/158
National bodies for RE+RI	<ul style="list-style-type: none"> Austrian Bioethics Commission The Advisory Board on Biotechnology and Genetic Engineering National Committee for the Protection of Animals used for scientific purposes Austrian Agency for Research Integrity – The Commission for Research Integrity Research Ethics Committees (federal and local) 	<ul style="list-style-type: none"> https://www.federal-chancellery.gv.at/bioethics-commission http://satoriproject.eu/media/4.a-Country-report-Austria.pdf http://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010826 http://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20008142 https://oeawi.at/organs-of-the-association/?lang=en http://www.eurecnet.org/information/austria.htmlwww.ethikkommissionen.at
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> Federal Act concerning the Protection of Personal Data Federal Act on the Organisation of Universities and their Studies (University Act) Genetic Engineering Act Federal Act on Experiments on Live Animals Hospitals and Health Resorts Act R & D Statistics Regulation 	<ul style="list-style-type: none"> http://www.ris.bka.gv.at/Dokumente/Erv/ERV_1999_1_165/ERV_1999_1_165.html http://www.ris.bka.gv.at/Dokumente/Erv/ERV_2002_1_120/ERV_2002_1_120.html https://www.bmbwf.gv.at/fileadmin/user_upload/geotechnikgesetz.pdf

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
		<ul style="list-style-type: none"> • https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=20008142 • https://www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10010285 • https://www.bmbwf.gv.at/forschung/national/forschungsrecht/
Organizational structures for RE+RI	<p>Research integrity:</p> <ul style="list-style-type: none"> • Austrian Agency for Research Integrity is responsible for raising awareness for the Standards of Good Scientific Practice. Moreover, the Agency is responsible for investigating cases of misconduct (done by the Commission for Research Integrity, mainly consisted of non-Austrian researchers and one Austrian member – an expert in Austrian law) and provides advice, as well as training for research integrity. Since the Agency has no legal competence, its opinions are not binding and it is up to each institution whether to apply them. • For the implementation of research integrity and good scientific practice, universities usually have individual guidelines which differ due to their autonomy. In 2015 there was a joint process to agree on common guidelines; all (at that time) 37 member organisations agreed. • In 2016 the Austrian Agency for Research Integrity and Austrian Students Ombudsman found a network for exchange of experience in the area of conflict management, quality assurance and to maintain good scientific practice. Already in 2009 or 2010, the Ministry implied that all universities must have ombudspersons or committees on research integrity. <p>Research ethics:</p> <ul style="list-style-type: none"> • At the national level, Austrian Bioethics Commission, Advisory Board on Biotechnology and Genetic Engineering and National Committee for the Protection of Animals used for Scientific Purposes are government advising bodies regarding research ethics. There are also 27 Ethics Committees in Austria. Some of ECs serve both as a hospital, university, and state committees. The work of committees is supervised by the Federal Office for Safety in Health Care. • Ethical committees at universities are compulsory only for the Medical Universities, which is stipulated by the University Act and additionally regulated by Hospital and Resort Act. In 2002 reorganization of universities led to the establishment of ethics committees at several other nonmedical universities. Today, the majority of Austrian universities have non-statutory ethics committees. Some universities have an ethics advisory board (University of Innsbruck) or commission for research integrity and ethics (Graz University of Technology) or ethics platform (Vienna University of Natural Resources and Life 	<ul style="list-style-type: none"> • https://oeawi.at/wp-content/uploads/2018/06/Brosch.-GWP-Richtlinien-WEB-2017_neu-1.pdf

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>Sciences). Usually, opinions brought by university ethics committees, advisory board and commissions are non-binding and serve as guidelines for researchers.</p> <ul style="list-style-type: none"> Austrian funding agencies also have bodies for ethics assessment of project before funding allocations. 	
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> Unknown. Currently, the Commission for Research Integrity has 8 members who are appointed for a period of 2 years. Universities have Ombudsman Office for ensuring good scientific practice. Some universities have commissions for research integrity. 	<ul style="list-style-type: none"> http://www.hochschulombudsnetz.at/ombudsstellen/
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> Not available. All postdoctoral students have paid positions. They work on temporary contracts which in most cases, in the aspect of remuneration for work, are not negotiable at universities, while they are negotiable at research institutes. 	
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> Austrian Science Fund (FWF): 24.7% Austrian Research Promotion Agency (FFG): 65.4% (2016) Austria Wirtschaftsservice (AWS): 48.3% (2016) 	<ul style="list-style-type: none"> https://www.fwf.ac.at/fileadmin/files/Dokumente/Ueber_den_FWF/Publikationen/FWF-Jahresberichte/fwf-annual-report-2017.pdf https://bmbwf.gv.at/fileadmin/user_upload/forschung/publikationen/FTB_2017_en_WEB.PDF https://bmbwf.gv.at/fileadmin/user_upload/forschung/publikationen/FTB_2017_en_WEB.PDF
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> Austrian Research Promotion Agency (FFG): €400 million Austrian Science Fund (FWF): €217.3 million (the Austrian government approved gradual increase of the budget, and it is expected to be around €290 million in 2021). Austria Wirtschaftsservice: €1.2 billion 	<ul style="list-style-type: none"> https://www.ffg.at/en/content/results-impacts https://www.fwf.ac.at/fileadmin/files/Dokumente/Ueber_den_FWF/Publikationen/FWF-Jahresberichte/fwf-annual-report-2017.pdf https://www.aws.at/en/aws-impactor/
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> In 2015, the Austrian Agency for Research Integrity brought Guidelines for Good Scientific Practice. The guidelines were developed in collaboration with member institutions, hence those institutions implement and follow the guidelines. 	<ul style="list-style-type: none"> https://oeawi.at/prevention/?lang=en
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> Austrian Agency for Research Integrity provides training for researchers in the form of workshops, lectures, and train-the-trainer programs. The training is not mandatory. Usually, universities with Ombudsman Office promote Guidelines of Good Scientific Practice or in their code of conduct stipulate the obligation of professors to communicate good scientific practice among students. 	<ul style="list-style-type: none"> https://oeawi.at/training-overview/?lang=en http://www.hochschulombudsnetz.at/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> Investigations of alleged misconduct are done by the Austrian Agency for Research Integrity, i.e. Commission for Research Integrity. Inquiry can be initiated by members of the Agency and individuals, whereupon the Agency will decide its competence to bring statements in each case. However, those statements don't have any legal influence and it is up to each institution to bring decision about further actions in the possible cases of research misconduct. Besides the Agency, cases of misconduct at Universities are handled by ethics committees or equal bodies. Some cases of proven misconduct were published in media. The Agency for Research Integrity issues annual reports about cases of research misconduct in which the identity of parties is not discovered. 	<ul style="list-style-type: none"> https://oeawi.at/wp-content/uploads/2018/08/Annual-Report_engl_-_2017_final-1.pdf
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> Forum for the Austrian Ethics Committees is a body, representing all ethics committees in Austria. It consists of Board and General Assembly, which have regular meetings once and twice a year. Moreover, the Forum organises annual training for the members of ethics committees. The Austrian Agency for Research Integrity organises annual meetings for its members and celebrated its 10th anniversary with a conference in 2018, moreover, it established bi-annual meetings "Plagiarism – Control and Prevention" in which more than 20 research institutions participate. 	<ul style="list-style-type: none"> http://www.ethikkommissionen.at/ https://oeawi.at/?lang=en
Protection of whistle-blowers	<ul style="list-style-type: none"> The investigation of alleged cases of misconduct is confidential i.e. the identity of whistle-blowers and accused are not revealed. 	
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> Universities have an Ombudsperson for Good Scientific Practice appointed by the institution. Moreover, universities can have an Ethics Officer. Ethics Officer is a contact person for scientific and administrative staff, who provides answers and guidance for questions related to research ethics and supports the Ethics Committee in its work. 	
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> Austrian Agency for Research Integrity is involved in the H2020 projects ENERI, VIRT²UE, and SOPs4RI. Austria 2013: FWF and Institute for Research Information and Quality Assurance (iFQ); Neufeld et al 2014 – more than 3000 Austrian researchers participated. The University of Vienna participates in the INTEGRITY project. 	<ul style="list-style-type: none"> https://oeawi.at/eu-projects/?lang=en https://oeawi.at/wp-content/uploads/2018/09/IFQ_Studie_e_final.pdf https://www.postgraduatecenter.at/university-extension/projekte/integrity/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Annual meetings on research integrity	<ul style="list-style-type: none"> Following the suggestion of Forum of the Austrian Ethics Committees, an annual training course for members of ethics committees is organised by the Centre of Ethics and Medicine of the Lower Austria State Academy. Moreover, the General Assembly of the Forum meets once a year during an annual Forum meeting. Austrian Agency for Research Integrity participates in the ENRIO meetings and organises workshops and training session for research integrity. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/austria.html
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> Yes. Clinical trials require prior approval by the Federal Office for Safety in Health Care (BASG). Moreover, to conduct a clinical trial it is necessary to obtain a positive opinion of the ethics committee. The opinion of one Austrian lead-ethics committee is sufficient for multicentre trials and opinion of a local ethics committee is sufficient for mono-national monocentric trials. The application to the ethics committee must be submitted prior to or simultaneously with the application to the BASG. BASG publishes its decisions online within a period of 35 days. 	<ul style="list-style-type: none"> https://www.basg.gv.at/index.php?eID=tx_news_ecuredl&u=0&q=0&t=0&hash=ed057e0fb385da61f4bf18068a4d60286929bb54&file=fileadmin/user_upload/L_1209_Guidance_CT_submission_en.pdf
Whether research and research data are open and accessible	<ul style="list-style-type: none"> In 2012 the Open Science Network Austria (formerly Open Access Network Austria) was founded by Austrian Science Fund (FWF) and the Austrian University Conference (UNIKO). This was important for the further development of Open Access Strategy and Open Access and Open Data infrastructure. OANA aims to act as a contact point and source of information for researchers, research institutions, and (research) policymakers. Austria is constantly progressing in the area of Open Science, i.e. promoting and developing Open Access and Open Data. The Open Access Strategy 2020 was developed by OANA and UNIKO. By 2025, a large part of all scholarly publication activity in Austria should be Open Access. In other words, the final versions of most scholarly publications (in particular all refereed journal articles and conference proceedings) resulting from the support of public resources must be freely accessible on the Internet without delay (Gold Open Access). This goal should be pursued by taking into account the different disciplinary practices and under consideration of the different disciplinary prioritisation of Open Access. The resources required to meet this obligation shall be provided to the authors, or the cost of the publication venues shall be borne directly by the research organisations. The necessary funding must be brought in line with the overall funding priorities for research. The Austrian Academic Library Consortium (KEMÖ) and the Austrian Science Fund (FWF) have concluded a number Open Access agreements with the publisher.3. To further the transition to Open Access in the scholarly publication system, the FWF together with several research institutions supports Open Access publication models and platforms. 	<ul style="list-style-type: none"> https://www.oana.at/en/ https://www.openscience.or.at/de/ Source: Recommendations for the Transition to Open Access in Austria (2015) - Working Group "National Strategy" of the Open Access Network Austria (OANA) https://zenodo.org/record/51799#.XDavMGepV3C List of institutions with an Open Access Policy: https://www.openaire.eu/item/austria https://www.konsortien.at/openaccess-en.asp https://www.fwf.ac.at/en/research-funding/open-access-policy/open-access-to-peer-reviewed-publications/open-access-publication-models/ https://www.coalition-s.org/funders-and-supporters/ https://www.fwf.ac.at/en/research-funding/open-access-policy/open-access-to-research-data/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> The FWF is a member of cOAlition S and its Plan S. 5. In 2019, FWF has introduced a new Open Research Data Policy and a Research Data Management Plan. 	
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> Yes. There are 27 ethics committees in Austria, of which most are responsible for research conducted by university hospitals and on the national level. Some ethics committees are responsible solely for research outside the hospital. Work of ethics committees is supervised by the Federal Office for Safety in Health Care. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/austria.html
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> Yes. Austrian Agency for Research Integrity is a member of ENRIO since 2009. The Commission for Research Integrity deals with alleged research misconduct, moreover, the agency provides training for research integrity. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/austria/

OUTCOMES

Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> Austria offers a number of incentives for research companies as well as for individual researchers in R&D. Whoever carries out research in Austria pays a lower tax. Funding Agencies work on the promotion of R&D by providing generous funding for research projects. Moreover, the Wittgenstein Prize, most highly endowed science award of the Republic of Austria, is awarded to researchers for the outstanding contributions and scientific work. The award supports award winners in their future research ensuring the independence and further research work. The START prizes are awarded to young researchers funded by FWF. The Klaus Liebscher Award was established in 2005 for young economists for outstanding scientific papers. The Olga Radzyner Award was established in 2000 by Oesterreichische Nationalbank (OeNB). The award is rewarded annually to young economists for excellent on topics of European economic integration. The Franz Weninger Award is established by Oesterreichische Nationalbank for outstanding master and doctoral theses in the field of monetary theory and monetary policy. Some universities also offer awards for research, e.g. University of Innsbruck. 	<ul style="list-style-type: none"> https://www.wifo.ac.at/jart/prj3/wifo/resources/person_dokument/person_dokument.jart?publikationsid=21992&mime_type=application/pdf https://www.fwf.ac.at/en/news-and-media-relations/news/detail/nid/20180613-2301/ https://www.oenb.at/en/About-Us/Research-Promotion/Grants/Klaus-Liebscher-Award.html https://www.oenb.at/en/About-Us/Research-Promotion/Grants/olga-radzyner-award.html https://www.oenb.at/en/About-Us/Research-Promotion/Grants/Franz-Weninger-Award.html https://www.uibk.ac.at/portal/forschende/
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RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether research integrity is a part of institutional quality assessment	<ul style="list-style-type: none"> At some universities, e.g. the University of Vienna, Ombudsman Offices, which are the first contact point for reporting on alleged cases of misconduct, are under the coordination of the Unit for Quality Assurance. Hence, in some institutions research integrity probably is a part of the quality assessment. Ensuring good scientific practice is a part of quality assurance in research at the University of Innsbruck. Research integrity / Research ethics are an integral part of the decision-making process of the Austrian Science Fund (FWF). 	<ul style="list-style-type: none"> https://www.qs.univie.ac.at/en/services/ombuds-office/ https://www.uibk.ac.at/ffg/qs/qs-basis.html https://www.fwf.ac.at/fileadmin/files/Dokumente/Antragstellung/Einzelprojekte/p_application-guidelines.pdf https://www.fwf.ac.at/en/research-funding/research-integrity-research-ethics/
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> The members of the Austrian Academy of Sciences are engaged in informing the general public of important scientific insights and they form commissions to discuss questions which are important for the science and society. 	<ul style="list-style-type: none"> https://www.oeaw.ac.at/en/the-oeaw/about-us/the-oeaw-at-a-glance/
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> Usually, cases of research integrity are dealt with in confidence and decisions are not made public. Some cases of misconduct were reported in the press. There are several initiatives as RRI projects and science shops, "Wiener Vorlesungen". The FWF publishes statistics on suspected cases in an anonymous form, it is updated annually. 	<ul style="list-style-type: none"> https://www.wien.qv.at/kultur/abteilung/vorlesungen/ https://www.fwf.ac.at/en/research-funding/research-integrity-research-ethics/
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> Occasionally. Cases related to research fraud. 	
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> Not clear. Austrian Research Promotion Agency has several funding programs for research conducted through collaboration with different research institutions. 	<ul style="list-style-type: none"> https://www.ffg.at/en/collective-research-0 https://www.ffg.at/en/research-partnerships
Efforts to increase the value of research to society and reduce wasteful research	<ul style="list-style-type: none"> Austrian Agency for Research Integrity has a wide network of national and international organisations and works on promoting research integrity and better science. Strategy for research, technology and innovation of the Austrian Federal Government sets goals for future development. 	<ul style="list-style-type: none"> https://oeawi.at/network-partners/?lang=en https://era.qv.at/directory/158/attach/RTI_Strategy.pdf
Are there any disincentives?	<ul style="list-style-type: none"> Austria does not have a specific law for the regulation of research and possible violations of research integrity. 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> The Austrian Agency for Research Integrity frequently organises lectures, workshops and train-the-trainer activities on research integrity. The Agency provides via their web page various documents regarding the promotion of research integrity (guidelines, reports, recommendations) that can be used for training. Moreover, the Agency participates in the ENERI, VIRT2UE, and SOPs4RI projects. Guidelines for Good Scientific Practice by the Austrian Agency for Research Integrity University of Graz – Principles of Good Scientific Practice Graz University of Technology – Guidelines for Securing Good Scientific Practice University of Vienna and Medical University of Vienna – Guidelines for Good Scientific Practice University of Linz – Guidelines for Ensuring Good Scientific Practice University of Klagenfurt- Ombudsman Guidelines for Good Scientific Practice and Code of Conduct for Good Academic Practice 	<ul style="list-style-type: none"> http://eneri.eu/wp-content/uploads/2017/02/OeAWI_Guidelines-for-Good-Scientific-Practise.pdf https://www.medunigraz.at/fileadmin/forschen/gsp/GSP_Standards_engl.pdf https://www.uni-graz.at/en/researching/organisation-plan/agency-for-scientific-integrity/ https://mibla-archiv.tugraz.at/16_17/Stk_22/RL_Sicherung_guter_wiss_Arbeit_englisch.pdf https://www.meduniwien.ac.at/web/fileadmin/content/forschung/pdf/MedUni_Wien_GSP-Richtlinien_2017.pdf https://www.mpg.de/197494/rulesScientificPractice.pdf https://www.aau.at/en/research/research-profile/good-academic-practice/

8.2 Bulgaria

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 7,050,034 (2017) 	<ul style="list-style-type: none"> http://www.nsi.bg/en/node/16080
GDP (World Bank)	<ul style="list-style-type: none"> US\$56.832 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=BG&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$8,031.598 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=BG&view=chart
Number of researchers	<ul style="list-style-type: none"> 21,081 researchers (head count in all sectors) in 2016; 16,001 researchers in full time equivalent(2016) 	<ul style="list-style-type: none"> http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do https://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsc00004&language=en
Number of research institutions	<ul style="list-style-type: none"> 37 public and 14 private higher education institutions (44 universities and specialised schools, and 7 colleges) Research Institutes: 7 National Centers: 2 Bulgarian Academy of Sciences: 42 autonomous scientific units 	<ul style="list-style-type: none"> http://rvu.mon.bg/HomeEn/IndexEn Source: Strategy for Development of Higher Education in the Republic of Bulgaria for the 2014 - 2020
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €375.4 million (2016) €388.7 million (2017) 	<ul style="list-style-type: none"> https://rio.jrc.ec.europa.eu/en/country-analysis/Bulgaria/key-indicators/25560
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 0.78 % (2016) 	<ul style="list-style-type: none"> https://rio.jrc.ec.europa.eu/en/country-analysis/Bulgaria/key-indicators/25560
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Business enterprises: 70.25% Government: 23.18% Higher education: 5.71% Non-profit organisations: 0.85% 	<ul style="list-style-type: none"> http://www.nsi.bg/en/content/6755/total-intramural-rd-expenditure-qerd-source-funds-and-sectors

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 216 unique participants, 450 participations, received €65.8 million funding from H2020 until 2018 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 1 ERC grant (proof of concept) received €101,930 from H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis
PROCESSES		
Whether a country has a scientific strategy	<ul style="list-style-type: none"> National strategy for Research Development 2017 – 2030 (Better science for better Bulgaria) 	<ul style="list-style-type: none"> https://epluse.tceptt.com/wp-content/uploads/2018/09/20170910-06.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> Ethics Committee for Multicenter Trials Central Committee on Research Ethics Committee on Academic Ethics 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/bulgaria.html http://www.mh.government.bg/en/ministry/commissions/central-ethics-committee/ https://www.mon.bg/bg/100555 (in Bulgarian)
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> Law of Drugs and Pharmacies in Human Medicine (1995) Health Law (2005) Human Medicine Act (2007) Ordinance No. 31 of August 12th, 2007 establishing rules for good clinical practice Ordinance No. 2 of February 5th, 2008 on the requirements for collection, validation and provision of information on unwanted side effects and on the content and format of emergency reports for adverse drug reactions and periodic safety reports Code of professional ethics of doctors in Bulgaria (2000) Rules and Regulations of the Central Ethics Commission to the Council of Ministers on the Law of Medicinal Products in Human Medicine (2007) Rules for the procedure of the commission for professional ethics of Bulgarian Medical Association (2015) Law for the Development of the Academic Staff in the Republic of Bulgaria 	<ul style="list-style-type: none"> https://www.ijournal-imab-bg.org/issues-2017/issue2/JofIMAB-2017-23-2p1587-1590.pdf http://www.eurecnet.org/information/bulgaria.html https://www.mon.bg/bg/100555 (in Bulgarian)

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> Rules for the Application of the Act for the Development of the Academic Staff in the Republic of Bulgaria Rules for the Activity of the Commission for Academic Ethics 	
Organizational structures for RE+RI	<ul style="list-style-type: none"> The Ministry of Education and Science is an overseeing body for education and research in Bulgaria while the Parliament is the decision making a body for the higher education institutions. Ethics Committee for Multicentre Trials is established under the Minister of Health. This ethics committee is responsible for application assessment, for the research that will be conducted in more than one institution in Bulgaria. In the case of single-site clinical trials, the ethics review is conducted by the local ethics committee (LEC) or Ethics Committee for Multicentre Trials. There are around 150 LECs in Bulgaria registered by the Bulgarian Drug Agency. These committees are established across different institutions (universities, hospitals etc.). Each committee has from 7 to 12 members from different fields of medicine and at least two non-medical members. Moreover, at least one member has to be financially independent of the institution. The work of local ethics committees and the Ethics Committee for Multicentre trials is supervised by the Central Ethics Committee which is responsible to the Council of Ministers. The Central Ethics Committee serves as an appeal body for cases that have been rejected by LECs and Ethics Committee for Multicentre Trials and it provides guidance to those committees. Committee on Academic Ethics is appointed by Ministry of Education and Science to conduct an investigation of violations in the award system in science and in taking up academic positions, to investigate conflicts of interest in forming research teams and to detect plagiarism in higher education institutions. 	<ul style="list-style-type: none"> https://www.academia.edu/974562/Institutionalisation_of_Bulgarian_ethics_committees_history_and_current_status http://www.eurecnet.org/information/bulgaria.html https://www.mon.bg/bg/100556 (in Bulgarian)
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> Unknown. This role is usually taken by ethics committees. There are 150 local ethics committees situated within universities, hospitals and institutes across Bulgaria. Each committee has from 7 to 12 members. Moreover, Bulgarian Academy of Sciences participates in Science Europe Working Group on Research Integrity. Central Ethics Committee consists of 9 members while Committee on Academic Ethics has a president and 4 members. 	
Percent-age of postdoctoral students who get paid positions	<ul style="list-style-type: none"> National Programme for Young Scientists and Postdoctoral Students, 2018-2020. The annual budget of the programme is 5 million BGN. Half of the budget is for postdoctoral positions in the best research performing HEIs and RO in Bulgaria for the last 5 years (according to the WoS and SCOPUS data). 	<ul style="list-style-type: none"> https://www.mon.bg/bg/100542 (in Bulgarian)
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> National Science Fund of Bulgaria (NSFB): 18.2% 	<ul style="list-style-type: none"> In 2017 NSFB received a total of 533 project applications from institutions in different scientific fields. 97 projects were approved for funding.

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
		<ul style="list-style-type: none"> • https://www.fni.bg/?q=node/754 (in Bulgarian)
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> • National Science Fund of Bulgaria (NSFB): 16 million BGN (2017); 24 million BGN (2018) 	<ul style="list-style-type: none"> • https://www.fni.bg/?q=node/754 (in Bulgarian)
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> • No. Usually, institutions have their codes or standard operating procedures that serve as a guide for ethics committees. For example, major universities have standard operating procedures for their ethics committees. 	<ul style="list-style-type: none"> • https://www.academia.edu/974562/Institutionalisation_of_Bulgarian_ethics_committees_history_and_current_status
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> • To become a member of the local ethics committee, candidates must finish a training course and obtain a certificate. Moreover, members of the Multicentre Ethics Committee have to complete basic training regarding legal provisions. There are also annual training courses organised by Bulgarian Drug Agency. 	<ul style="list-style-type: none"> • https://www.academia.edu/974562/Institutionalisation_of_Bulgarian_ethics_committees_history_and_current_status • http://www.eurecnet.org/information/bulgaria.html
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> • This role is usually taken by ethics committees which are situated at universities, hospitals, and research institutions. • Ministry of Education and Science has established a Committee on Academic Ethics which provides opinion publicly available opinions regarding received alleged cases of misconduct in academia. 	<ul style="list-style-type: none"> • https://www.mon.bg/bq/100555 (in Bulgarian)
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> • Unknown. Central Ethics Committee gives opinions on deontological and ethical issues in clinical trials when approached by the ethics committees, Bulgarian Drug Agency or by the contracting authority. 	
Protection of whistle-blowers	<ul style="list-style-type: none"> • Bulgaria has no legislation regarding whistle-blower protection or legal definition of whistleblowing. The Administrative Procedure Code (applied only in the public sector allows reporting corruption, mismanagement and other illegal or inappropriate acts that affect state or public interests. Moreover, the Law on Conflict of Interests states that anyone can report an alleged conflict of interest if he/she has information about violations in public office. 	
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> • There are no research integrity officers in Bulgarian research institutions. Usually, ethics committees are responsible for handling cases of research misconduct. Committee on Academic Ethics is responsible for handling cases of 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>misconduct in academia regarding award system, conflict of interest in among science teams and for detecting cases of plagiarism.</p>	
<p>Whether there is research into research integrity and how much funding is there for it and who funds</p>	<ul style="list-style-type: none"> The survey about the impact of policies for plagiarism in higher education explored plagiarism policies in Bulgaria. Questionnaires and interviews were conducted to explore how academic integrity and plagiarism are perceived and handled at in Bulgarian Higher Education institutions. 	<ul style="list-style-type: none"> http://plagiarism.cz/ippheae/files/D2-3-03%20BG%20EX%20IPPHEAE%20CU%20Survey%20Bulgaria%20Exec%20Summary.pdf
<p>Annual meetings on research integrity</p>	<ul style="list-style-type: none"> Ethics committees organise seminars and training but there is no information regarding the frequency of meetings. Bulgarian Drug Agency also organises annual meetings while Bulgarian Academy of Sciences promotes open access policy through conferences and meetings. 	
<p>Whether registration of clinical trials and other research and of their result mandatory</p>	<ul style="list-style-type: none"> Clinical trials including medicinal products and medicinal devices require registration at the Ethics Committee for Multi-Center Trials (if conducted by more than one institution in Bulgaria) or at established ethics committee. Moreover, clinical trials require approval from the Bulgarian Drug Agency. Registration of clinical trials including a medicinal product in human subjects is regulated by the Law on the Medicinal Products in Human Use. Clinical trials for medicinal devices are regulated by the Law on Medical Devices. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/bulgaria.html https://www.bda.bg/images/stories/documents/legal_acts/ZLPHM_en.pdf https://www.bda.bg/images/stories/documents/legal_acts/ZMI_en_20160308.pdf
<p>Whether research and research data are open and accessible</p>	<ul style="list-style-type: none"> Ministry of Education and Science provides national access to scientific information of the best quality, "bibliometric" resources and analytical tools. It is the institution concentrating the national efforts to implement the digital ERA policies on access and preservation of scientific information through building and maintaining high-performing computing, and access infrastructures such as online databases. Additionally, "Bulgarian Information Consortium" has been set-up as an organization, representing academic institutions and libraries, aiming at resource-sharing. A network of scientific Open Access centres was established by the Bulgarian Academy of Sciences (BAS). Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences (IMI-BAS) is the coordinator of the Bulgarian network which provides support for academic institutions and researchers. Moreover, information days on Open Access are organised annually to disseminate information about Open Science, evaluation, copyright, Open Innovation. There are several government documents regarding open access and open science: National strategy for Research Development 2017 – 2030 (Better science for better Bulgaria), Bulgarian National Roadmap for Research Infrastructure 2017-2023, and Diagnostic Review Mapping of Research Infrastructures and Equipment in Bulgaria. Bulgaria has an OpenAIRE Repository which provides free access to the all peer-reviewed publications resulting from ERC funded FP7 projects in Bulgaria. Moreover, some Bulgarian universities have open access repositories (Bulgarian 	<ul style="list-style-type: none"> https://www.openaire.eu/item/bulgaria

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	Academy of Science, New Bulgarian University, University of Sofia St. Kliment Ohridski, Medical University of Sofia - the Central Medical Library, Burgas Free University).	
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> No. 	
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> No. 	
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> Yes. There are several annual rewards for researchers in different scientific disciplines: <ul style="list-style-type: none"> The John Atanasoff Award of the President of the Republic of Bulgaria Pythagoras Awards of the Bulgarian Ministry of Education and Science National Competition Young Talents of the Bulgarian Ministry of Education and Science 	<ul style="list-style-type: none"> https://m.president.bg/en/cat195/Awards https://www.mon.bg/bg/100466 (in Bulgarian) https://www.mon.bg/bg/100122 (in Bulgarian)
Whether research integrity is a part of the institutional quality assessment	<ul style="list-style-type: none"> Criteria for institutional accreditation, developed by National Evaluation and Accreditation Agency, consist some elements that may be a part of research integrity (documents for professional development, advancement and research positions, publication of summaries regarding innovation and research). Bulgaria introduced in 2015 the Research Performance Assessment procedure, using bibliometric counts of publications, weighted on the basis of the quality of journals (papers in the journals of Q1, Q2, Q3, Q4), in combination of Category normalized citation based impact metrics to take into account both the volume as well as the actual impact of the research output. Other factors that are taken into consideration include the integration of research teams in national and international networks, PhD graduates. The system considers the ability of the evaluated organisation to attract funding, patents registered and share of open science publications. The Assessment Committee is to report the annual evaluation analyses of the RO and HEIs performance, presented by research areas. The differentiation between research-oriented HEIs and HEIs focused on tuition is fundamental for the quality improvement. The Ordinance regulating the state subsidies for HEIs specific research activities, (Ordinance, under the art. 91 of the Higher Education Law, on the conditions and procedure for the planning, distribution and spending of the subsidies from the state budget allocated for the specific scientific research or artistic activities of the state higher education institutions) is applied since 2014 and share of funding depends on the results 	<ul style="list-style-type: none"> https://www.neaa.government.bg/images/Criteria_EN/Kriterii_IA_EN.pdf

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>from the application of scientific performance indicators (e.g. publications, citation impact, PhD graduates, patents) of the State HEIs.</p>	
<p>Whether there is research impact assessment and translation of research findings to the community</p>	<ul style="list-style-type: none"> Rules of monitoring and evaluation of research undertaken by universities and scientific organizations as well as the activities of the "Science Fund", issued by the Minister of Education and Science. The Bulgarian Academy of Sciences conducted a study to assess its impacts on society, the role of science and scientific institutions for the development of society, the Interest of the modern Bulgarian to science, the image of science and its place in society and overall perception of the Academy by society. 	<ul style="list-style-type: none"> https://www.mon.bg/bg/100193 (in Bulgarian) Source: The Bulgarian Academy of Sciences – Public Opinion 2018
<p>Public perception of research integrity in their country, and their trust in science</p>	<ul style="list-style-type: none"> The public perception of the role of RI in Bulgaria is low. This appears in many ways a more general problem in many European countries. However, interesting examples exist in which an all-party parliamentary consensus can be developed with both academia and business to secure widespread support for a major national effort on RI. 	<ul style="list-style-type: none"> Source: Peer Review of the Bulgarian Research and Innovation system - Horizon 2020 Policy Support Facility
<p>Whether research integrity is discussed in the lay press</p>	<ul style="list-style-type: none"> Occasionally research integrity is discussed in the press. 	
<p>Whether there are rewards for collaborative science and incentives for networks</p>	<ul style="list-style-type: none"> Pythagoras Awards of the Bulgarian Ministry of Education and Science in the category of leading international project. Operational Programme Science and Education for Smart Growth supported 12 Centres of Excellence and Centres of Competence to be built by 2023 in cooperation with leading EU and international scientists in the particular field. 	<ul style="list-style-type: none"> Bulgarian Ministry of Education and Science has bilateral agreements for Science and Technology with about 40 countries. Bulgarian Academy of Science has established bilateral agreements for cooperation and exchange with several countries. http://www.bas.bg/en/international-cooperation/
<p>Efforts to increase the value of research to society and reduce wasteful research.</p>	<ul style="list-style-type: none"> European Researcher's Night is organised annually in different Bulgarian cities and aims to bring science closer to the general public. The event is composed of workshops and presentations to engage the general public in science by presenting scientific results and knowledge. Sofia Science Festival - Created in 2011 by the British Council and the Forum Democrit, and under the patronage of the Bulgarian Ministry of Education and Science, from its very first year the festival has attracted a large number of supporters. It is a space where there is no dividing line between culture and science. The event features on Sofia City's Cultural Calendar and supported Sofia's bid to become European Cultural Capital in 2019. The Sofia Science Festival is a founding member of the Bulgarian Festivals Association. 	<ul style="list-style-type: none"> https://www.britishcouncil.bg/en/sofia-science-festival https://nauka.bg/category/spisaniie-50/ (in Bulgarian)

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> Nauka.bg – online journal presenting science results, policies and instruments in cooperation between the Ministry of Education and Science and Science Forum Association. 	
Are there any disincentives?	<ul style="list-style-type: none"> PhD candidates in Bulgaria suffer from very low salaries. This makes doctoral studies abroad more attractive, contributing to brain drain and making it hard to recruit international researchers to come to Bulgaria. 	<ul style="list-style-type: none"> Source: Peer Review of the Bulgarian Research and Innovation system - Horizon 2020 Policy Support Facility
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> European Code of Conduct for Research Integrity 	<ul style="list-style-type: none"> https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

8.3 Denmark

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 5,778,570 (2017) 	<ul style="list-style-type: none"> https://www.dst.dk/en/Statistik/emner/befolkning-og-valg/befolkning-og-befolkningsfremskrivning/folketal
GDP (World Bank)	<ul style="list-style-type: none"> US\$324.872 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=DK&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$56,307.51 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=DK&view=chart
Number of researchers	<ul style="list-style-type: none"> 46,985 researchers (head count in all sectors) in 2016; 42,923 researchers in full time equivalent (2016) 	<ul style="list-style-type: none"> https://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsc00004&language=en
Number of research institutions	<ul style="list-style-type: none"> Universities: 8 University Colleges: 6 Public research organisations (Independent sector research institutes and Approved Technological Service Institutes): 12 Private Advanced Technology Groups (research and technology organisations) co-financed by the government: 7 	<ul style="list-style-type: none"> In 2007 many Danish public research organisations were incorporated in universities which led to the reduction in the number of research institutes. 22 nation-wide innovation networks are supported by the Danish government to stimulate collaboration between research performing organisations. Innovation networks contribute to the interaction between universities and companies and the exchange of knowledge among research performing organisations.
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €7.967 million (2016) 	<ul style="list-style-type: none"> https://rio.jrc.ec.europa.eu/en/country-analysis/Denmark/key-indicators/25560
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 2.87% GDP (2016) 	<ul style="list-style-type: none"> https://rio.jrc.ec.europa.eu/en/country-analysis/Denmark/key-indicators/25560
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Business sector: 59% Government sector: 29% Foreign: 7% Private non-profit sector: 5% 	<ul style="list-style-type: none"> https://rio.jrc.ec.europa.eu/en/country-analysis/Denmark/key-indicators/25557(2015)

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 1.547 funded projects, 2.131 projects participations, receiving €889.5 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/ense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 108 ERC signed grants receiving €161.9 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/ense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> Denmark – Ready for the Future (Danmark - Klar til Fremtiden) 	<ul style="list-style-type: none"> https://ufm.dk/en/publications/2018/filer/denmark-ready-to-seize-future-opportunities-pdf.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> The Danish Committee on Research Misconduct (DCRM) The National Committee on Health Research Ethics The Danish Council on Ethics The Animal Ethics Council The Animal Experimentation Council Center for Bioethics and Risk Assessment (CeBRA) 	<ul style="list-style-type: none"> https://ufm.dk/en/research-and-innovation/councils-and-commissions/The-Danish-Committee-on-Research-Misconduct http://www.nvk.dk/ http://www.etiskraad.dk/english http://www.eurofawc.com/home/42 https://www.foedevarestyrelsen.dk/english/Animal/AnimalWelfare/The-Animal-Experiments-Inspectorate/Pages/default.aspx https://bioethics.ku.dk/
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> Animal Welfare Act Research Ethics Review of Health Research Projects Act Clinical Trials Act University Act The Ethics Council Act Research Misconduct Act Executive Order on the Committees on Scientific Dishonesty Governmental Research Institutions Act Public Administration Act 	<ul style="list-style-type: none"> https://www.retsinformation.dk/Forms/R0710.aspx?id=197059 https://www.retsinformation.dk/forms/r0710.aspx?id=137674 https://www.retsinformation.dk/Forms/R0710.aspx?id=203524 https://www.retsinformation.dk/Forms/R0710.aspx?id=198434 https://www.retsinformation.dk/Forms/R0710.aspx?id=9909 https://ufm.dk/en/legislation/prevailing-laws-and-regulations/research-and-innovation/Videnskabeliguredelighedeng.pdf https://www.retsinformation.dk/Forms/R0710.aspx?id=6076

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Organizational structures for RE+RI	<ul style="list-style-type: none"> In 2017 the Danish Research Misconduct Act came into force and established The Danish Committee on Research Misconduct – DCRM (previously Danish Committees on Scientific Dishonesty). The law stipulates the responsibility of DCRM to handle the cases of research misconduct, while the institutions are obligated to process cases of questionable research practices. Several Danish research institutions have established special internal bodies called practice committees, with the purpose of handling internal cases. The practice committees also have a responsibility to ensure responsible research practice among the academic staff. Moreover, some Danish research institutions have special advisors for supporting the good scientific practice. There is no right to appeal on decisions of DCRM to any other administrative authority. Those decisions are legally binding and sent directly to the parties involved in the case. Work of the DCRM and compliance of institutions with the Act is supervised by the Ministry of Education and Science. On the national level, the Danish Council of Ethics provides advice to the Danish Parliament in the aspect of biotechnology. The Danish Center for Bioethics and Risk Assessment provides advice regarding ethics in biological research. Furthermore, the Council for Animal Ethics provides advice and opinions to the Ministry, regarding research involving animals. 11 regional ethics committees in Denmark are coordinated by the Danish National Committee on Health Research. 	
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> Unknown. The Danish Committee on Research Misconduct: a chairman and 8-10 members. The National Committee on Health Research Ethics: chairman, vice-chair and 10 members. The Danish Council on Ethics: chairman, vice-chair and 15 members. The Animal Ethics Council: 12 members. The Animal Experimentation Council: 11 members. There are also 11 regional ethics committees. Universities are also included in the promotion of research integrity by developing guidelines and practices for responsible research conduct and good scientific practice. 	
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> All postdoctoral students have paid positions. 	<ul style="list-style-type: none"> https://studyindenmark.dk/study-options/find-your-international-study-programme/phd-positions-1
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> Independent Research Fund Denmark: 17% 	<ul style="list-style-type: none"> https://dff.dk/aktuelt/publikationer/annual-report-2017-excerpt

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> Independent Research Fund Denmark: DKK 985.2 million Innovation Fund Denmark (IFD): DKK 1.6 billion Danish National Research Foundation (DNRF): DKK 400 million 	<ul style="list-style-type: none"> https://dff.dk/aktuelt/publikationer/annual-report-2017-excerpt https://innovationsfonden.dk/da https://dg.dk/en/about-us/finance/
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> The Danish Code of Conduct for Research Integrity (2014) The Danish Code of Conduct for Research Integrity is not legally binding, however, institutions can integrate the code into their institutional framework. 	<ul style="list-style-type: none"> https://ufm.dk/en/publications/2014/files-2014-1/the-danish-code-of-conduct-for-research-integrity.pdf http://eneri.eu/wp-content/uploads/2018/10/The-danish-code-of-conduct-for-research-integrity-pub.pdf
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> Danish Code of Conduct emphasizes the importance of teaching and training regarding research integrity as well as the responsibility of the research institution to ensure that adequate training and education is provided. Moreover, the Code of Conduct states that PhD and postdoctoral programmes should include specific research integrity teaching and training. Hence, universities and other research institutions provide training for the responsible conduct of research at all levels. 	<ul style="list-style-type: none"> http://eneri.eu/wp-content/uploads/2018/10/The-danish-code-of-conduct-for-research-integrity-pub.pdf
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> The Danish Committee on Research Misconduct (DCRM) is responsible for investigating allegations of research misconduct on the national level, while each institution has a legal responsibility to deal with questionable research practices. Decisions brought by DCRM are legally binding. If there is a possible case of research misconduct (falsification, fabrication and plagiarism), every institution has to make an initial assessment which will determine whether research misconduct is involved. If there has been misconduct in research, the case must be forwarded to DCRM, otherwise, the institution has to deal with the case on the institutional level. DCRM decisions are published in anonymised form, as well as annual report consisting investigated cases. Furthermore, Research Misconduct Act stipulates the obligation of each institution to prepare a report about cases of the questionable research practices. 	<ul style="list-style-type: none"> https://ufm.dk/en/research-and-innovation/councils-and-commissions/The-Danish-Committee-on-Research-Misconduct?set_language=en&cl=en https://ufm.dk/en/research-and-innovation/councils-and-commissions/The-Danish-Committee-on-Research-Misconduct/decisions/decisions https://ufm.dk/en/research-and-innovation/councils-and-commissions/The-Danish-Committee-on-Research-Misconduct/annual-reviews/annual-reviews
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> When a complaint about an alleged case of research misconduct is handed in at the research institution, the institution must assess whether or not the provided information includes research misconduct. There are several conditions that must be completed for the case to be defined as research misconduct and handled to the Danish Committee on Research Misconduct. If so the institution must compose a report and send it to the Committee. Further, the Committee will open an investigation based on the report. At the request of Committee, the research institution at which the research was conducted assists the 	<ul style="list-style-type: none"> https://ufm.dk/en/research-and-innovation/councils-and-commissions/The-Danish-Committee-on-Research-Misconduct

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>Committee regarding specific circumstances of the case. The Danish Research Misconduct Act states that in processing cases of questionable research practices, research institutions can collaborate with other research institutions or external experts. The institutions send an annual report of handled cases of questionable research practices upon which the Committee writes the annual report about research misconduct and status of questionable research practices.</p>	
<p>Protection of whistle-blowers</p>	<ul style="list-style-type: none"> Research Misconduct Act states that anyone can raise a case concerning research misconduct by submitting a notification to the research institution at which the research was conducted. In the same time, the Act does not contain provisions regarding the protection of whistle-blowers. The Danish Code of Conduct states that persons bringing forward suspicions in good faith should be protected from reprisals. 	<ul style="list-style-type: none"> https://ufm.dk/en/legislation/prevaling-laws-and-regulations/research-and-innovation/Videnskabeliguredelighedeng.pdf https://ufm.dk/en/publications/2014/files-2014-1/the-danish-code-of-conduct-for-research-integrity.pdf
<p>Designated research integrity officers in institutions, whether they are mandatory, and who educates them</p>	<ul style="list-style-type: none"> Universities usually have special advisers, practice committees, ethics committees or research integrity officers. For example, at the Aarhus University, special advisers on research integrity provide staff and students with advice regarding responsible research conduct and principles of research ethics. At the University of Copenhagen, the Practice Committee assess issues of good scientific practice and the Technical University of Denmark has Research Integrity Officer in the Office for Research and Relations for handling cases in which breaches of good scientific practice are made. Practice committees are established at the following universities: Aarhus University, Aalborg University, Copenhagen Business School, IT University of Copenhagen, University of Copenhagen, Roskilde University, and University of Southern Denmark. Special advisers are appointed at the following universities: Aarhus University, Copenhagen Business School, University of Copenhagen (Faculty of Health and Medical Sciences, Faculty of Science, Faculty of Law. Faculty of Humanities). 	<ul style="list-style-type: none"> https://medarbejdere.au.dk/en/administration/researchandtalent/responsible-conduct-of-research/ https://praksisudvalget.ku.dk/english/ https://www.dtu.dk/english/Research/Research-at-DTU/Principles_for_good_scientific_conduct
<p>Whether there is research into research integrity and how much funding is there for it and who funds</p>	<ul style="list-style-type: none"> Yes. The Danish Ministry of Higher Education and Science supports the responsible research which should be aligned with the norms, values and expectations of society and create value for society in an ethical and responsible way. For this purpose, the Ministry organised conferences regarding responsible research and innovation. Moreover, research institutions in Denmark participate in the H2020 projects regarding research ethics and research integrity as a leader or partner. 	<ul style="list-style-type: none"> https://ufm.dk/en/research-and-innovation/communicating-research/responsible-research-and-innovation
<p>Annual meetings on research integrity</p>	<ul style="list-style-type: none"> Ethics committees organise an annual meeting for their members and the national committee meets at least twice a year for the purposes of the coordination. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/denmark.html http://www.enrio.eu/news-activities/members/denmark/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> The Danish Agency for Science and Higher Education under the Ministry of Higher Education and Science organises annual meetings with the key stakeholders in Danish research work on the policies for the research integrity. Moreover, there are annual conferences organised by different research institutions regarding RI. 	<ul style="list-style-type: none"> http://edu.au.dk/aktuelt/nyhed/artikel/conference-on-practicing-research-integrity/
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> All research projects conducted in Denmark, involving human beings, human tissue, cells etc. must have a permission from the regional committee. Applications relating to a clinical trial must be submitted to the Danish Health and Medicines Authority and a Regional Committee on Health Research Ethics. Clinical trials concerning complex areas (e.g. for Advanced Therapy Medicinal Products) must be submitted to the National Research Ethics Committee. For the clinical trials of medicinal products, the sponsor must inform the Danish Medicines Agency in the period of 90 days after completion of a trial that the trial has been completed, and if it is a multinational trial the Agency must be informed after the trial is completed in Denmark. No later than one year after the trial has ended, the trial results must be entered in EudraCT. Subsequently, data will be published on www.clinicaltrialsregister.eu. 	<ul style="list-style-type: none"> https://clinicaltrialsdenmark.com/what-do-we-offer/about-us https://laegemiddelstyrelsen.dk/en/licensing/clinical-trials/trials-in-humans/quideline-for-applications-for-authorisation-of-clinical-trials-of-medicinal-products-in-humans#rapport
Whether research and research data are open and accessible	<ul style="list-style-type: none"> Yes. Denmark has a National Strategy for Open Access which forms the basis of work by the Ministry of Higher Education and Science in relation to research publications. The Strategy states that the implementation of Open Access is to take place through the green model and does not exclude the use of the golden model as long as it does not increase the expenses for publication. The goal is to make all publicly funded research publication open access by 2025. 	<ul style="list-style-type: none"> https://ufm.dk/en/research-and-innovation/cooperation-between-research-and-innovation/open-access/Publications/denmarks-national-strategy-for-open-access https://www.openaire.eu/item/denmark https://ufm.dk/en/research-and-innovation/cooperation-between-research-and-innovation/open-access
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> Yes. The Danish National Committee on Biomedical Research Ethics coordinates the work in 11 regional committees and provides guidelines and opinions among researchers. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/denmark.html
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> Yes. Danish Committee on Research Misconduct (DCRM) is a member of ENRIO since 2008. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/denmark/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> The Ministry of Higher Education and Science has a special tax scheme for highly paid employees and researchers who are recruited from abroad and meet certain criteria. They can work in Denmark for a period of 60 months under a special tax rate instead of working under the regular income taxation. The Elite Research Prize is awarded by the Ministry of Higher Education and Science to outstanding researchers under 45 years of international excellence. 	<ul style="list-style-type: none"> https://ufm.dk/en/research-and-innovation/cooperation-between-research-and-innovation/researchers-mobility/the-special-tax-scheme-for-researchers https://ufm.dk/en/research-and-innovation/communicating-research/elite-research
Whether research integrity is a part of institutional quality assessment	<ul style="list-style-type: none"> Yes. Most research institutions in Denmark have implemented the Danish Code of Conduct for Research Integrity and developed guidelines regarding good scientific practice. Moreover, the Code of Conduct for Higher Education Institutions, which was set by all higher education institutions in Denmark, provides ethical guidelines for the recruitment, admission and education of international students. The Danish National Research Fund in its quality assessment from 2013, adheres to the principle of transparency and fairness as essential for scientific community and integrity. 	<ul style="list-style-type: none"> https://dg.dk/en/evaluations-of-the-foundation/ https://en.akkr.dk/ https://studyindenmark.dk/why-denmark/we-welcome-your-perspective-1/TheCodeofConductforhighereducationinstitutions.pdf
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> As a part of institutional accreditation higher education institution must have a quality assurance policy and strategy. In the strategies universities provide future plans for developing the dialogue between research and society. 	<ul style="list-style-type: none"> https://www.e-pages.dk/aarhusuniversitet/893/html5/ https://about.ku.dk/strategy2023/download-pdf/strategy_2023_UK_print.pdf
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> Denmark has a high level of social trust and people usually have a high level of trust in public institutions. 	
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> Occasionally. 	<ul style="list-style-type: none"> Cases of research misconduct.
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> The Danish Agency for Institutions and Educational Grants manages programmes to promote collaboration and interaction between companies and knowledge institutions. There are 22 Danish Innovation Networks which help companies find new partners among scientists, other companies and experts in Denmark as well as abroad. There are also 7 Approved Technological Institutions (GTS) which aim to spread knowledge regarding technology to the business community and thus further the competitiveness of the companies. Companies can buy services from the 	<ul style="list-style-type: none"> https://ufm.dk/en/research-and-innovation/cooperation-between-research-and-innovation/collaboration-between-research-and-industry https://en.gts-net.dk/ https://ufm.dk/en/research-and-innovation/cooperation-between-research-and-innovation/commercialisation-and-

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>GTS-institutes or participate in collaboration projects. The Innovation Incubator provides professional support and funding to the startup companies.</p> <ul style="list-style-type: none"> The Ministry of Higher Education and Science has initiated the internationalisation of Danish science by bilateral cooperation agreements and Innovation Centres abroad. Centres ensure for Danish companies and research institution to access foreign knowledge, networks, technology, funds and markets. 	<p>entrepreneurship/the-innovation-incubator-scheme</p> <ul style="list-style-type: none"> https://ufm.dk/en/research-and-innovation/international-cooperation/global-cooperation
<p>Efforts to increase the value of research to society and reduce wasteful research.</p>	<ul style="list-style-type: none"> Danish Ministry of Higher Education and Science actively works on the promotion of science among the general public. Thus, several events were organised to bring closer researchers, science and society. Moreover, the Ministry is active in the field of responsible research and innovations since it is important for the creation of a dialogue between researchers and citizens. Danish research institutions are participating in a number of Horizon 2020 projects aiming to build an effective approach for cooperation between science and society. In 2012 the Ministry of Higher Education and Science hosted the conference Science in Dialogue. The goal of the conference was to discuss how to develop the dialogue and interaction between science and society. The Elite Research Award highlights the researchers as role models to attract more young students for a career in research. 	<ul style="list-style-type: none"> Euroscience Open Forum Science in the City Festival https://ufm.dk/en/research-and-innovation/communicating-research/euroscience-open-forum-2014 https://ufm.dk/en/research-and-innovation/communicating-research/responsible-research-and-innovation https://ufm.dk/en/research-and-innovation/communicating-research/responsible-research-and-innovation/rri-conference-in-copenhagen
<p>Are there any disincentives?</p>	<ul style="list-style-type: none"> Not clear. 	
<p>Resources for RE+RI training/implementation</p>	<ul style="list-style-type: none"> Guidelines for Research Ethics in Social Sciences (The Danish Social Science Research Council 2002) European Code of Conduct for Research Integrity The Danish Committees on Scientific Dishonesty - Guidelines for Good Scientific Practice University policies for responsible conduct of research and codes of practice to ensure scientific integrity and responsible conduct of research (e.g. by Aarhus University) The Danish Code of Conduct for Research Integrity 	<ul style="list-style-type: none"> https://ufm.dk/publikationer/2002/vejledende-retningslinier-for-forskningsetik-i-samfundsvidenskaberne?searchterm=forskningsetik https://www.allea.org/wp-content/uploads/2017/05/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017.pdf https://ufm.dk/en/publications/2009/the-danish-committees-on-scientific-guidelines-for-good-scientific-practice https://medarbejdere.au.dk/en/administration/researchandtalent/responsible-conduct-of-research/ https://ufm.dk/en/publications/2014/files-2014-1/the-danish-code-of-conduct-for-research-integrity.pdf

8.4 Estonia

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 1,319,133 (2018) 	<ul style="list-style-type: none"> http://andmebaas.stat.ee/Index.aspx?lang=en&SubSessionId=d376290f-d7ea-4a60-8541-b7df465786c2&themetreeid=5
GDP (World Bank)	<ul style="list-style-type: none"> US\$25.921 billion (2017) 23,615 billion EUR (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=EE&view=chart http://andmebaas.stat.ee/Index.aspx?lang=et&DataSetCode=RV021
GDP/Capita	<ul style="list-style-type: none"> US\$19,704.65 (2017) 17 926 EUR per capita (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=EE&view=chart http://andmebaas.stat.ee/Index.aspx?lang=et&DataSetCode=RV021
Number of researchers	<ul style="list-style-type: none"> 7,344 researchers (head count in all sectors) in 2017; 4,674 researchers in full-time equivalent (2017) 	<ul style="list-style-type: none"> http://andmebaas.stat.ee/Index.aspx?lang=en&SubSessionId=39f42f3a-1e1b-4f23-8249-e63d2bf6ed37&themetreeid=3
Number of research institutions	<ul style="list-style-type: none"> Public universities: 6 Public research organisations: 7 Private research institutions: 7 (including 1 private university) Technology clusters: 22 Competence centres: 6 Centres of Excellence: 9 Science and Technology parks: 3 Most research in Estonia is performed at universities, and the leading centre for research and training is the University of Tartu. Centres of Excellence present collaboration of different research groups and as such established for the improvement of scientific research. Competence Centers present cooperation of public authorities, research institutions and enterprises. 	<ul style="list-style-type: none"> http://researchinestonia.eu/research-landscape-2/research-institutions/
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €304,3 million (2017) 	<ul style="list-style-type: none"> http://andmebaas.stat.ee/Index.aspx?lang=en&SubSessionId=39f42f3a-1e1b-4f23-8249-e63d2bf6ed37&themetreeid=3
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 1.29%GDP (2017) 	<ul style="list-style-type: none"> http://andmebaas.stat.ee/Index.aspx?lang=en&SubSessionId=39f42f3a-1e1b-4f23-8249-e63d2bf6ed37&themetreeid=3

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Distribution (%) of private, public and charity funding	2017: <ul style="list-style-type: none"> • Business enterprise 43.6% • Government sector: 40.2% • Higher education 1.0% • Private non-profit sector 0.3% • Funds from abroad 15.0% 	<ul style="list-style-type: none"> • 2017 years GERD data by source of funds is not publicly published at Statistics Estonia but is collected by Statistics Estonia when it was asked separately by Estonian Research Council.
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> • 338 funded projects, 426 project participation, receiving €126.339.562 (by 29.09.2018) 	<ul style="list-style-type: none"> • https://webgate.ec.europa.eu/dashboard/sense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> • 4 ERC signed grants receiving €3.57 million in H2020 (by 29.09.2018) 	<ul style="list-style-type: none"> • https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysishttp://h2020viz.vinnova.se/#/country?countryNames=%5B%22Estonia%22%5D
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> • Estonian Research and Development and Innovation Strategy 2014-2020 – “A Knowledge-based Estonia” 	<ul style="list-style-type: none"> • https://www.hm.ee/sites/default/files/estonian_rdi_strategy_2014-2020.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> • The Estonian Research Council • Project Authorisation Committee for Animal Experiments • Research Ethics Committee of the University of Tartu • Tallinn Ethics Committee on Medical Research 	<ul style="list-style-type: none"> • https://www.etaq.ee/en/estonian-research-council/ • https://www.agri.ee/et/loomkatse-korraldamine • https://www.agri.ee/en/objectives-activities/animal-health-welfare-and-breeding • https://www.ut.ee/en/research-ethics-committee-university-tartu • http://www.tai.ee/en/about-us/tallinn-medical-research-ethics-committee
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> • Medicinal Products Act • Animal Protection Act • Organisation of Research and Development Act • Universities Act • The European Charter & Code for Researchers • Gender Equality Act • Equal Treatment Act 	<ul style="list-style-type: none"> • https://www.riigiteataja.ee/en/eli/ee/513112018001/consolide/current • https://www.riigiteataja.ee/akt/110112017004?leiaKehtiv • https://www.riigiteataja.ee/en/eli/ee/Riigikoгу/act/521052018001/consolide • https://www.riigiteataja.ee/en/eli/ee/513042015012/consolide/current • https://www.riigiteataja.ee/en/eli/521032014002/consolide/current • https://euraxess.ec.europa.eu/jobs/charter

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
		<ul style="list-style-type: none"> • https://www.riigiteataja.ee/en/eli/ee/530102013038/consolide/current • https://www.riigiteataja.ee/en/eli/ee/530102013066/consolide/current
Organizational structures for RE+RI	<p>Research integrity:</p> <ul style="list-style-type: none"> • The Estonian Research Council promotes research integrity in Estonia, but at the national level, there is no institution appointed for the implementation of research integrity among different institutions. The Council had an important role in writing the Estonian Code of Conduct for Research Integrity. <p>Research ethics:</p> <ul style="list-style-type: none"> • Research Ethics Committee of the University of Tartu and Tallinn Ethics Committee on Medical Research are two main ethics committees on biomedical research involving human subject. Together with the Project Authorisation Committee for Animal Experiments, these committees provide oversight on research. There are also two clinical ethics committees, the Ethics Committee of the Tallinn's Children Hospital and Ethics Committee of the Tartu University Hospital. Other ethics committees are the Ethics Committee of the Estonian Medical Association, Health Information System Ethics Committee, Ethics Committee of the Association of Pharmaceuticals Manufacturers in Estonia, and Ethics Committee of the Estonian Social work Association. The activities of the committees are coordinated by the Estonian Council of Bioethics. The Council provides advice, regarding bioethics questions, for policymakers and governmental institutions. Moreover, the Council works on the preparation of relevant laws, acts, and educates public about issues in bioethics. • The Ethics Centre of the University of Tartu had an important role in writing the Estonian Code of Conduct. The centre is mostly scientifically oriented but it is also active in addressing ethical topics in society. 	<ul style="list-style-type: none"> • https://www.eetikakeskus.ut.ee/en • https://www.etag.ee/wp-content/uploads/2017/12/HEA-TEADUSTAVA_eng.pdf.
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> • Unknown. • The Estonian Bioethics Committee is composed of a chairman, deputy chairman and 5 members while the Committee of the Estonian Research Council has 15 members. • Research Ethics Committee of the University of Tartu: 14 members • The Tallinn Medical Research Ethics Committee: 11 members • Project Authorisation Committee for Animal Experiments: 17 members • Tallinn's Children Hospital: 15 members • Ethics Committee of the Tartu University Hospital: 10 members 	
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> • 100%. In Estonia, there are no postdoctoral students but only postdoctoral researchers. As such they have to be paid by law (no one can in Estonia work legally without being paid). 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> The Estonian Research Council: <ul style="list-style-type: none"> Institutional Research Grants 49% (2013-2015 average) Personal Research Grants 21% (2018 call) 	<ul style="list-style-type: none"> https://www.etag.ee/wp-content/uploads/2015/12/TA_teaduskoikumik_ENG_veeb.pdf
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> The Estonian Research Council: €26.7 million 	<ul style="list-style-type: none"> https://www.etag.ee/wp-content/uploads/2018/03/New-Framework-of-Grants-and-Baseline-Funding_2016_short-version.pdf https://www.etag.ee/teadusagentuur/avalik-teave/eelarved/2018-aasta-eelarve/
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> Estonian Code of Conduct for Research Integrity Estonian Research Council has compiled an integrated document of European RI Codes and Guidelines 	<ul style="list-style-type: none"> https://www.eetika.ee/sites/default/files/www_ut/hea_teadustava_eng_trukis.pdf https://www.etag.ee/wp-content/uploads/2017/10/Overview-of-the-Research-Integrity-Principles-and-Guidelines_ETAg_ENG.docx.pdf
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> The Center for Ethics of the University of Tartu organises lectures and congresses, publishes textbooks to improve knowledge of ethics in research. 	<ul style="list-style-type: none"> https://www.eetika.ee/en/ethics-estonia-0
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> This role is usually taken by ethics committees at the research institutions. For example, the Statute of the Research Ethics Committee of the University of Tartu states that in the case of the violation of research ethical principles, a member of the Committee has the right to delay the processing of the application or its approval until the circumstances are clarified. The Estonian Code of Conduct for Research Integrity emphasizes the confidentiality of all parties involved in cases of violations of research integrity. 	<ul style="list-style-type: none"> https://www.ut.ee/sites/default/files/ut_files/Tartu%20%C3%9Clikooli%20inimuuringute%20eetika%20komitee%20statuut_eng_Dima_puh_as.pdf

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> Estonian Research Ethics Committees write annual reports to the State Agency of Medicines and to the governmental bodies of their institution. Moreover, research ethics committees share information with each other. Twice a year seminars for research ethics committees are organised for the purposes of networking. The Centre for Ethics at the University of Tartu has ongoing cooperation in organising conferences and other educational activities with the Estonian Bioethics Council, the Tartu University Human Subjects Research Committee, and the Tartu University Clinic Ethics Committee. 	
Protection of whistleblowers	<ul style="list-style-type: none"> Anti Corruption Act provides information regarding the protection of whistleblowers who reported corruption. The Estonian Code of Conduct for Research Integrity states that the research institution ensures the confidentiality of dealing with possible breaches and protects the dignity and inviolability of private life of all the parties involved. 	<ul style="list-style-type: none"> https://www.riigiteataja.ee/en/eli/ee/521082014007/consolide/current
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> The PRINTEGER project conducted the analysis whether there are institutional bodies among research institutions officially responsible for dealing with cases of research misconduct. The respondents mentioned various bodies: Academic commission of the University, Immediate supervisor, Vice-rector for research and for more serious cases Academic Commission, research director, Academic Court, Vice rectors of academic affairs or research and if necessary, Commission of Research, Ethics Committee or Board of Research, Research Secretary, Research Secretary or Head of Human Resources, Director or Board. 	
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> The University of Tartu is working on several projects regarding ethics and integrity in research. Projects are usually financed by the Estonian Ministry of Education and Science, European Union funds and some projects are done in the collaboration with other countries and financed by their funds. Center of Ethics at the University of Tartu participated in the PRINTEGER and PRO-RES projects. 	<ul style="list-style-type: none"> https://www.eetikakeskus.ut.ee/en/research/past-projects-0
Annual meetings on research integrity	<ul style="list-style-type: none"> Center for Ethics at the University of Tartu organises annual conferences and events for the promotion of ethics among different scientific disciplines. Research ethics committees gather twice a year at seminars. 	<ul style="list-style-type: none"> https://www.eetikakeskus.ut.ee/en/research/events https://www.eetikakeskus.ut.ee/en/publicactivities/events http://www.eurecnet.org/literature/information/estonia.html
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> Registration of clinical trials including medicinal products is mandatory and regulated by the Medicinal Products Act. 	<ul style="list-style-type: none"> https://www.ravimiamet.ee/en/clinical-trials-medicinal-products-estonia

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether research and research data are open and accessible	<ul style="list-style-type: none"> • There is no official Open Access or Open Science policy in Estonia but in 2015, Estonian Research Council established an expert committee on open science to create recommendations for the development of national open science policy, which were published in 2016. Estonian Research Council coordinates Open Science policy in the country by organising various events in cooperation with other institutions. • However, some research-performing institutions and research funding institutions have open access policies and repositories. 	<ul style="list-style-type: none"> • https://www.openaire.eu/item/estonia • https://www.etag.ee/en/activities/horizontal-topics/open-science/ • https://www.etag.ee/wp-content/uploads/2017/03/Open-Science-in-Estonia-Principles-and-Recommendations-final.pdf • https://utlib.ut.ee/en/open-science
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> • Yes. Research Ethics Committee of the University of Tartu and Tallinn Ethics Committee on Medical Research are two main committees assessing various projects in the area of biomedical research involving humans. 	<ul style="list-style-type: none"> • http://www.eurecnet.org/information/estonia.html
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> • Yes. Estonian Research Council, the main research funding organisation in Estonia, is ENRIO member since 2014. 	<ul style="list-style-type: none"> • http://www.enrio.eu/news-activities/members/estonia/

OUTCOMES

Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> • The Estonian Ministry for Education and Science annually awards National Research Awards to researchers and research teams for outstanding lifetime achievement in research and development, best completed and published research work in different scientific fields, and for outstanding scientific discovery. • Estonian Academy of Sciences: <ul style="list-style-type: none"> - Endel Lippmaa Memorial Lecture and Memorial Medal are awarded by the Estonian Academy of Sciences for fostering transdisciplinary communication of scientific discoveries and it highlights the mission of the scientist in and for the society. - Memorial medals (disciplinary) are awarded in the different scientific fields - Medal of the Estonian Academy of Sciences is the highest prize awarded to individuals for outstanding contribution to the development of Estonian science - Scholarships of the Academy are awarded to support completion of monographic research works and popular science books, their layout and editing - Student research prizes are monetary prizes awarded to students who have attained outstanding results in scholarly work. The aim is to encourage talented students to pursue independent research projects. • Estonian Science Communication Award is granted jointly by the Estonian Academy of Sciences, the Estonian Research Council and the Ministry of Education and Research. It is awarded to individuals or to the group of researchers for popularisation of science in the society. 	<ul style="list-style-type: none"> • https://www.hm.ee/en/activities/research-and-development/national-research-awards • http://www.akadeemia.ee/en/activity/medals_prizes_scholarships/ • https://www.etag.ee/en/activities/science-communication/estonian-science-communication-award/
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RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether research integrity is a part of the institutional quality assessment	<ul style="list-style-type: none"> Conditions and Procedure for Institutional Accreditation issued by the Estonian Quality Agency for Higher and Vocational Education mentioned that employees should base their activities on the principles of academic ethics. 	<ul style="list-style-type: none"> http://ekka.archimedes.ee/wp-content/uploads/IA_procedure11.11.16.pdf
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> The Estonian Research Council is responsible for the evaluation of the research and development activities in research institutions. The Estonian Research Information System (ETIS) provides information about researchers, projects and research results. 	<ul style="list-style-type: none"> https://www.etag.ee/en/activities/rd-evaluation/ https://www.etis.ee/Portal/News/Index/?IsLandingPage=true&lang=ENG
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> Statement of the Estonian Presidency of the Council of the EU "Tallinn Call for Action 2017" emphasizes the importance of building trust between research and society. This would be done on several levels, including academia, media, research performing organisations and research funding organisations. 	<ul style="list-style-type: none"> https://www.hm.ee/sites/default/files/tallinn_call_for_action_2017.pdf
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> Occasionally. 	<ul style="list-style-type: none"> Articles about the contribution of the Center for Ethics were published by several media.
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> Collaborative science is promoted by the Estonian Research Council through various programs and organisations which offer project grants: <ul style="list-style-type: none"> Mobilitas Plus partnership and Co-operation Funding Baltic Research Cooperation Programme NordForsk ERA-NET Cofund Bonus Programme In the personal research funding applications (grants awarded by ETAG), one assessment criterion is international cooperation. 	<ul style="list-style-type: none"> https://www.etag.ee/en/funding/partnership-funding/ Evaluation guidelines: https://www.etag.ee/en/funding/research-funding/personal-research-funding/call-2018/
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> OpenGENE—Opening Estonian Genome Project for European Research Area is conducted in order to raise public awareness of ethical issues related to gene banks and to increase people's trust towards data banks. The Estonian Research Information System (ETIS) is a national register in which information on R&D institutions, researchers, projects and research results are presented and open for everyone. Research Libraries responsible for the collection, preservation and processing of scientific information and making such information available by providing public services. 	<ul style="list-style-type: none"> https://www.eetikakeskus.ut.ee/sites/default/files/eetikakeskus/files/From%20Philosophical%20Ethics%2C%20Bioethics%20and%20Medical%20Ethics%20to%20the%20Ethics%20of%20Science%20and%20New%20Technologies.pdf https://www.etis.ee/?lang=ENG https://www.hm.ee/en/activities/research-and-development/financing-infrastructure

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Are there any disincentives?	<ul style="list-style-type: none"> The key issues mentioned in the Estonian Research and Development and Innovation Strategy 2014-2020 and Proposals for the Organisation of Research Funding are lack of unity and critical mass in many fields, insufficient motivation and capacity for cooperation between universities and enterprises, separation of research from the economy and society, the low social benefit of research, development and innovation. Moreover, the research system is focused on the public funds with little effort made to get private funds and the research is project-based rather than result-oriented and quality-based. 	<ul style="list-style-type: none"> https://www.etag.ee/wp-content/uploads/2018/03/New-Framework-of-Grants-and-Baseline-Funding_2016_short-version.pdf
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> Estonian Code of Conduct for Research Integrity Publications of Estonian Centre for Ethics 	<ul style="list-style-type: none"> https://www.eetika.ee/en/ethics-estonia/estonian-code-conduct-research-integrity https://www.eetika.ee/en/publications-4 https://www.etag.ee/en/activities/horizontal-topics/research-integrity/

8.5 Finland

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 5,531,531 (10.1.2019) 	<ul style="list-style-type: none"> https://vrk.fi/en/frontpage
GDP (World Bank)	<ul style="list-style-type: none"> US\$258.479 billion (2017) 	<ul style="list-style-type: none"> http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin_kan_vtp/statfin_vtp_pxt_001.px/?rxid=14307f26-4728-4328-8b8c-6fce893020c0
GDP/Capita	<ul style="list-style-type: none"> US\$46,926.08 (2017) 	<ul style="list-style-type: none"> http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin_kan_vtp/statfin_vtp_pxt_003.px/?rxid=14307f26-4728-4328-8b8c-6fce893020c0
Number of researchers	<ul style="list-style-type: none"> 72,621 researchers (head count in all sectors) in 2017; 48,998.5 researchers in full time equivalent (2017) 	<ul style="list-style-type: none"> http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin_ttt_tkke_yht/statfin_tkke_pxt_001.px/?rxid=14307f26-4728-4328-8b8c-6fce893020c0
Number of research institutions	<ul style="list-style-type: none"> Universities: 14 Universities of Applied Sciences: 25 Public research institutes: 12 Science agencies and research institutes under the steering of the Ministry of Education and Culture: 4 Finnish Academic Institutes abroad: 4 Other expert bodies and collaborative organisations: 11 Research libraries: The National Library of Finland, the libraries of universities and universities of applied sciences, Library of Parliament, Library of Statistics and other specialised libraries at research institutes, government agencies, and museum. Non-profit limited company: CSC – IT Center for Science Ltd (owned by the State and higher education institutions) 	<ul style="list-style-type: none"> https://minedu.fi/en/heis-and-science-agencies
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> USD 7.1 billion (2017) 	<ul style="list-style-type: none"> http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin_ttt_tkke_yht/statfin_tkke_pxt_001.px/?rxid=14307f26-4728-4328-8b8c-6fce893020c0

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 2.76% GDP (2017) 	<ul style="list-style-type: none"> https://www.stat.fi/til/tkke/2017/tkke_2017_2018-10-25_kat_001_en.html
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Companies: 65.3% Public and non-profit sector: 25.4% Higher education: 9.4% 	<ul style="list-style-type: none"> http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin_ttt_tkke_yht/statfin_tkke_pxt_001.px/?rxid=27e48ee7-5669-467e-bcdc-7c1d7b7878b4
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 1.206 funded projects, 1.832 projects participations, receiving €766.2 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/ense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 91 ERC grants receiving €146.48 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/ense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis

PROCESSES

Whether a country has scientific strategy	<ul style="list-style-type: none"> Finland's Strategy and Roadmap for Research Infrastructures 2014–2020 	<ul style="list-style-type: none"> https://www.aka.fi/globalassets/awanhat/documents/firi/tutkimusinfrastruktuurien_strategia_ja_tiekartta_2014_en.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> Finnish National Board on Research Integrity (TENK) National Advisory Board on Social Welfare and Health Care Ethics (ETENE) National Committee on Medical Research Ethics (TUKIJA) Council on the protection of animals used for scientific or educational purposes National Advisory Board on Biotechnology Board for Gene Technology 	<ul style="list-style-type: none"> http://www.tenk.fi/en https://etene.fi/en/frontpage https://tukija.fi/en/frontpage https://mmm.fi/en/laboratory-animals http://www.btnk.fi/en/ https://qeenitekniiKANlautakunta.fi/en/frontpage
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> Finnish National Board on Research Integrity TENK Decree on the National Committee on Medical Research Ethics Medical Research Act Gene Technology Act Status and Rights of Patients Act Decree on Animal Experimentation Decree on Clinical Trial on Medicinal Products Act on the Medical Use of Human Organs, Tissues and Cells Personal Data Act Act on the Openness of Government Activities 	<ul style="list-style-type: none"> https://www.finlex.fi/fi/laki/alkup/1991/19911347 http://www.finlex.fi/en/laki/kaannokset/2010/en20100820_20100820.pdf http://www.finlex.fi/en/laki/kaannokset/1999/en19990488_20100794.pdf http://www.finlex.fi/en/laki/kaannokset/1995/en19950377_20100955.pdf http://www.finlex.fi/en/laki/kaannokset/1992/en19920785_20120690.pdf http://www.finlex.fi/fi/laki/ajantasa/kumotu/2006/20060062

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
		<ul style="list-style-type: none"> • http://www.finlex.fi/fi/laki/alkup/2005/20050316 • http://www.finlex.fi/en/laki/kaannokset/2001/en20010101_20130277.pdf • http://www.finlex.fi/en/laki/kaannokset/1999/en19990523_20000986.pdf • http://www.finlex.fi/en/laki/kaannokset/1999/en19990621_20150907.pdf
Organizational structures for RE+RIs	<ul style="list-style-type: none"> • Finnish National Board on Research Integrity (TENK) is established for the advancement of research ethics in Finland. TENK provides proposals and statements to governmental bodies and it is an expert body for ethical issues in research. TENK guidelines for responsible conduct of research and procedures for dealing with misconduct were signed by all universities, majority of universities of applied sciences and publicly funded research institutions. Guidelines suggest that each institution should deal with possible cases of misconduct. When the report provided by the institution is unsatisfying for parties involved, they can ask opinion from TENK. • TENK has also launched a mechanism for ethical review in human sciences, see the guidelines: https://www.tenk.fi/en/ethical-review-in-human-sciences • A new Responsible Research website: https://www.vastuullinentiede.fi/en • The Advisory Board on Biotechnology is promoting cooperation between authorities and researchers in the aspect of biotechnology, and the Board for Gene Technology is responsible for supervising the use of genetically modified organisms in accordance with Gene Technology Act. • National Advisory Board on Social Welfare and Health Care Ethics (ETENE) publishes statements and disseminates information about ethical issues. • While all universities have ethics committees as a part of their organizational structure, some universities of applied sciences are under ethics committees of universities in their area, while others joined together to form ethics committees. Universities also have Research integrity advisors educated by TENK. They provide advice to researchers and other staff regarding research integrity and its violations. 	
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> • Finnish National Board on Research Integrity (TENK) has 10 members and a secretary with 5 persons. Moreover, universities have ethics committee members and there are around 100 advisors in 60 research institutions. The advisors are trained and appointed by TENK to provide advice on research integrity. 	
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> • Postdoctoral students employed on fix terms have paid positions and the salary depends on qualification and job performance. Academy of Finland provides funding for the research conducted by their research institution. 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> Academy of Finland: 10-20% (depending on funding instrument). 	<ul style="list-style-type: none"> https://www.aka.fi/globalassets/42julkaisut/processing-and-reviewing-2018.pdf
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> Academy of Finland: €444 million (2017) Business Finland: €510 million (2017) (previous TEKES) 	<ul style="list-style-type: none"> http://www.aka.fi/en/about-us/ https://www.businessfinland.fi/globalassets/julkaisut/esitys_business_finland_innov_aatiotoiminta_2017-dm-1976449.pdf
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> Responsible conduct of research and procedures for handling allegations of misconduct in Finland (Guidelines of the Finnish Advisory Board on Research Integrity 2012) 	<ul style="list-style-type: none"> http://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> TENK provides annual training for advisors who are later appointed to research institutions to give advice concerning research integrity. Moreover, TENK provides online courses regarding research ethics and open science, organises seminars on research RE+RI. PhD programs at universities use online courses for the education on research integrity. There is some training in research integrity for teachers at universities and universities of applied sciences regarding RI but it should be further developed and adapted in institutions. 	<ul style="list-style-type: none"> https://www.vastuullinentiede.fi/en/doing-research/teaching-and-learning-research-integrity
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> Alleged violations of research misconduct are primarily the responsibility of the research organisations. Research organisations who signed the agreement for adhering to TENK guidelines have taken the responsibility to follow the procedures named in guidelines when it comes to dealing with cases of alleged violations of the responsible conduct of research. The decision whether a violation of research integrity occurred is brought by the rector of the university, or if the university so decides, the chancellor, or the rector of a university of applied sciences, or the director of the research organisation. The allegations of research misconduct and decision related to the allegations are reported to TENK for the purpose of monitoring the compliance with guidelines. If a party in the process is unsatisfied with the decision, the TENK statement regarding the case can be requested in the period of 6 months. TENK does not publish its concrete decisions, but according to the Finnish law of general publicity, all official documents are available for stakeholders. Usually, rector investigates the alleged violations of research integrity upon the notification but in some cases, it can conduct the investigation of allegations that have come to his/her attention from other channels. Furthermore, TENK can also initiate the investigation if it has reasons to suspect misconduct occurred at the research organisation. 	<ul style="list-style-type: none"> https://www.tenk.fi/en/investigation-of-allegations

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> • If the allegations of research misconduct are unfounded the rector's decision to stop the investigation process can be publicly announced. • Moreover, if the investigation confirms the research misconduct the findings contained in the final report must be published at least in the publication channel where the fraudulent research findings or results based on fraudulent means have already been published. If the investigation finds that the person alleged of misconduct has not violated the responsible conduct of research, an effort must be made to publish the findings of the investigation in an appropriate publication channel if the person alleged of misconduct wants, or if there are other compelling reasons. TENK statements are publicly available and in its annual report cases of research misconduct are presented in the anonymous form. 	
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> • Finnish institutions have a high degree of cooperation when it comes to handling violations of research integrity and research ethics. Organisations cooperate with TENK regarding alleged violations of research integrity and if those researchers have worked in several research communities, the handling of alleged misconduct requires cooperation between organisations, which have to agree in which way to conduct the investigation. National Committee on Medical Research Ethics (TUKIJA) organises seminars for regional ethics committees and with other national and regional committees regarding research and ethics. Moreover, national seminars and local meetings are organised by regional ethics committees. There are at least four occasions yearly where ethics committees can share information with each other. 	<ul style="list-style-type: none"> • https://www.tenk.fi/en/investigation-of-allegations • http://www.eurecnet.org/literature/information/finland.html
Protection of whistleblowers	<ul style="list-style-type: none"> • According to TENK guidelines, the written allegation of research misconduct can't be submitted anonymously. Moreover, in accordance with The Act on Openness of Government, the research organisation is when sending the documents to TENK, obliged to take into account the secrecy obligations that apply to the information included in the documents. 	<ul style="list-style-type: none"> • https://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> • Finnish National Board on Research Integrity (TENK) has created a network of Research Integrity Advisers. TENK has trained more than 100 advisers in more than 60 research organisations who provide advice to researchers and other staff in their organisations. There are advisers in the majority of Finnish research organisations and their contact details can be found on the organisation's web page. The advisers attend annual training offered by TENK. 	<ul style="list-style-type: none"> • https://www.tenk.fi/en/research-integrity-advisers • https://www.tenk.fi/fi/node/225
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> • Yes. TENK conducted several projects in cooperation with other organisations and the TENK Chair serves as an expert in several international projects and working groups. • Information Sharing Creates Impact - run jointly by TENK and the Committee for Public Information (total funding of €200,000) 	<ul style="list-style-type: none"> • https://www.tenk.fi/en/annual-reports

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> TENK and the University of Helsinki participated in the planning of the ENERI project 	
Annual meetings on research integrity	<ul style="list-style-type: none"> TENK organises regular discussion regarding research integrity and guidelines, Moreover, the Ethics Day is an annual seminar on ethical issues in science organised by TENK and other national ethical advisory boards. TUKIJA organizes seminars with other national and regional committees on research and ethics. 	<ul style="list-style-type: none"> https://www.tenk.fi/fi/tapahtumat2
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> Registration of clinical trials of the medicinal product and medical devices is mandatory. Moreover, the ethics committee permission must be obtained and for the trials not involving medicinal products, i.e. for therapeutic and biomedical trials. Besides regional ethic committees and National Ethics Committee, clinical trials involving medicinal products must be reported to the Finnish Medicine Agency (FIMEA). The sponsor or the person responsible for the trial must provide a report on the results of the trial to FIMEA, not later than one year after the trial ends. The report on the results must also be submitted to the EU Clinical Trials Register. 	<ul style="list-style-type: none"> https://www.clinicaltrialsfinland.com/research-process/ https://www.fimea.fi/web/en
Whether research and research data are open and accessible	<ul style="list-style-type: none"> In Finland, Open Science activities are coordinated by The Federation of Finnish Learned Societies. The coordination is based on a strong collaboration between all members of the research community. Finland doesn't have a national Open Science Policy but the Research and Innovation Council has adopted a vision and roadmap for 2030. With its initiatives Finland strives to become one of the leading countries in the openness of science and research. 	<ul style="list-style-type: none"> https://openscience.fi/en/frontpage https://www.openaire.eu/item/finland
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> Yes. 	<ul style="list-style-type: none"> In Finland, there are 9 regional ethics committees established by the University hospital districts. Their work is monitored and coordinated by the National Committee on Medical Research Ethics (TUKIJA).
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> Yes. The Secretary-General of TENK is the chair of ENRIO 2018-2021 	<ul style="list-style-type: none"> Finnish National Board on Research Integrity (TENK) is ENRIO member since 2008. http://www.enrio.eu/news-activities/members/finland/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> Academy of Finland Awards - awards for outstanding researchers The Maxwell Finland Award for Scientific Achievement - presented annually by to honour scientists who have made outstanding contributions to the understanding of infectious diseases and public health The Millennium Technology Prize 	<ul style="list-style-type: none"> http://www.aka.fi/en/about-us/scientists-behind-the-research/academy-of-finland-awards/ http://www.nfid.org/awards/finland https://taf.fi/millennium-technology-prize/
Whether research integrity is a part of institutional quality assessment	<ul style="list-style-type: none"> Yes. In Finland, the universities have a duty to organise an international research assessment every sixth year to measure the quality of research. The Academy of Finland conducts, coordinates and commissions evaluations of research with a view to improving both its performance and the quality and impact of Finnish science and research. 	<ul style="list-style-type: none"> https://www.aalto.fi/services/research-ethics-and-research-integrity https://www.aka.fi/en/
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> Academy of Finland conducts periodic reviews To analyse the state of scientific research in Finland. In 2018 the review explored the aim to raise RDI investments to 4% of GDP by 2030 and trends influencing science and the practice of research in the future. 	<ul style="list-style-type: none"> http://www.aka.fi/en/research-and-science-policy/state-of-scientific-research-in-finland/state-of-scientific-research-2018/
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> Public perception of research integrity and trust in science in Finland is on a high level. The majority thinks that research is conducted in a responsible way and that research community cares about its social responsibilities. A "Science Barometer" is published every third year. It reflects opinions of the public to on the impact of research to the society and credibility of universities and other research institutions in comparison to other societal institutions (church, parliament, court, police etc.) (results available only in Finnish) 	<ul style="list-style-type: none"> http://www.tenk.fi/sites/tenk.fi/files/EthicalEvaluationofResearchinFinland.pdf http://www.tieteentiedotus.fi/tiedebarometri.html
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> Occasionally. The Finnish media wrote about scientific misconduct and TENK's role and authority in the control of scientific misconduct. 	<ul style="list-style-type: none"> https://www.tenk.fi/sites/tenk.fi/files/TENK_annual_report_2016.pdf
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> The Academy of Finland works on the promotion of international scientific collaboration by providing funding to collaborative projects. Moreover, the Academy pays membership fees to support the activities of international science and research organisations, which opens up opportunities for Finnish researchers. 	<ul style="list-style-type: none"> http://www.aka.fi/en/research-and-science-policy/international-cooperation/
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> The Federation of Finnish Learned Societies organises meetings and conferences, attended by the academic community and the general public. 	<ul style="list-style-type: none"> https://tsv.fi/en/frontpage https://www.responsible-research.fi/ https://www.tjnk.fi/en

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> The Federation also publishes a journal Science Now six times a year. It contains information on the events and publications of the learned societies and on the current issues within the academic community. Committee for Public Information (TJNK) allocates yearly State Awards of Public Information The Science Forum festival is organised every two years. The Responsible Research website is a joint initiative by the Finnish National Board on Research Integrity TENK and the Committee for Public Information TJNK and it is funded by the Ministry of Education and Culture in Finland. It is established as guidance for research integrity, responsible science communication, and open science culture in Finland. 	
Are there any disincentives?	<ul style="list-style-type: none"> Not clear. 	
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> TENK Guidelines Codes for Occupational Ethics Responsible Research – Guide to Research Integrity, Research Ethics and Science Communication in Finland Ethical principles of research in the humanities and social and behavioural sciences and proposals for ethical review Supervision of doctoral dissertations and their review process in Finland with a special emphasis on research integrity. Recommendations to universities by the Finnish Advisory Board on Research Integrity and Universities Finland UNIFI Agreeing on authorship. Recommendation for research publications TUKIJA seminar materials 	<ul style="list-style-type: none"> https://www.tenk.fi/en/tenk-guidelines https://www.tenk.fi/en/codes-for-occupational-ethics https://www.responsible-research.fi/en https://www.tenk.fi/sites/tenk.fi/files/ethical-principles.pdf https://www.tenk.fi/sites/tenk.fi/files/TENK_UNIFI_recommendations_supervision_of_doctoral_dissertations.pdf https://www.tenk.fi/sites/tenk.fi/files/TENK-suositus_tekijyys.pdf https://tukija.fi/en/seminar-materials

8.6 France

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 64,909,596 (Metropolitan France) 	<ul style="list-style-type: none"> https://goo.gl/wtq8nw
GDP (World Bank)	<ul style="list-style-type: none"> US\$2,583 trillion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/country/France
GDP/Capita	<ul style="list-style-type: none"> US\$38,476 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=FR&view=chart
Number of researchers	<ul style="list-style-type: none"> 604,700 researchers; people involved in research-related activity (head count in all sectors); 428,600 researchers in full time equivalent (2015) 	<ul style="list-style-type: none"> http://www.enseignementsup-recherche.gouv.fr/cid56383/grands-chiffres-de-la-recherche.html
Number of research institutions	<ul style="list-style-type: none"> 67 universities, 132 other higher education institutions (including France's <i>Grandes Écoles</i>). Doctoral schools: 269 Public institutions of scientific and technological character, public industrial and commercial establishments, foundations and special institutes: 35 19 COMUE and 7 Associations The National Research Alliances: 5 Research bodies and university laboratories enter into contracts to form joint research units (UMRs). The COMUEs are public institutions that bring together and coordinate higher education and research institutions in the same academic or inter-academic area. National research alliances are Thematic groupings of research organizations and higher education institutions. 	<ul style="list-style-type: none"> http://www.enseignementsup-recherche.gouv.fr/cid49705/etablissemnts-enseignement-superieur-recherche.html http://www.enseignementsup-recherche.gouv.fr/pid25332/doctorat.html http://www.enseignementsup-recherche.gouv.fr/pid24575-cid49677/principaux-etablissemnts-publics-de-recherche-et-d-enseignement-superieur.html http://www.enseignementsup-recherche.gouv.fr/cid94756/les-regroupements-universitaires-et-scientifiques-une-coordination-territoriale-pour-un-projet-partage.html https://www.allenvi.fr/allenvi/alliances-de-recherche

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €49.8 billion (2015) 	<ul style="list-style-type: none"> https://publication.enseignementsup-recherche.gouv.fr/eesr/FR/T923/l_effort_de_recherche_et_developpement_en_france/ https://publication.enseignementsup-recherche.gouv.fr/eesr/FR/EESR-FR.pdf
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 2.27 % GDP (2015) 	<ul style="list-style-type: none"> https://publication.enseignementsup-recherche.gouv.fr/eesr/FR/T923/l_effort_de_recherche_et_developpement_en_france/ https://publication.enseignementsup-recherche.gouv.fr/eesr/FR/EESR-FR.pdf
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Companies: 54% Government: 34.8% Higher education institutions: 2.6% Nonprofit institutions: 0.9% Other resources: 7.6% 	<ul style="list-style-type: none"> http://data.uis.unesco.org/Index.aspx?DataSetCode=SCN_DS&lang=en# https://publication.enseignementsup-recherche.gouv.fr/eesr/FR/T923/l_effort_de_recherche_et_developpement_en_france/
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 6.375 participants receiving €3,063.00 million in H2020 	<ul style="list-style-type: none"> https://ec.europa.eu/research/horizon2020/pdf/country-profiles/fr_country_profile_and_featured_projects.pdf
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 437 ERC grantees receiving €625.13 million in H2020 	<ul style="list-style-type: none"> https://ec.europa.eu/research/horizon2020/pdf/country-profiles/fr_country_profile_and_featured_projects.pdf
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> National Research Strategy – France Europe 2020 	<ul style="list-style-type: none"> http://cache.media.enseignementsup-recherche.gouv.fr/file/France-Europe_2020/18/3/AgendaStrategique02-07-2013-EnglishLight_262183.pdf http://cache.media.enseignementsup-recherche.gouv.fr/file/Strategie_Recherche/26/9/strategie_nationale_recherche_397269.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> The French Office for Scientific Integrity (OFIS) - High Council for Evaluation of Research and Higher Education (HCERES) Committees for the Protection of Persons The National Consultative Ethics Committee for Health and Life Sciences (CCNE) 	<ul style="list-style-type: none"> https://www.hceres.fr/PRESENTATION/Organisation/Office-francais-de-l-integrite-scientifique http://www.eurecnet.org/information/france.html

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> • The National Centre for Scientific Research (CNRS) – Ethical Committee (COMETS) • The National Commission on Animal Experimentation (CNEA) - Ethical Committees for Animal Experimentation • Parliamentary Office for evaluation • of scientific and technological options (OPECST) • The High Council on Biotechnology - Scientific Committee and Economic, Ethical and Social Committee • The Parliamentary Office for Scientific and Technological Assessment • The Advisory Committee on Data Protection (CCTRIS) • National Commission for Trials Involving Human Subjects (Commission Nationale des Recherches Impliquant La Personne Humaine) • Council of Deontology – French Ministry of Education, Higher Education and Research • Council of Deontology is created by Order from March 2018. It is composed of 8 members dealing with the rights and duties of civil servants in higher education and research (individual cases, conflict of interest, deontological duties). 	<ul style="list-style-type: none"> • http://www.ccne-ethique.fr/en/pages/presenting-national-consultative-ethics-committee-health-and-life-sciences • http://www.cnrs.fr/en/aboutcnrs/overview.htm • http://ethique.ipbs.fr/commissionNationale.html • http://www.assemblee-nationale.fr/11/documents/index-oecst-gb.asp • http://www.hautconseildesbiotechnologies.fr/en/article/what-hcb-does • http://www.assemblee-nationale.fr/commissions/plaquette_opecest_anglais.pdf • http://www.enseignementsup-recherche.gouv.fr/cid130123/installation-du-college-de-deontologie-du-ministere-de-l-enseignement-superieur-de-la-recherche-et-de-l-innovation.html
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> • Public Health Code • Law No. 2012-300 of 5 March 2012 on research involving the human person - "Jardé" Law (<i>Loi n° du 5 mars 2012 relative aux recherches impliquant 2012-300 la personne humaine or loi dite Jardé</i>) • Order on the ethical evaluation and authorization of projects involving the use of animals in procedures • Rural and Maritime Fishing Code, Articles R214-117 to R214-127 • Code of the Environment • Council of deontology- Order of French ministry of high education and research • Furthermore, different laws and regulations established institutions that have a role in RE and RI. • In 2016 a law about the rights and duties of civil servants was promulgated. This law addresses business ethics and its provisions can be applied to the domain of research integrity. 	<ul style="list-style-type: none"> • https://www.legifrance.gouv.fr/affichCode.do?cidTexte=LEGITEXT000006072665 • https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000025441587 • https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000027038013&dateTexte=20181025 • https://www.legifrance.gouv.fr/affichCode.do?cidTexte=LEGITEXT000006071367&dateTexte=20181025 • https://www.legifrance.gouv.fr/affichCodeArticle.do?idArticle=LEGIARTI000025800815&cidTexte=LEGITEXT000006074220 • https://www.legifrance.gouv.fr/eli/arrete/2018/3/1/ESRH1805309A/jo/texte/fr • http://satoriproject.eu/media/4.d-Country-report-France.pdf (Page 12-13) • https://www.legifrance.gouv.fr/eli/loi/2016/4/20/RDFX1314513L/jo/texte

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Organizational structures for RE+RI	<p>National:</p> <ul style="list-style-type: none"> National charter on professional ethics in research activities was declared in 2015. By the December 2018 total of 36 research establishments and the Conference of the University Presidents (CPU) signed the charter and in doing so they undertake to abide by seven principles in the field of professional ethics. Further, the National Committee for Ethics in Animal Research brought up a National charter on the ethics of animal experimentation. The National Consultative Ethics Committee for Health and Life Sciences (CCNE) publishes opinions and has an advisory role in dealing with ethical concerns in the community. Aside from CCNE, there are a number of French national institutions and bodies regarding ethics and research assessment such as the Parliamentary Office for Scientific and Technological Assessment, the Academy of Sciences, The High Council for Evaluation of Research and Higher Education (on the global evaluation), The High Council on Biotechnology , The Ethical Committee (COMETS) and integrity-deontology body of National Centre for Scientific Research (CNRS), The French Health Authority, The French National Research Agency, National Agency for the Safety of Medicines and Health Products. In 2017 the French Office for Scientific Integrity was established to provide support to higher education and research institutions, observe implementation of the National charter, contribute to the promotion of research integrity at a national and international level, and identify cases of breaches. Additionally, there is a total of 86 Integrity Officers in universities, grande écoles, and research institutions (March 2019). 39 Committees of Protection of Persons (CPP) are divided up into 7 regions all over the country. All research projects on human beings or animals should obtain ethical clearance by the State boards. The National Conference for the Committees for the Protection of Persons is a network of CPPs which through organized symposiums and workshops provides assessment templates which are not obligatory for CPPs. <p>Public and private institutions:</p> <ul style="list-style-type: none"> Public and private institutions usually have codes of conduct based on the European Code of Conduct or charters to comply with the National Charter. Through work of ethics committees and scientific integrity offices, public institutions provide opinions regarding research ethics, training for RI, ethical guidelines for their staff and manage alerts and misconduct within their institution. Usually, they have councils for supervising their work (the council of deontology and ethics of the Institut of Research on Development, the scientific integrity office of INSERM, etc.). In the field of agricultural and environmental research, French Agricultural Research Centre for International Development (CIRAD), French National Institute for Agricultural Research (INRA) and French National Institute for Exploitation of the Sea (IFREMER), established a shared committee. 	<ul style="list-style-type: none"> http://www.senat.fr/rap/l17-724/l17-724_mono.html#fn23

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> Integrity Officers are recruited all over the state and so far there are approximately 86 officers. They form an informal network called RESINT. French Office for Integrity in Science (OFIS), created in 2017 as a department of HCERES, has a staff since 2018 (a director and two associated). They are advised by French Council of Scientific Integrity (CoFIS), a committee of 12. Other public institutions and corporations usually have integrity offices. 	<ul style="list-style-type: none"> https://www.hceres.fr/ofis
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> Not available. Usually, postdoctoral students have paid positions regulated by contracts with research institutions and universities. At universities, postdoctoral students carry a status of temporary lecturers and researches. 	<ul style="list-style-type: none"> https://www.campusfrance.org/en/post-doctorate-France
Percentage of grant success for applications to national funders Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> The French National Research Agency (ANR): 14.9 % (2017) The French National Research Agency (ANR): €624,5 million (2017) ANRS (National Agency for Research on AIDS and Viral Hepatitis): €50.176 million Agency for Environment and Energy Management (ADEME): €30 million 	<ul style="list-style-type: none"> http://www.agence-nationale-recherche.fr/fileadmin/documents/2018/A-NR-rapport-activite-2017.pdf http://www.agence-nationale-recherche.fr/fileadmin/documents/2018/A-NR-rapport-activite-2017.pdf http://www.anrs.fr/sites/default/files/2017-07/rapport_activite_def.pdf https://www.ademe.fr/sites/default/files/assets/documents/2010-2017-report-france_s-strategic-investment-010592-062018.pdf
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> The French National Charter for Research Integrity The French National Charter for Research Integrity was signed by public research institutions and the Conference of University Presidents in 2015. Research institutions and universities usually have Codes of conduct which are based on the national charter and by which fundamental principles of the national charter are promoted and honoured. For observing implementation of the national charter, French Office for Integrity in Science (OFIS) was created in 2017. 	<ul style="list-style-type: none"> https://www.hceres.fr/Ressources-documentaires-sur-l-integrite-scientifique
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> Yes. In 2016 a decision was brought by the Ministry of Education, stating that all PhD students have to be trained for research integrity and research ethics before defending their thesis. This decision was encouraged by the document "Overview and propositions of implementation of the charter", assembled by Prof Pierre Corvol and members of the workgroup. Further, a number of public research institutions offer training on RI for their employees (e.g. CIRAD, CNRS, INSERM, INRA...). The training is monitored by Integrity Officers who are appointed in research institutions. 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> • Ethics committees, Boards and Integrity Officers • Investigations of alleged misconduct and undesirable conduct are done by ethics committees of the institutions or integrity offices. • Integrity Officer should be the first person to contact when the problem regarding RI occurs. Cases of alleged misconduct are done respecting the confidentiality rules. • Preliminary inquiry or alleged violation investigation, are led by research integrity officers, under the own responsibility of the organisations conducting research. • There are Guidelines of research integrity officers for handling misconduct allegations 	
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> • The French Office for Integrity in Science (OFIS) • The French Office for Integrity in Science was created with the purpose to coordinate the effort of research integrity in all institutions. • INSERM Ethics Committee (CEI) • CEI is a unique body, distinct from the National Consultative Ethics Committee. Therefore, aside from dealing with RI and RE within the institution, it aligns ethical work of research institutions which are part of National Alliance for Life Sciences and Health (Aviesan). • Joint Consultative Ethics Committee: INRA, CIRAD, and IFREMER • The Joint Consultative Ethics Committee of INRA and CIRAD was created in 2007 and in 2016 was extended to include INFREMER. • The French National Research Agency (ANR) • Funded researches must comply with ANR policy for ethics and research integrity. • CNRS • The CNRS has a deontology and scientific integrity board since 2018: CNRS Report 2018 on scientific integrity in CNRS. • The National Consultative Ethics Committee on Health and Life Sciences • Universities and other institution of higher education, as well as public institutions, can refer a question to CCNE regarding ethics in the fields of health and medicine. • The University of Bordeaux has developed a course on research integrity, in partnership with the Conference of the University Presidents, and the main French research bodies (COMETS-CNRS, INSERM and INRA). The aim of this course is to disseminate a culture of research integrity within institutions and raise awareness of the various issues regarding research integrity. 	<ul style="list-style-type: none"> • https://www.hceres.fr/ofis • http://www.agence-nationale-recherche.fr/fileadmin/documents/2018/ANR-Charte-deontologie-et-integrite-scientifique-2018.pdf • http://www.cnrs.fr/sites/default/files/download-file/rapport-integrite-scientifique.pdf • https://www.fun-mooc.fr/courses/course-v1:Ubordeaux+28007EN+session01/about
Protection of whistle-blowers	<ul style="list-style-type: none"> • The protection of whistle-blowers is mentioned in the law about the rights and duties of civil servants. Moreover, the Sapin II Act (an act relating to the transparency, the fight against corruption and the modernization of economic life) gives broader legal protection to whistle-blowers and defines conditions under which a person can be recognized as a whistle-blower. A whistle-blower is entitled to several protections including confidentiality, protection against discrimination, and protection from criminal liability. 	<ul style="list-style-type: none"> • https://www.legifrance.gouv.fr/eli/loi/2016/4/20/RDFX1314513L/jo/texte • https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000033558528&fastPos=1&fastReqId=2003069347&categorieLien=cid&oldAction=rechTexte • https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000017942034&

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> The French Labor Law also states that the employees should immediately inform their employer of any professional situation that may represent a threat to their life or health. They also have the right to withdraw from such situations. 	<p>fastPos=1&fastReqId=2044486022&categorieLien=cid&oldAction=rechTexte</p>
<p>Designated research integrity officers in institutions, whether they are mandatory, and who educate them</p> <p>Whether there is research into research integrity and how much funding is there for it and who funds</p>	<ul style="list-style-type: none"> Designation of integrity officers is not mandatory but currently, there are about 86 integrity officers in different institutions. Training for research integrity officers is provided by the French Office for Research Integrity (OFIS). In 2016 Pierre Corvol, at the request of the Minister of Higher Education Research, and Innovation made an assessment and proposals for the implementation of the National Charter for Scientific Integrity. To assess the current situation the working group conducted a questionnaire with 8 research organisations, 6 establishments and all universities in France. The Ministry of Higher Education, Research, and Innovation made a plan containing measures for development of the Humanities and Social Sciences. The plan is made upon a conducted assessment of the current state in the field. One of the proposed measures is to promote scientific integrity by providing training to students and research staff. In 2009, Jean-Pierre Alix and Michelle Hadchouel conducted a survey regarding cases of research fraud and its prevention. It provides a description of procedures for dealing with research misconduct and fraud in research organisations (focuses on cases handled in the last 5 years). Moreover, it provides a description of preventive actions and possible improvements to handle research misconduct. The questionnaire was sent to 34 research institutions (universities were not included). The total of 17 institutions responded. The results were presented in 2010 in the publication of the Ministry of Higher Education and Research (Strengthening the research integrity in France - Prevention and treatment proposals of scientific fraud) 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/france/ http://cache.media.enseignementsup-recherche.gouv.fr/file/Actus/84/2/Rapport_Corvol_29-06-2016_601842.pdf http://www.enseignementsup-recherche.gouv.fr/cid114413/plan-s.h.s.-etat-d-avancement-des-15-mesures.html#mesure5 http://archeologie-copier-coller.com/wp-content/uploads/2015/10/J-P-ALIX.-RAPPORT-INTEGRITE.pdf
<p>Annual meetings on research integrity</p>	<ul style="list-style-type: none"> The OFIS organizes the annual meeting of signatories of the French Charter of research deontology in which the universities and the other research institutions exchange policies, procedures and share their needs with OFIS. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/france/
<p>Whether registration of clinical trials and other research and of their result mandatory</p>	<ul style="list-style-type: none"> <i>Jaride</i> Law regulates the procedures of registration clinical trials and reporting of the results. There are three different categories of studies regulated by the law. Interventional studies are subject to the highest regulatory control, requiring approval from the ethics committee and the National Agency for the Safety of Medicines and Health Products (ANSM). The second category is interventional studies with minimal risk or burden and the third category are non-interventional studies (observational) that require ethics committee approval. 	<ul style="list-style-type: none"> https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000025441587&fastPos=2&fastReqId=487819629&categorieLien=cid&oldAction=rechTexte

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether research and research data are open and accessible	<ul style="list-style-type: none"> France has developed a National Plan for Open Science containing conditions for the implementation of Open Science in France. The Plan consists of three axes regarding open access articles, structuring and the opening of research data, and adoption of Open Science policy. In October 2016, the French Law for a Digital Republic Act came into force in which one article concerns scholarly communication and relates directly to open access/open data. 	<ul style="list-style-type: none"> http://cache.media.enseignementsup-recherche.gouv.fr/file/Recherche/50/1/SO_A4_2018_EN_01_leger_982501.pdf https://www.openaire.eu/item/france
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> Yes. 	<ul style="list-style-type: none"> http://www.cpp-sudmed4.fr/ Committees of Protection of Persons
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> Yes. French Agricultural Research Centre for International Development (CIRAD) – member since 2016 Internal Office of the French National Institute of Health and Medical Research (INSERM) – member since 2008 French Office for Research Integrity (OFIS) – member since 2018 	
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> Inserm Prizes (the Grand Prize, Prize of Honor and an International Prize, Opecst-Inserm Prize, Research Prize, and Innovation Prizes). The National Centre for Scientific Research (CNRS) awards annually a gold, silver and bronze medal as well as special ones for innovation. The Twelve Foundation Awards for Medical Research (FRM) for researchers who have made an outstanding contribution in the field of health. Medical Awards by the Foundation of France The Sanofi-Pasteur Prizes The magazine La Recherche awards for research teams in the following areas of archaeology, astrophysics, biology, chemistry, environment, mathematics, health, neuroscience, physics, the science of information, technology and a special jury prize. The Pink Ribbon Awards The prizes of the Institute of France The research tax credit (CIR) is a tax system that supports business research and development activities. It encourages the development of research activities by providing tax assistance. 	<ul style="list-style-type: none"> https://www.inserm.fr/en/about-inserm/inserm-prizes http://www.cnrs.fr/en/research/awards.htm https://www.frm.org/nous-soutenir/batir-un-projet-philanthropique/prix https://www.fondationdefrance.org/fr/bourses-aux-jeunes https://www.pasteur.fr/en http://www.cancerdusein.org/prix-ruban-rose/reglement-des-prix-ruban-rose http://www.institut-de-france.fr/fr/prix-et-fondations http://www.enseignementsup-recherche.gouv.fr/pid24835/credit-impot-recherche-cir.html
Whether research integrity is a part of institutional quality assessment	<ul style="list-style-type: none"> Yes. The High Council for Evaluation of Research and Higher Education (Hcéres) is administrative authority responsible for the evaluation of higher education institutions and research institutes. The French Office for 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>Integrity in Science (OFIS) is established as a part of Hcéres organisational structure.</p>	
<p>Whether there is research impact assessment and translation of research findings to the community</p>	<ul style="list-style-type: none"> • French Agricultural Research Centre for International Development (CIRAD) has developed the methodology called ImpresS (Impact of Research in the South) to understand how and why CIRAD interventions have contributed or contribute to generating impacts. This should eventually lead to better research impact. • Inserm is consistent in developing recommendations for implementing public health policies. Moreover, the knowledge developed in the Inserm laboratories is disseminated throughout society. In its Science&Santé magazine, scientific magazine accessible to a wider audience, Inserm illustrates discoveries, debates and questions of biomedical research. • The EuroScience Open Forum was held in 2018 in France. This is the largest interdisciplinary science form in Europe which brings together researchers, educators, business actors, policymakers, journalists, and students from all over the world to discuss breakthroughs in science. • French National Institute for Agricultural Research (INRA) organises online debates to encourage critical thinking about research in public. 	<ul style="list-style-type: none"> • https://www.cirad.fr/en/our-research/the-impact-of-our-research • https://www.inserm.fr/en/research-inserm/research-continuum • https://www.inserm.fr/en/health-information/science-sante-magazine
<p>Public perception of research integrity in their country, and their trust in science</p>	<ul style="list-style-type: none"> • Public perception of science was shaken and diminished when several cases of research fraud were published in the media. This brought up an initiative by the Ministry of Higher Education and Science to create the propositions for the implementation of the Nation Charter for the Research Integrity. 	
<p>Whether research integrity is discussed in the lay press</p>	<ul style="list-style-type: none"> • Occasionally. • Usually related to cases of research fraud and academic corruption (<i>Le Monde</i> and <i>Les Echos</i>). The document "Overview and propositions of implementation of the charter" by Pierre Corvol was also presented in the press by the Minister of Higher Education and Research. 	
<p>Whether there are rewards for collaborative science and incentives for networks</p>	<ul style="list-style-type: none"> • Atip – Avenir Award is awarded by the CNRS Institute of Biological Sciences Atip program and the Inserm Avenir program to help young researchers to establish an autonomous team in the field of life sciences and health. • Setting Up European or International Scientific Networks (MRSEI) supports the creation of transnational networks coordinated by French researchers. It encourages French participation in European and international calls and aims to give the country's research greater international visibility. 	<ul style="list-style-type: none"> • https://www.inserm.fr/en/about-inserm/atip-avenir-award-winners • http://www.agence-nationale-recherche.fr/en/information/news/single/setting-up-european-or-international-scientific-networks-at-a-glance/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> • France is a part of EQUATOR network. French EQUATOR centre is established for the development and improvement of the value of biomedical research in France and French-speaking countries. This will be done through the improvement of the planning, design, conduct/management and reporting of biomedical research. • In 2016, president of INRA and of the French National Alliance for Research on the Environment (AllEnvi), submitted the report on "Citizen Science in France" outlining best practices and recommendations for developing citizen science, including in schools, in a number of fields and themes where it could drive important insights. • Paris-Sud University work on the promotion of science among the general public by organising various events (festivals "Ciné-Droit" and "CURIOSITas", open days and tours of research laboratories, encounters with scientists) to disseminate scientific knowledge and bring closer science to the society. • <i>Maison d'initiation et de sensibilisation aux sciences</i> is an initiative supported by Regional Council of Ile-de-France, La Diagonale Paris-Saclay, the University Paris-Saclay, Paris-Sud University, and the CNRS. • The French National Research Agency (ANR) • Funded research must comply with ANR policy for ethics and research integrity. 	<ul style="list-style-type: none"> • http://www.equator-network.org/about-us/french-equator-centre/ • https://inra-dam-front-resources-cdn.brainsonic.com/ressources/afile/382421-75327-resource-citizen-science-report-screen.pdf • http://www.u-psud.fr/en/science-and-society/science-and-society.html • http://hebergement.u-psud.fr/miss/ • http://www.agence-nationale-recherche.fr/fileadmin/documents/2018/ANR-Charte-deontologie-et-integrite-scientifique-2018.pdf
Are there any disincentives?		
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> • European Code of Conduct • National Charter for Research Integrity • Signature of Scientific Publications: Good Practices (Inserm) • Charter of ethics and scientific integrity (ANR) • Roadmap for Scientific Integrity 2020 (OFIS) • Integrity and responsibility in research practices (CNRS-CPU) • Scientific integrity guideline(CNRS, 2018) 	<ul style="list-style-type: none"> • https://www.allea.org/wp-content/uploads/2018/01/FR_ALLEA_Code_de_conduite_europeen_pour_integrite_en_recherche.pdf • http://www.cnrs.fr/comets/IMG/pdf/french_national_charter_research_integrity_29jan2015_2.pdf • https://www.inserm.fr/professionnels-recherche/integrite-scientifique/signature-publications-scientifiques-bonnes-pratiques • https://www.inserm.fr/sites/default/files/2018-06/ANR_CharteDeontologieIntegriteScientifique_2018.pdf • https://www.hceres.fr/PRESENTATION/Organisation/Office-francais-de-l-integrite-scientifique • http://www.cnrs.fr/comets/IMG/pdf/quide2017-en.pdf • http://www.cnrs.fr/sites/default/files/download-file/rapport-integrite-scientifique.pdf

8.7 Greece

Framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 10,768,193 	<ul style="list-style-type: none"> http://www.statistics.gr/en/infographic-population-immigration
GDP (World Bank)	<ul style="list-style-type: none"> US\$200.288 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=GR&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$18,613.42 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=GR&view=chart
Number of researchers	<ul style="list-style-type: none"> 60,736 researchers (head count in all sectors) in 2015; 29,403 researchers in full time equivalent (2016) 	<ul style="list-style-type: none"> https://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsc00004&language=en
Number of research institutions	<ul style="list-style-type: none"> Universities: 24 Technological Educational Institutes: 13 Research centres: 8 Research institutes: 31 	<ul style="list-style-type: none"> https://www.studyinggreece.edu.gr/Studying/Find/HigherEducationInstitutes.aspx http://erevna.minedu.gov.gr/index.php/en/research-en/2015-10-15-16-21-16
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €1.733.1 million (2016) 	<ul style="list-style-type: none"> http://www.ekt.gr/en/news/21172
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 0.99%GDP (2016) 	<ul style="list-style-type: none"> http://www.ekt.gr/en/news/21172
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Public administration: 42.5% Business: 49.9% Foreign (EU): 12% 	<ul style="list-style-type: none"> http://www.ekt.gr/en/news/21172
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 1,521 funded projects, 2,609 project participations, receiving €781.5 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 25 ERC signed grants receiving €23.7 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-

Framework element	Information collected (and date for most recent source of information)	Notes / Source
		b83c4e21d33e/sheet/erUXRa/state/analysis
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> • National Strategy for Research and Innovation for Smart Specialization • 2014-2020 	<ul style="list-style-type: none"> • http://www.gsrta.gr/Financing/Files/ProPeFiles19/RIS3V.5_21.7.2015.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> • National Bioethics Commission • National Organization for Medicines – the National Ethics Committee 	<ul style="list-style-type: none"> • http://www.bioethics.gr/index.php/en • http://www.eof.gr/web/guest/home;jsessionid=f6de963d91a2244c90ae9808e24e
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> • Act on the establishment of National Council of Medical Ethics and Deontology • Data Protection Act 2667/1998: National Bioethics Commission • Act 2619/1998: ratification of the Oviedo Convention • Ministerial Decision (incorporating Directive 2001/20/EE into domestic law) • Code of Medical Ethics and Deontology • Law on the Organization and Operation of Universities • Law on the Establishment of Ethics and Ethics Committees in Research 	<ul style="list-style-type: none"> • http://www.eurecnet.org/information/greece.html • https://actions.minedu.gov.gr/actions/university • https://actions.minedu.gov.gr/actions/research
Organizational structures for RE+RI	<ul style="list-style-type: none"> • At the national level, the National Bioethics Commission is established to investigate the ethical, social and legal aspects that arise from scientific advances in biology, biotechnology, medicine and genetics. Moreover, the Commission is entitled to work on respective ministries on proposals, general policies and to provide recommendations, collaborate with international organizations and represent Greece to an international audience. The Commission also informs public on issues related to biotechnological advances. The National Ethics Committee of the National Organization for Medicines was established for the promotion and regulation of good clinical practice in the conduct of clinical trials. Moreover, it issues approval for clinical trials. Besides the national organisations, there are several local institutional committees regarding research ethics and research integrity. The committees are established at higher education institutions, hospitals and research centres. The law on the Establishment of Ethics and Ethics Committees in Research, brought by the Greek Ministry of Education and Research imposes the obligation to establish research ethics committees at all universities and research centres. Besides the committee, most Greek universities have their code of conduct to adhere to good research practice. • There are also two networks regarding research integrity, which work on the promotion and training to help scientists comply with the highest standards of research ethics and research integrity. 	<ul style="list-style-type: none"> • http://www.eurecnet.org/information/greece.html • http://www.enrio.eu/news-activities/members/greece/ • http://earthnet.ntua.gr/description/?lang=en • http://www.rcr.gr/index.php/en/

Framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> In September 2017 the Greek Ministry of Education summed up a panel of seven experts (two of them are members of EARTHnet), in order to draft a law for the operation of ethical screening at an institutional level, through the creation of REDCs. The driving force for this initiative was that a stage of the ethical assessment of upcoming EC funded projects should be implemented within the fund receiving institute. The draft law was voted from the Greek parliament and, since March 2018, has been put into action, having a legal mandate upon publicly funded Greek Universities and Research Centers. These institutes will have to create their REDC and to align their Codes of Conduct with the context of the new law, until September 2018. Ethical Aspects in Research and Technology for Human (EARTHnet) is a leading network regarding RE+RI. The network work on raising awareness among Greek academic community on research ethics and research integrity issues promotes the institutionalisation of a national code of conduct for research and the establishment of a national research ethics and research integrity committee. The Network of Responsible Conduct of Research in Greece (RCR-Greece) was founded by researchers, professors, scientists and professionals to promote research integrity and for the purpose of education and training for scientists in the field of research integrity. 	
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> Unknown. The National Bioethics Commission is composed of 9 members and 2 scientific officers as well as secretariat. A number of university ethics committees and research institutes ethics committees are part of the Ethical Aspects in Research and Technology for Human Network. The Board of Directors of the Network of Responsible Conduct of Research in Greece consists of 5 members. 	<ul style="list-style-type: none"> http://www.bioethics.gr/index.php/site-map/synthesi http://earthnet.ntua.gr/research-ethicsresearch-integrity-committees-in-greece/?lang=en http://www.rcr.gr/index.php/en/about-us/directors
Percentage of postdoctoral students who get paid positions		
Percentage of grant success for applications to national funders		
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> The Hellenic Foundation for Research and Innovation (ELIDEK): € 240 million 	<ul style="list-style-type: none"> https://actions.minedu.gov.gr/actions/research
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> Greece doesn't have a national code of conduct for research integrity but most universities have developed their codes. One of the priorities of the EARTHnet is to promote the establishment of the national research ethics and research integrity committee and drafting the National Code of Conduct for Research. 	

Framework element	Information collected (and date for most recent source of information)	Notes / Source
<p>Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored</p>	<ul style="list-style-type: none"> • RCR-Greece has started to educate the Master’s students of two Greek Universities in Research Integrity by offering relevant lectures. • The Hellenic National Bioethics Commission and the Laboratory for the Research of Medical Law and Ethics organise seminars for postgraduate students of all the Schools of Positive and Theoretical Sciences, as well as professional lawyers, judges, doctors, educators and others. The seminars cover a wide range of critical issues including human reproduction, applications of genetics, clinical studies, euthanasia, cloning and nanotechnology. Moreover, the Commission is organising open, monthly seminars with various subjects including in vitro fertilization, gene therapy, medical errors, mental health etc. • In 2018 the Commission in cooperation with National School of Public Health and Center of European Constitutional Law organised the workshop named Integrity and Responsibility in Scientific Research: Law and Bioethics Issues. • EARTHnet/NTUA has prepared and is organizing training courses on Research Ethics and Research Integrity for Postgraduate students and PhD candidates. These training courses are organized in post graduate courses of NTUA. It is provided as a seminar (not as a lesson that leads to examinations) but it is mandatory. The format of the courses is Seminar, followed by an interaction session. Currently, this seminar is organised once per semester. The trainers are all members of the Advisory Ethics Committee of our institute (National Technical University of Athens). The trainers, as one of their fields of expertise, have Research Ethics and research Integrity. The topics addressed and their contents are: <ol style="list-style-type: none"> 1. Research misconduct (falsification, fabrication, plagiarism) 2. Authorship and publication 3. Conflict of interest 4. Peer review 5. Responsibilities of mentors and trainees 6. Collaborative research 7. Historical facts/emblematic cases of research misconduct 8. Timeline of production of legal frameworks/guidelines in Europe 9. Overview of running EC funded related projects 10. Current ethical dilemmas 11. Quantified information of research misconduct 12. Different kinds of organization of RE&RI committees in characteristic European countries (Norway, Italy, Greece) • The courses have been customized for Engineers and graduates from Natural Sciences. The materials mainly used are Power point presentations, Guidelines and Case studies. 	<ul style="list-style-type: none"> • http://www.rcr.gr/index.php/en/ • http://www.bioethics.gr/index.php/el/semnaria/136-2013-05-21-10-01-31 • http://www.bioethics.gr/index.php/el/semnaria/139-eleythera-seminaria
<p>How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether</p>	<ul style="list-style-type: none"> • This role is taken by local ethics and bioethics committees situated at the universities, research institutes and hospitals. • Regarding the publication of cases of misconduct, for example, the Technological Educational Institute of Crete in its Code of Ethics states that 	<ul style="list-style-type: none"> • https://www.teicrete.gr/el/tei/12624

Framework element	Information collected (and date for most recent source of information)	Notes / Source
outcomes of proven misconduct are publicly available	sharing information with the community will be discussed in each case and then decided whether to publish information or not.	
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> The members of <u>EARTHnet</u> work on the promotion of research ethics and research integrity and on raising awareness on issues regarding RE and RI. The network has 15 members (universities and research institutions). 	<ul style="list-style-type: none"> http://earthnet.ntua.gr/participants/?lang=en
Protection of whistle-blowers		
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> Some ethics committees may have appointed advisors for questions regarding ethics in research. But this is not obligatory. 	
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> University of Crete, Sociology department participated in the Horizon 2020 project named Determine the global and financial cost of research misconduct (DEFORM). The project aims to estimate the financial and social cost of research misconduct. 	<ul style="list-style-type: none"> http://147.52.72.177/limesurvey/index.php/331862
Annual meetings on research integrity	<ul style="list-style-type: none"> The RCR network organised ENRIO meeting in Athens. The Bioethics Commission organises seminars and workshops regarding research integrity. According to EUREC, the networking initiatives in Greece exist but they lack central coordination. 	<ul style="list-style-type: none"> http://www.rcr.gr/index.php/el/about-us/aim http://www.bioethics.gr/index.php/el/sinedria http://www.eurecnet.org/information/greece.html
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> In order to conduct a clinical trial in Greece the application must be submitted to the Greek Licensing Authority (EOF) and a separate application must also be submitted to the National Ethics Committee (NEC). The EOF may only issue an authorisation once it has seen the approval of the NEC. 	<ul style="list-style-type: none"> https://www.sfee.gr/wp-content/uploads/2015/04/Greece.pdf
Whether research and research data are open and accessible	<ul style="list-style-type: none"> Greece has not implemented a national Open Access/Open Science policy yet. Currently, the Technical University of Crete and the International Hellenic University have adopted an Open Access Policy. In 2017, the General Secretariat of Research and Technology (GSRT) established a Working Group (WG) to support the development of a national strategy on Open Science. 	<ul style="list-style-type: none"> https://www.openaire.eu/item/greece
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> Yes. The network of Greek ethics committees is divided into 4 levels. On the national level, the National Ethics Committee of the National Organization for 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/greece.html

Framework element	Information collected (and date for most recent source of information)	Notes / Source
	Medicines is established for issuing opinions regarding clinical trials on a medicinal product for human use. Further, there are local research ethics committees established in hospitals, research centres, and higher education institutions. National Bioethics Commission among other tasks, provides opinions in the field of biology, biotechnology, medicine, and genetics.	
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> • Yes. • Ethical Aspects in Research and Technology for Human (EARTHnet) and Network of Responsible Conduct of Research in Greece (RCR-Greece) are ENRIO members since 2014. 	<ul style="list-style-type: none"> • http://www.enrio.eu/news-activities/members/greece/
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> • Bodossaki Foundation – Awards for Scientific Excellence awarded in the fields of science, applied science, social and economic sciences and biomedical sciences. • The Bodossakis Excellence Award was is given to Greek scientists who have achieved international recognition for their comprehensive and innovative contribution. • The Galien Scientific Research Award is awarded to Greek scientists who have contributed significantly to innovation. • Science Communication Awards –ΕΠΙ2 at the Athens Science Festival 	<ul style="list-style-type: none"> • https://www.bodossaki.gr/en/who-we-are/vision-mission/ • https://www.prixgalien.gr/en/galien-scientific-research-award/ • http://www.athens-science-festival.gr/en/vravia-epi-2/
Whether research integrity is a part of institutional quality assessment		
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> • Greek Ministry of Education, Research and Religious Affairs have launched a specialwebsite to inform the citizens about its actions from 2015 to today. • From November 2011, the Hellenic Bioethics Commission started a series of educational activities for Secondary Schools and High Schools regarding cloning, human genome mapping, euthanasia, transplantation, management of biological wealth, medically assisted human reproduction. 	<ul style="list-style-type: none"> • https://actions.minedu.gov.gr/ • http://www.bioethics.gr/index.php/enimerosi
Public perception of research integrity in their country, and their trust in science		
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> • Occasionally. Usually related to corruption or fraud. 	
Whether there are rewards for collaborative		

Framework element	Information collected (and date for most recent source of information)	Notes / Source
science and incentives for networks		
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> The Athens Science Festival is organised since 2014 to bring closer science to the society. Thessaly Science Festival aims to present high-quality research in Greece to the general public and explain complicated scientific subjects in fun and creative ways. 	<ul style="list-style-type: none"> http://www.athens-science-festival.gr/en/festival/ https://www.thessaly-science-festival.gr/en/festival-2018/
Are there any disincentives?	<ul style="list-style-type: none"> Greece doesn't have national research ethics and research integrity body for handling cases of research misconduct. Currently, all cases are handled by institutional bodies and there is no unity among institutions regarding procedures for handling research misconduct. Greece doesn't have a national code of conduct for research, binding for researchers and research institutions. There is the issue of harmonization among different institutional ethics committees dealing with specific fields of research (eg. REC, animal research committee, clinical trials at the local institutional level...) as well as between the local RECs and National Bodies, (such as the National Ethics Committee for Clinical Trials). The problem is not particularly Greek but concerns the harmonization of ethics committees across EU member countries. Lack of systematic policies for open science, open access data. There are only a few Greek RPOs that systematically apply training courses for Research Integrity. In most Greek RPOs such training is applied sporadically, in the form of seminars mainly for post graduate students.- The new institutional Committees for Ethics and Deontology for Research, (founded by the law: N.4521, Τεύχος Α' 38/02.03.2018, Άρθρα 21-27), have limited responsibilities (namely, to make ethical assessment in research funding proposals). Overall RE&RI monitoring is usually being made by institutional Research Ethics Committees, which are manned by the Deans. Such committees must acquire, by the government, the manpower to apply more effective monitoring of RI issues. 	
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> What I Know about Bioethics -National Bioethics Committee (T. Vidalis, V. Mollaki) The University of the Aegean – Code of Conduct The Aristotle University of Thessaloniki – Code of Conduct in Research The University of Crete - Code of Ethics The University of Macedonia – Code of Conduct The University of Thessaly - Ethics Code The Athens University of Applied Sciences – Code of Ethics The Technological Educational Institute of Crete – Code of Ethics 	<ul style="list-style-type: none"> http://www.bioethics.gr/images/pdf/Booklet_for_schools_final.pdf http://earthnet.ntua.gr/research-ethicsresearch-integrity-committees-in-greece/?lang=en http://rc.uowm.gr/wp-content/uploads/2014/11/AUTH_research_deontology_principles.pdf http://www.en.uoc.gr/research-at-uni/eth/ethi.html http://www.uom.gr/modules.php?op=modload&name=Statikes&file=index&stid=692&categorymenu=5

Framework element	Information collected (and date for most recent source of information)	Notes / Source
		<ul style="list-style-type: none"> • http://www.uth.gr/en/research/ethics-committee • http://www.teiath.gr/userfiles/khitas/documents/2013/anakoinoseis/kvdi_kas_ithikis_deontologias_EEE.pdf • https://www.teicrete.gr/el/tei/12624

8.8 Ireland

Framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 4,761,865 	<ul style="list-style-type: none"> https://www.cso.ie/en/csolatestnews/presspages/2017/census2016summaryresults-part1/
GDP (World Bank)	<ul style="list-style-type: none"> US\$333.731 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=IE&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$69,330.69 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=IE&view=chart
Number of researchers	<ul style="list-style-type: none"> 33,092 researchers (head count in all sectors) in 2015; 26,293 researchers in full time equivalent (2016) 	<ul style="list-style-type: none"> https://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsc00004&language=en
Number of research institutions	<ul style="list-style-type: none"> Higher education: 7 universities, 1 technological university, 5 colleges, 12 institutes of technology. In 2019 3 institutes of technology merged to become Technological University. Government: 2 research institutes: Teagasc (agriculture/food) and Marine Institute. Technology Centres: 10. These are distributed centres with a high-TRL focus involving several higher education and government research institutions, and companies. SFI Research Centres: 17. These are distributed centres with a low to mid-TRL focus involving several higher education and government research institutions, and companies In 2015 there were nearly 1,900 enterprises engaged in R&D activities in Ireland. 	<ul style="list-style-type: none"> http://hea.ie/higher-education-institutions/?v=l https://www.enterpriseireland.com/en/research-innovation/companies/collaborate-with-companies-research-institutes/technology-centres.html https://www.cso.ie/en/releasesandpublications/er/berd/businessespenditureonresearchdevelopment2015-2016/
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €3.396 million (2017) 	<ul style="list-style-type: none"> https://dbei.gov.ie/en/Publications/Publication-files/The-R-D-Budget-2017-2018.pdf
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 1.18% GDP (2017) 	<ul style="list-style-type: none"> https://dbei.gov.ie/en/Publications/Publication-files/The-R-D-Budget-2017-2018.pdf
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Business sector: 48% Government sector: 26% Foreign: 24% 	<ul style="list-style-type: none"> https://dbei.gov.ie/en/Publications/Publication-files/R-D-Budget-Survey-Report-2016-2017.pdf

Framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> Private non-profit: 1.9% 	
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 1,136 funded projects, 1,534 projects participations, receiving €610.1 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 61 signed ERC grants receiving €82.21 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> Innovation Strategy - Innovation 2020: Excellence Talent Impact 	<ul style="list-style-type: none"> https://dbej.gov.ie/Djei/en/Publications/Innovation-2020.html
National bodies for RE+RI	<ul style="list-style-type: none"> The National Forum on Research Integrity National Advisory Committee on Bioethics Numerous RECs in higher education institutions and hospitals/healthcare providers of which 12, based in hospitals, are recognised by the Department of Health for the purpose of providing ethics approval for regulated clinical trials. 	<ul style="list-style-type: none"> https://www.iua.ie/research-innovation/research-integrity/ https://health.gov.ie/national-advisory-committee-on-bioethics/ http://www.eurecnet.org/information/ireland.html https://health.gov.ie/blog/policy/clinical-trials-involving-medicinal-products/ https://health.gov.ie/wp-content/uploads/2016/07/European-Communities-Clinical-Trials-on-Medicinal-Products-for-Human-Use-Regulations-2004.pdf
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> Universities Act Institutes of Technology Act Technological Universities Act Freedom of Information Act Data Protection Act European Communities (Clinical Trials on Medicinal Products For Human Use) Regulations Medicinal Products (Control of Manufacture) Regulations Health Research Regulations The Protected Disclosures Act 2014 	<ul style="list-style-type: none"> http://www.irishstatutebook.ie/eli/1997/act/24/enacted/en/html?q=Universities http://www.irishstatutebook.ie/eli/2006/act/25/enacted/en/html?q=institutes+of+technology http://www.irishstatutebook.ie/eli/2018/act/3/enacted/en/html http://www.irishstatutebook.ie/eli/2014/act/30/enacted/en/html?q=freedom+of+information+act http://www.irishstatutebook.ie/eli/2018/act/7/enacted/en/html?q=data+protection+act http://www.irishstatutebook.ie/eli/2004/si/190/made/en/print

Framework element	Information collected (and date for most recent source of information)	Notes / Source
		<ul style="list-style-type: none"> • http://www.irishstatutebook.ie/eli/2007/si/539/made/en/print • http://www.irishstatutebook.ie/eli/2018/si/314/made/en/pdf • http://www.irishstatutebook.ie/eli/2014/act/14/enacted/en/html
Organizational structures for RE+RI	<ul style="list-style-type: none"> • Research ethics committees are established in the healthcare service, higher education institutions and other research institutions. • There are 12 research ethics committees in Ireland that are recognised under the European Communities (Clinical Trials on Medicinal Products for Human Use) Regulations 2004 by the Department of Health for the purpose providing approvals for clinical trials. All of these committees are based in hospitals and other healthcare settings. In addition, there are many RECs in universities and other research institutions that provide approval for non-regulated healthcare interventions and experimentation involving human subjects and tissue, and animals. Ireland, through the Health Research Board, is currently setting up a National Research Ethics Committee (N-REC) to handle regulated clinical trials, and approval for multi-centre non-regulated trials and other health research requiring ethical approval. • The National Forum on Research Integrity was established in June 2015. It is coordinated by the Irish Universities Association (IUA) and the Technological Higher Education Association (THEA). Its main tasks are to support the implementation of research integrity policies, including training, and to ensure alignment with international and best practices for research integrity. • Health Research Board and Royal Irish Academy are members of the National Forum and also participate in international initiatives in the area of research integrity. The HRB has developed its policies and guidelines for the promotion of research integrity. 	<ul style="list-style-type: none"> • http://www.eurecnet.org/information/ireland.html • https://health.gov.ie/wp-content/uploads/2016/07/European-Communities-Clinical-Trials-on-Medicinal-Products-for-Human-Use-Regulations-2004.pdf • http://www.iua.ie/wp-content/uploads/2014/06/National-Policy-Statement-on-Ensuring-Research-Integrity-in-Ireland-2014.pdf • http://www.enrio.eu/news-activities/members/ireland/
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> • Unknown. • The National Forum on Research Integrity consists of 25 members. • As stated in the Regulation for Implementing the EU Clinical Trials Directive, ethics committees should consist of no more than 21 members. 	<ul style="list-style-type: none"> • https://www.iua.ie/research-innovation/research-integrity/ • https://health.gov.ie/implementation-of-eu-directive-on-good-clinical-practice-in-clinical-trials/
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> • In Ireland term “postdoctoral students” is not used. All doctoral candidates are postgraduate students. Postdoctoral researchers (those who have a PhD) are always treated as staff members and receive a salary. The amount of the salary can vary depending on the funding source, although Ireland is moving towards using salary scales for all postdoctoral researchers (some higher education institutions already do so). • Usually, doctoral candidates in Ireland receive a tax-free stipend, but it depends on the availability of funding. • In a recent survey of postgraduate researchers, 61% reported receiving a scholarship, 17% a grant and 8% were funded by their employer. 	<ul style="list-style-type: none"> • http://studentsurvey.ie/wp-content/uploads/2018/11/ISSE-PGR-Report-2018final.pdf (page 17)

Framework element	Information collected (and date for most recent source of information)	Notes / Source
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> • Irish Research Council: <ul style="list-style-type: none"> ◦ Postgraduate Scholarship Programme 24% ◦ The government of Ireland Postdoctoral Fellowship programme 19% • Health Research Board: between 12% and 20% depending on scheme 	<ul style="list-style-type: none"> • http://research.ie/assets/uploads/2018/07/03931-IRC-Annual-Report-2017-Proof08-Cover-Inside-Web.pdf • https://www.hrb.ie/publications/publication/health-research-board-annual-report-2017/
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> • The total R&D budget for Ireland in the 2017-2018 fiscal period was €751.7 million across a range of funding agencies and government departments that support research. 	<ul style="list-style-type: none"> • https://dbe.gov.ie/en/Publications/Publication-files/The-R-D-Budget-2017-2018.pdf
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> • National Policy Statement on Ensuring Research Integrity in Ireland (the new version will be available in 2019). 	<ul style="list-style-type: none"> • https://www.iua.ie/research-innovation/research-integrity/
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> • Since January 2018, online research integrity training is available to researchers at every publically funded higher education institution and government research institution in Ireland. This three-year pilot will provide training for up to 15,000 researchers. The National Forum on Research Integrity has put this training in place with financial support from the research funders, several of whom have made completion of this research integrity training a condition for all awardees. The numbers completing the training is monitored by the National Research Integrity Forum. 	<ul style="list-style-type: none"> • https://dbe.gov.ie/en/Publications/Publication-files/Innovation-2020-Third-Progress-Report.pdf
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> • Investigations of alleged misconduct are performed by the research institution where the researcher is employed or is a registered research student. • The National Forum on Research Integrity has committed to publishing annual statistics on the numbers of formal investigations of alleged misconduct. The first statistics report is due to be published in February 2019. 	<ul style="list-style-type: none"> • http://www.iua.ie/wp-content/uploads/2014/06/National-Policy-Statement-on-Ensuring-Research-Integrity-in-Ireland-2014.pdf • https://dbe.gov.ie/en/Publications/Publication-files/Innovation-2020-Third-Progress-Report.pdf • https://www.iua.ie/research-innovation/research-integrity/
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> • The National Research Integrity Forum has a broad membership, including representation from all publically funded higher education institutions, government research institutions, research funders and the state agencies responsible for quality and regulation of the higher education system 	<ul style="list-style-type: none"> • List of members: https://www.iua.ie/research-innovation/research-integrity/
Protection of whistle-blowers	<ul style="list-style-type: none"> • The Protected Disclosures Act 2014 aims to protect people who raise concerns about possible wrongdoing in the workplace (including, but not limited to, research misconduct). The Act, which came into effect on 15 July 2014, is often called the whistle-blower legislation. It provides for redress for employees who 	<ul style="list-style-type: none"> • http://www.irishstatutebook.ie/eli/2014/act/14/enacted/en/html

Framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>are dismissed or otherwise penalised for having reported possible wrongdoing in the workplace.</p>	
<p>Designated research integrity officers in institutions, whether they are mandatory, and who educates them</p>	<ul style="list-style-type: none"> According to the National Policy Statement, research misconduct investigations should be coordinated by a research integrity officer. The National Forum has issued guidance on the role and reporting relationships of a research integrity officer. The National Forum provided a training session for research integrity officers in 2017 and would like to continue to offer training as needs arise. 	<ul style="list-style-type: none"> http://www.iua.ie/wp-content/uploads/2014/06/National-Policy-Statement-on-Ensuring-Research-Integrity-in-Ireland-2014.pdf https://www.iua.ie/download/68527/
<p>Whether there is research into research integrity and how much funding is there for it and who funds</p>	<ul style="list-style-type: none"> There is no dedicated national funding for research on research integrity. However, a number of researchers and agency personnel in Ireland are participating in Horizon 2020 funded projects on RRI, funded under the SWAFS programme: <ul style="list-style-type: none"> RRING: Responsible Research and Innovation Networked Globally EnRRICH: Enhancing Responsible Research and Innovation through Curricula in Higher Education EnTIRE: Mapping Normative Frameworks for ETHics and Integrity of Research PRINTEGER: Promoting integrity as an integral dimension of excellence in research VIRT2UE: Virtue-based ethics and integrity of research: Training-the-trainer programme for upholding the principles and practices of the Europe Code of Conduct for Research Integrity -SOPs4RI: Developing research integrity standard operating procedures (just approved) 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis https://cordis.europa.eu/project/rcn/214923/factsheet/en https://cordis.europa.eu/project/rcn/197445/factsheet/en https://cordis.europa.eu/project/rcn/210253/factsheet/en https://cordis.europa.eu/project/rcn/197299/factsheet/en https://cordis.europa.eu/project/rcn/214892/factsheet/en
<p>Annual meetings on research integrity</p>	<ul style="list-style-type: none"> The National Research Integrity Forum typically meets four times per year. The Forum held a national event on RRI in February 2017, which was attended by 130 delegates (maximum venue capacity) and hosted a joint meeting in march 2019 with the National Open Research Forum 	<ul style="list-style-type: none"> https://www.iua.ie/download/112566/ http://www.iua.ie/research-innovation/research-integrity/inaugural-seminar-of-the-national-forum-on-research-integrity-3-feb-2017/
<p>Whether registration of clinical trials and other research and of their result mandatory</p>	<ul style="list-style-type: none"> The Health Research Board mandates the registration of clinical trials supported through its programmes, subscribes to the AllTrials campaign to ensure publication of trial outcomes. 	<ul style="list-style-type: none"> https://www.hrb.ie/funding/policies-and-principles/good-research-practice/
<p>Whether research and research data are open and accessible</p>	<ul style="list-style-type: none"> The majority of publically funded higher education institutions have an open access repository for research publications. The National Open Research Forum is developing a set of National Open Research Principles, to be published in 2019. The Health Research Board hosts HRB Open Research, an open publishing platform managed by F1000. 	<ul style="list-style-type: none"> http://rian.ie/ http://norf-ireland.net/ https://hrbopenresearch.org/
<p>Member of EUREC (European Network of</p>	<ul style="list-style-type: none"> Yes. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/ireland.html

Framework element	Information collected (and date for most recent source of information)	Notes / Source
Research Ethics Committees)	<ul style="list-style-type: none"> 12 ethics committees in Ireland are responsible for research involving humans and clinical trials for medicinal products. These ethics committees are based in hospitals and other healthcare settings. To assess clinical trials ethics committees must be recognized by the Ethics Committee Supervisory Body. 	
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> Yes. Health Research Board (HRB) and Royal Irish Academy (RIA) are ENRIO members since 2009. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/ireland/
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> Ireland does not conduct Research Assessment Exercises or use a Research Evaluation Framework. Assessment of research proposals and the quality of research outputs is based on international peer review. 	
Whether research integrity is a part of institutional quality assessment	<ul style="list-style-type: none"> Not currently, but may be incorporated into institutional governance requirements being developed by the Higher Education Authority 	<ul style="list-style-type: none"> http://hea.ie/funding-governance-performance/governance/
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> Monitoring of research projects by Irish funders includes evaluation of outcomes and potential impacts. In addition, funding agencies conduct periodic impact assessments of specific schemes and fields of research. Researchers are often asked about possible impact when applying for funding. 	<ul style="list-style-type: none"> Example of HRB Evaluation reports: https://www.hrb.ie/funding/evaluation/evaluation-reports/ Example of SFI approach: http://www.sfi.ie/funding/award-management/research-impact/
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> In 2015 Science Foundation Ireland made a report "Science in Ireland Barometer", an analysis of the Irish public's perceptions and awareness of STEM in society. 	<ul style="list-style-type: none"> https://www.sfi.ie/resources/SFI-Science-in-Ireland-Barometer.pdf
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> Yes. The print media has given coverage to research integrity in the past number of years, both the positive and the negative. 	<ul style="list-style-type: none"> 2009: https://www.irishtimes.com/business/promoting-integrity-in-science-research-1.740363 2014: https://educationalstandards.wordpress.com/2014/06/19/irish-science-ethics-poachers-and-gamekeepers/ 2016: https://www.irishtimes.com/news/science/irish-funded-scientist-under-investigation-over-his-research-1.2771359

Framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> The SFI Centres and Technology Centres are good examples of this and there are many programmes where researchers are encouraged to link with industry 	<ul style="list-style-type: none"> http://research.ie/funding/eps-postgrad/ https://www.enterpriseireland.com/en/funding-supports/company/esestablish-sme-funding/innovation-partnerships.html http://www.sfi.ie/sfi-research-centres/
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> The Innovation 2020 strategy is very strong on ensuring that research is relevant to the economy and society. Health Research Board, Science Foundation Ireland and the Irish Research Council are signatories of the San Francisco Declaration (DORA) statement. The Health Research Board and is a member of the Ensuring Value in Research (EViR) International Funders Forum. The March 2019 meeting of this group was held in Dublin. 	<ul style="list-style-type: none"> https://sfdora.org/read/ https://www.thelancet.com/journals/lanet/article/PIIS0140-6736(18)30464-1/fulltext
Are there any disincentives?	<ul style="list-style-type: none"> No formal disincentive, but one informal disincentive would be resistance to change in practices within research organisations, i.e. a satisfaction with the status quo. 	
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> The National Forum has prepared several position papers and guideline documents to assist research institutions: <ul style="list-style-type: none"> Research Integrity Officer Role and Reporting Structure Interface between Research Integrity and Research Ethics Guidelines for the Investigation of Misconduct in Research Since January 2018, online research integrity training is available to researchers at every publically funded higher education institution and government research institution in Ireland. This three-year pilot will provide training for up to 15,000 researchers. The National Forum on Research Integrity has put this training in place. 	<ul style="list-style-type: none"> https://www.iua.ie/research-innovation/research-integrity/

8.9 Lithuania

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 2,828,403 	<ul style="list-style-type: none"> https://osp.stat.gov.lt/EN/statistiniu-rodikliu-analize?hash=103cad31-9227-4990-90b0-8991b58af8e7#/
GDP (World Bank)	<ul style="list-style-type: none"> US\$47.168 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=LT&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$16,680.68 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=LT&view=chart
Number of researchers	<ul style="list-style-type: none"> 18,695 researches in 2017 (headcount in all sectors); 8,691 researchers in full-time equivalent (2017) 	<ul style="list-style-type: none"> https://osp.stat.gov.lt/web/guest/statistiniu-rodikliu-analize?hash=ddd03e8-3dce-49f2-bfb7-1a0eca718e4c#/ https://osp.stat.gov.lt/web/guest/statistiniu-rodikliu-analize?hash=ddd03e8-3dce-49f2-bfb7-1a0eca718e4c#/
Number of research institutions	<ul style="list-style-type: none"> 21 universities - 14 public; 7 private 22 colleges - 12 public; 10 private Research institutes: 13 public; 8 private Integrated Science, Studies and Business Centers (Valleys): 5 	<ul style="list-style-type: none"> https://www.smm.lt/uploads/documents/en_smm/Reformos%20gaires_1-10_EN20160415.pdf
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €371.735 million (2017) 	<ul style="list-style-type: none"> https://osp.stat.gov.lt/web/guest/statistiniu-rodikliu-analize?hash=ddd03e8-3dce-49f2-bfb7-1a0eca718e4c#/
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 0.89 % GDP (2017) 	<ul style="list-style-type: none"> https://osp.stat.gov.lt/web/guest/statistiniu-rodikliu-analize?hash=ddd03e8-3dce-49f2-bfb7-1a0eca718e4c#/
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Higher education sector: 36% Government sector: 28% Business sector: 35 % 	<ul style="list-style-type: none"> https://osp.stat.gov.lt/web/guest/statistiniu-rodikliu-analize?hash=ddd03e8-3dce-49f2-bfb7-1a0eca718e4c#/
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 255 funded projects, 313 projects participations, receiving €44.08 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 1 ERC signed grant receiving €2.5 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> National Progress Strategy "Lithuania 2030" 	<ul style="list-style-type: none"> The Strategy establishes long-term vision and lists of priorities in three areas - Smart Economy, Smart Society and Smart Governance. In 2012 The National Programme for the Development of Studies, Scientific Research and Experimental Development for 2013–2020 was approved by the government. The National Programme complies with demands of Progress Strategy. https://www.smm.lt/web/en/science1/-programme-for-development-of-studies-and-rd-for-2013-2020
National bodies for RE+RI	<ul style="list-style-type: none"> The Lithuanian Bioethics Committee (LBC) Regional Ethics Committees – the Kaunas Regional Biomedical Research Ethics Committee and the Vilnius Regional Biomedical Research Ethics Committee Other Medical Ethics Committees Office of Ombudsperson for Academic Ethics and Procedures of the Republic of Lithuania The Pharmaceutical Marketing Ethics Commission The Ethics Commission of the Scientific Council (Research Council of Lithuania) Interim Working group on academic integrity and ethics under Lithuanian University Rectors' Conference 	<ul style="list-style-type: none"> http://bioetika.sam.lt/index.php?160899149Z http://www.lsmuni.lt/lt/struktura/kiti-padaliniai-ir-organizacijos/kauno-regioninis-biomedicininiu-tyrimu-etikos-komitetas/ http://www.mf.vu.lt/lt/content/vrbtek/naujie-nos http://bioetika.sam.lt/index.php?476015911 http://www.etika.gov.lt/?lang=en https://www.vaistukodeksas.lt/apie-etikos-komisija/ https://www.lmt.lt/lt/apie-taryba/komisijos-ir-darbo-grupes/lietuvos-mokslo-tarybos-mokslines-veiklos-etikos-komisija/2285
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> The law regulating the activities of the Lithuanian Bioethics Committee: <ul style="list-style-type: none"> Health System Law Law on Health Care Institutions Law on Medical Practice Law on Biomedical Research Ethics Pharmaceutical Law Law on Medical Practice Dental Practice Act Law on Practice in Nursing Practice and Obstetrics Law on Research and Higher Education Copyright Law 	<ul style="list-style-type: none"> http://bioetika.sam.lt/index.php?539439549 https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/81a7b822444a11e68f45bcf65e0a17ee

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Organizational structures for RE+RI	<ul style="list-style-type: none"> ○ Code of Administrative Transgressions • The Lithuanian Committee for Medical Ethics was established under the Ministry of Health in 1995, and later it was renamed to the Lithuanian Bioethics Committee. The Bioethics Committee provides advice to the governmental bodies, informs the general public about bioethical issues, and coordinates activities of the regional ethics committees. Moreover, the Committee issues approvals to conduct biomedical research and opinions for clinical trials on medicinal products, prepares legal documents related to the ethical review of research, submits amendments to them and offers to consult and information service on the ethical and legal aspects of biomedical research. The Group of Experts in Biomedical Research is a part of the Committee responsible for the evaluation of biomedical research projects submitted to the Committee. The most important issues of bioethics, the Committee's activity plans and strategy are discussed and presented by the College. Members of the College are appointed by the Minister of Health on the proposal of the Director of the Committee. • Regional research ethics committees are based at the universities with the tertiary medical education level. For the ethical supervision of biomedical research in the Kaunas region, the Kaunas Regional Biomedical Research Ethics Committee was established at the Kaunas Medical University in 2001. The Vilnius Regional Biomedical Research Ethics Committee was established at Vilnius University in 2008. Since 1997, hospital ethics committees have been established in most healthcare institutions. • The Office of the Ombudsperson for Academic Ethics and Procedures is an independent entity that is responsible for the handling of complaints and initiation of investigations on HEIs' violations related to academic ethics and procedures. Also, this Office is responsible for undertaking preventive actions. 	<ul style="list-style-type: none"> • http://www.eurecnet.org/information/lithuania.html • http://bioetika.sam.lt/index.php?1610097551 • http://www.etika.gov.lt/sample-page/apie-istaiga/
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> • Unknown. • The Group of Experts at the Bioethics Committee is composed of 9 members, and the College of the Committee 17 members. According to the Law on Ethics of Biomedical Research, the regional ethics committees should be composed of 9 members. The Pharmaceutical Marketing Ethics Commission has a president, vice-president and 5 members. • The Ethics Commission of the Research Council of Lithuania has 9 members. • Every HEI set up ethics commission/committee following the recommendations for approval, implementation and monitoring of codes of academic ethics that have been developed by the Office of Ombudsperson for Academic Ethics and Procedures. In general, the ethics commission/committee focuses on issues related to academic ethics and research ethics. No institutional review board is established in social sciences and humanities. The minimum number of RI investigators in HEIs is 7 (Loreta Tauginienė, Vaidas Jurkevičius, Aurelija Novelskaitė, Raminta Pučėtaitė, Inga Gaižauskaitė, Regina Valutytė, Inga Daukšienė). 	<ul style="list-style-type: none"> • http://bioetika.sam.lt/index.php?1610097551 • http://www.eurecnet.org/information/lithuania.html • https://www.vaistukodeksas.lt/apie-etikos-komisija/ • https://www.lmt.lt/lt/apie-taryba/komisijos-ir-darbo-grupes/lietuvos-mokslo-tarybos-mokslines-veiklos-etikos-komisija/2285

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> Usually, postdoctoral students have paid positions but often PhD students have higher salaries than postdoctoral students. Lithuania allocates a very small portion of research and development costs to working costs which is the reason why researchers' salaries are considered to be lower regarding their professional qualification. During the 2014-2020 SF period, Research Council of Lithuania offers postdoctoral grants to support post-doctoral fellowship and Marie Skłodowska–Curie Actions fund scheme for postdocs. There are also institutional sources providing funds for a postdoctoral fellowship. From 2009 to 2015 Lithuania had a program "Postdoctoral internship implementation in Lithuania". This program was created to support researchers in taking up postdoctoral positions and to encourage them to work in an institution other than their own. 	<ul style="list-style-type: none"> https://www.lmt.lt/en/competitive-research-funding/carrier-mobility-and-dissemination-projects-funding/postdoctoral-fellowships/848 https://www.lmt.lt/lt/mokslo-finansavimas/mokslininku-inicijuoti-projektai/individualus-mtep-h2020-projektai/2384 https://www.vu.lt/en/research/research-activities/postdoc-fellowships https://cdn5.euraxess.org/sites/default/files/policy_library/lithuania_country_profile_rr2014_final.pdf
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> The success rate for postdoctoral grants provided by Research Council of Lithuania and funded by SF (2015-2018): Postdoctoral fellowships 45% Marie Skłodowska–Curie Actions fund scheme 100 % 	<ul style="list-style-type: none"> Source: Research Council of Lithuania
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> Research Council of Lithuania for Competitive funding programmes allocates around €15.8 mill. from State Budget (every last 3 years 2016 - 2018). The other funding source is EU Structural Funds (SF), which is not constant. Research Council of Lithuania in 2018 from EU SF allocated €13,427 mill. (in 2016 - 2017 – 0 €) 	<ul style="list-style-type: none"> https://cdn5.euraxess.org/sites/default/files/policy_library/lithuania_country_profile_rr2014_final.pdf
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> Lithuania approved wide-range recommendations for approval, implementation and monitoring of codes of academic ethics in HEIs that encompass research ethics too. This approach allowed to ensure the autonomy of HEIs in developing and specifying their code of academic ethics. Codes of ethics of all HEIs are publicly available on their websites. They are approved by the Senate/Council or of HEIs. Lithuania does not have a national code of research conduct but it has several codes of ethics related to professional ethics in the medical field. The Lithuanian University Rectors' Conference took the lead to develop Publication ethics guidelines and Guidelines on sexual harassment and gender-based harassment. The former is forthcoming in February 2019 while the latter is under development (expected deadline Autumn 2019). 	<ul style="list-style-type: none"> http://bioetika.sam.lt/index.php?612582840
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> No consistent training in this regard is provided. However, only a few initiatives are known. Vilnius University offers General Competence Skills Training. The part of the training considers publication of scientific results and publication ethics as part of it. 	<ul style="list-style-type: none"> https://www.vu.lt/mokslas/mokymai

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> • Mykolas Romeris University carries out the training cycle 'Innovative Researcher' where diverse topics for young researchers are suggested. Among these topics are responsible for research and innovation that covers research ethics too. • Annual international conference 'Shaping Ethics in Academia and Society' open arena for informal education of academia. 	
<p>How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available</p>	<ul style="list-style-type: none"> • Office of the Ombudsperson for Academic Ethics and Procedures is responsible for the investigation of complaints and violations of academic ethics and procedures in academia. The Office encourages HEIs to adhere to academic ethics and procedures, monitors their compliance with recommendations for approval, implementation and monitoring codes of academic ethics, and cooperates in solving problems related to violations of academic ethics and procedures. The investigation is conducted upon received complaints or at the own initiative. • All decisions of the ombudsperson are publicly available online in Lithuanian and their summaries in English. Depending on an individual request, decisions might be anonymised and/or non-anonymised. • The Commission on ethics of research activities examines infringement of ethical principles in research activities related to projects financed by the Council, to evaluation and publication of research results, expert activities of researchers, an organisation of research work, dissemination of research knowledge in the society and other activities of the Council. The Commission adheres to the principles of research ethics in activities of the Research Council of Lithuania and the provisions for ethical behaviour of researchers approved by Resolution No. VII-102 of 7 May 2012 of the Council and the Description of the Procedure for the Examination of Notifications Related to Infringements of Ethics of Research Activities at the Research Council approved by Resolution No. VII-126 of 17 December 2012 of the Council. 	<ul style="list-style-type: none"> • http://www.etika.gov.lt/wp-content/uploads/2018/05/Activity-report-for-2016.pdf • http://www.etika.gov.lt/kontrolieriaus-sprendimai/ • https://www.lmt.lt/lt/apie-taryba/komisijos-ir-darbo-grupes/lietuvos-mokslo-tarybos-mokslines-veiklos-etikos-komisija/2285 • https://www.lmt.lt/data/public/uploads/2016/10/lmt-metine-2015-visa-eng.pdf
<p>Degree of cooperation between institutions in RE+RI</p>	<ul style="list-style-type: none"> • The National Bioethics committee is responsible for coordination and methodological assistance to Hospital Ethics Committees and to Regional Biomedical Research Ethics Committees. Moreover, the Committee organises lectures and seminars for the purpose of networking between ethics committees. • At the national level, the Office of the Ombudsperson for Academic Ethics and Procedures organises roundtable discussions with HEIs to learn about their activities, relevant issues. Additionally, Office's practice in conducting investigations and related pitfalls is introduced to HEIs. Internationally, the Office takes part in the Council of Europe Platform on Ethics, Transparency and Integrity in Education (ETINED platform). • Lithuanian University Rectors' Conference is an active association in promoting RI through guidelines development, press articles and so far. • Mykolas Romeris University is a co-founder of the European Network for Academic Integrity (ENAI). The investigator from Lithuania has been elected to the ENAI Board. 	<ul style="list-style-type: none"> • Source: Lithuanian Bioethics Committee 1995/2005 • http://bioetika.sam.lt/index.php?161009755 • http://www.etika.gov.lt/wp-content/uploads/2018/05/Activity-report-for-2016.pdf • http://www.academicintegrity.eu/wp/bodies/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Protection of whistle-blowers	<ul style="list-style-type: none"> Several HEIs clearly state that anonymised reporting is not subject to the initiation of an investigation. In addition to this, very few HEIs explicitly define the principle of confidentiality when investigating alleged malpractice. This principle is interconnected to the protection of whistle-blowers. 	
Designated research integrity officers in institutions, whether they are mandatory, and who educate them	<ul style="list-style-type: none"> According to the Law on Research and Higher Education, each HEI must approve a code of ethics that serves a core document for ethics commission/committee. For clarity sake, it is important to present the function of such a commission/committee. Among the most common, one such function is listed as examining likely ethical infringements, but in some cases when the character of infringement is outside ethics, i.e. related to labour law, it is considered as a legal infringement. Another function relates to initiating and submitting drafts of amendments to the central administration of HEI, generally to the Senate/governing body as well as considering proposals for the improvement of a code of ethics which any member of the academic community might submit. No education for ethics commission/committee member is provided. Hence, ethics commission/committee is mainly gatekeepers of a code of ethics. Nevertheless, to get a consultation or ethical approval, research integrity officers as such are not assigned. 	
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> Vilnius University implemented two research projects on ethics total budget 103,000 Eur, Project Nr. MIP-82/2013 and Nr. MIP-37/2010). 	<ul style="list-style-type: none"> http://eneri.eu/partners/ http://www.academicintegrity.eu/wp/handbook/ https://spektras.lmt.lt/index0.php http://teise.vdu.lt/en/projects/integration-study-future-law-ethics-intelligent-technologies-future https://spektras.lmt.lt/index0.php
Annual meetings on research integrity	<ul style="list-style-type: none"> The Lithuanian Bioethics Committee organises annual meetings with regional ethics committees to discuss current issues regarding academic ethics and ethics in science in Lithuania. 	<ul style="list-style-type: none"> http://bioetika.sam.lt/index.php?1939659443
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> The States Medicines Control Agency is responsible for the approval of clinical trials regarding medicinal products. The Lithuanian Bioethics Committee is responsible for giving approval to clinical drug trials. For other types of biomedical research responsibility for approval lays at the Bioethics Committee or one of the regional ethics committees. Researchers must submit a report on the conduct of the biomedical research. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/lithuania.html http://www.lsmuni.lt/lt/struktura/kiti-padaliniai-ir-organizacijos/kauno-regioninis-biomedicininiu-tyrimu-etikos-komitetas/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether research and research data are open and accessible	<ul style="list-style-type: none"> The Research Council of Lithuania has a mandate of coordinating Open Access activities in Lithuania. In 2016 the Council adopted the Guidelines on Open Access to Scientific Publications and Data. Lithuanian Institutions with Open Access policy are the Kaunas University of Technology, Lithuanian University of Health Sciences, Mykolas Romeris University, Vilnius Gediminas Technical University, Vilnius University, and Vytautas Magnus University. In addition to this, the National Open Access Research Data Archive (MIDAS) is free and unrestricted Internet access to research outputs (scientific articles, studies, conference reports and other published and unpublished material) and research data, that each user can freely read, copy, print a small number of copies, save to removable media, distribute, search or link to full text articles safe from claims of copyright infringement. The MIDAS maintains and supports the open access to research data by taking into consideration the European Commission's Guidelines on Open Access to Scientific Publications and Research Data in Horizon 2020, European Research Council's Open Access Guidelines for researchers funded by the ERC and other relevant documents and guidelines. LiDA provides virtual digital infrastructure where researchers can deposit, search, browse, make online analyses and download almost 300 quantitative and qualitative social sciences and humanities data sets. As the National Member Institution at the Inter-university Consortium for Political and Social Research (ICPSR) LiDA also provides access to international empirical data resources for Lithuanian researchers at major science and research institutions. 	<ul style="list-style-type: none"> https://www.openaire.eu/item/lithuania https://www.midas.lt/public-app.html#/about?lang=en http://www.lidata.eu/en/index.php
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> Yes. The Lithuanian Bioethics Committee (LBC) is a national body for ethics assessment of biomedical research. Additionally, there are regional ethics committees whose work is coordinated by LBC. 	
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> Application submitted by Mykolas Romeris University 	
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> The Lithuanian Academy of Science awards Bank of Lithuania awards for scientific activities Best PhD thesis awards by Lithuanian Society of Young Researchers 	<ul style="list-style-type: none"> http://www.lma.lt/prizes-and-scholarships https://www.lb.lt/en/bank-of-lithuania-awards-for-scientific-activities
Whether research integrity is a part of the institutional quality assessment	<ul style="list-style-type: none"> Integrity and ethics are among core institutional values; however, research integrity is not embedded in the institutional quality assessment. 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> • Research and Higher Education Monitoring and Analysis Centre just finish benchmarking (results will be in some months). – note from January 2019 • Various stakeholders are publicly communicated about research (e.g. policy briefs, meetings). • Also, the contribution of social media is visible. There is a telecast 'Mokslo sriuba' (translation: Science Soup), headings in the news portals (e.g. Mokslo (translation: Science) on www.delfi.lt), a newspaper 'Mokslo Lietuva' (translation: Science Lithuania) and some others. 	<ul style="list-style-type: none"> • https://www.mosta.lt/en/reports-and-publications • https://www.mosta.lt/lt/palyginamasis-ekspertinis-mtep-vertinimas/rezultatai
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> • Trust in Lithuanian public institutions is low due to corruptive practices. However, there is no evidence how the public perceives research integrity and whether they (mis)trust in science. 	<ul style="list-style-type: none"> • Source: Country Report on Lithuania - A country report on Lithuania's position in the EU; European Policy Studies – Universiteit van Amsterdam, June 2013
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> • Within the period of 2013-2017, the news portal www.delfi.lt published around 40 press articles about ethical infringements. 	<ul style="list-style-type: none"> • Regarding (self-)plagiarism, authorship, contract cheating, fraud and conflict of interest
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> • The Ministry of Education and Science has signed 15 agreements with Lithuanian associations, companies, various institutions and higher education institutions to support student internship model in companies and institutions. • In order to encourage companies to employ (more) scientists, the Ministry of Higher Education and Science in 2010 allocated EUR 17.4 million to support employment in enterprises. • Income Tax Relief for Investing in research and development. • Baltic Bonus – a scheme created to promote cooperation between the three Baltic states (Lithuania, Latvia and Estonia) to participate in joint projects of Horizon 2020. 	<ul style="list-style-type: none"> • https://cdn5.euraxess.org/sites/default/files/policy_library/lithuania_country_profile_rr2014_final.pdf • https://www.smm.lt/web/lt/mokslas/mokestines-mtep-lenqvatos • https://www.smm.lt/web/en/science1/international-cooperation
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> • Promotion of Students' Scientific Activities - the research Council Program which encourages young people to gain practical experience while working in a research institution. The program is designed for Bachelor, Master's students and doctoral candidates and aims to raise young people's interest in pursuing a career in research. The Lithuanian Bioethics Committee organises seminars and training seminars to disseminate knowledge about research ethics. • National Science festival "Spaceship Earth" is annual event started in 2004 in Vilnius and Kaunas. Main aims of the festival are to foster a scientific culture in society and to encourage young audience to pursue careers in science. 	<ul style="list-style-type: none"> • https://cdn5.euraxess.org/sites/default/files/policy_library/lithuania_country_profile_rr2014_final.pdf • http://bioetika.sam.lt/index.php?1939659443 • https://www.moklofestivalis.eu/about-us/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Are there any disincentives?	<ul style="list-style-type: none"> In the document "Proposals on higher education and research system quality enhancement Opportunities" by the Lithuanian Ministry of Education, Science, and Sport the issues related to higher education and science are listed as well as proposals for improvement. The document mentions the average scientific activity and the implementation of research activity was mentioned as the weakest link in the field of research. Other mentioned issues include the ineffective use of funds which restricts the enhancement of study quality and raise of wages for academic staff- Lithuania allocates a very small portion of research and development costs to working costs, hence researchers receive a lower salary for their professional qualification. 	<ul style="list-style-type: none"> https://www.smm.lt/uploads/documents/en_smm/Reformos%20qaires_1-10_EN20160415.pdf
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> Lithuanian Code of Professional Ethics for Physicians Lithuanian Code of Ethics for Obstetricians and Gynecologists Code of Professional Ethics of the Lithuanian Medical Association Nursing Professional Ethics Code Code of Professional Ethics for Dentists Pharmaceutical Marketing Code Code of Professional Ethics of Lithuanian Physiotherapists Recommendations of the Lithuanian Bioethics Committee College 	<ul style="list-style-type: none"> http://bioetika.sam.lt/index.php?612582840 http://bioetika.sam.lt/index.php?1894537845 http://bioetika.sam.lt/index.php?2571038163 http://bioetika.sam.lt/index.php?2764725243 http://bioetika.sam.lt/index.php?612582840 https://www.vaistukodeksas.lt/ http://bioetika.sam.lt/get_file.php?file=bnNmTHpKMMhaNTJlcXBXZ3hhQm9rY3BrWmM2WGtHM1J5cFp5ekpXZG02VnV5cG5XbTJHVnIzQ2NZYUNYb1d5VmxhaHNrSmpIWmMyZG81cKxsbTNIYVp1Vm1wR2NvcGFjbnB4b2NwcWdhS1RLWW12R1pOVnR6WnlpYmRXVXA1Um1jdENaMHNhV2taMXVvV3FxbXBacm84WmptOUdZeFczS3luSndvY00IM0Q=&view=1 http://bioetika.sam.lt/index.php?889221572

8.10 Luxembourg

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 602,005 (2017) 	<ul style="list-style-type: none"> https://statistiques.public.lu/stat/TableView/tableView.aspx?ReportId=12856&IF_Language=enq&MainTheme=2&FldrName=1
GDP (World Bank)	<ul style="list-style-type: none"> US\$62.404 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=LU&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$104,103.03 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=LU&view=chart
Number of researchers	<ul style="list-style-type: none"> 3,134 researchers (head count in all sectors) in 2015; 2,505 researchers in full time equivalent (2016) 	<ul style="list-style-type: none"> https://statistiques.public.lu/stat/TableView/tableViewHTML.aspx?ReportId=13556&IF_Language=enq&MainTheme=4&FldrName=9&RFPPath=2222 https://statistiques.public.lu/stat/TableView/tableViewHTML.aspx?ReportId=13555&IF_Language=enq&MainTheme=4&FldrName=9&RFPPath=2222
Number of research institutions	<ul style="list-style-type: none"> Higher education: the University of Luxembourg and 3 research centres Public research institutes: 4 Other research organisations (public/private): 15 	<ul style="list-style-type: none"> https://www.fnr.lu/research-in-luxembourg/#1461325518535-9b38d7d2-f67e http://www.innovation.public.lu/en/decouvrir/acteurs/recherche-publique/autres-acteurs/index.html
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €659 million in 2016 	<ul style="list-style-type: none"> https://ec.europa.eu/eurostat/documents/2995521/8493770/9-01122017-AP-EN.pdf/94cc03d5-693b-4c1d-b5ca-8d32703591e7
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 1.24% GDP (2016) 	<ul style="list-style-type: none"> https://ec.europa.eu/eurostat/documents/2995521/8493770/9-01122017-AP-EN.pdf/94cc03d5-693b-4c1d-b5ca-8d32703591e7
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Government sector: 47.67% Business enterprise sector: 47.08% Funds from abroad: 3.38% Higher education sector: 1.65% Private non-profit sector: 0.21% 	<ul style="list-style-type: none"> https://statistiques.public.lu/stat/TableView/tableView.aspx

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 247 funded projects, 284 project participations, receiving €87.57 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/se/nse/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 8 ERC signed grants receiving €15.24 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/se/nse/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> Digital Lëtzebuerg – Digital Luxembourg 	<ul style="list-style-type: none"> http://www.innovation.public.lu/en/decouvri/r/politique/politics/index.html https://gouvernement.lu/en/dossiers/2014/digital-letzebuerg.html https://digital-luxembourg.public.lu/
National bodies for RE+RI	<ul style="list-style-type: none"> National Research Ethics Committee (CNER) National Data Protection Commission (CNPD) The National Consultative Commission of Ethics for Life Sciences and Health (CNE) National Commission for Research Integrity - The Luxembourg Agency for Research Integrity (LARI) 	<ul style="list-style-type: none"> http://www.cner.lu/ https://cnpd.public.lu/en/commission-nationale/missions.html https://cne.public.lu/fr/commission.html https://lari.lu/about/about-lari/
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> Grand-Ducal Regulation: <ul style="list-style-type: none"> Contained use of genetically modified organisms (transposing EU Directive 1998/81) Clinical trials in human medicines (transposing EU Directive 2001/20/CE) Protection of animals used in scientific research (transposing EU Directive 2010/63/UE) [Luxembourg] Loi sur la protection des animaux (06.06.2018), Chapter 8, Article 13 Luxembourgish Law: <ul style="list-style-type: none"> Establishment of hospitals Copyright (transposing EU Directive 2001/84) Protection of personal data (transposing EU Directive 1995/46/CE) Creation of the University of Luxembourg Codes: <ul style="list-style-type: none"> Medical Deontology Code 	<ul style="list-style-type: none"> http://legilux.public.lu/eli/etat/leg/memorial/2002/120?highlight http://legilux.public.lu/eli/etat/leg/rqd/2005/05/30/n5/jo http://legilux.public.lu/eli/etat/leg/memorial/2013/14?highlight https://deiereschutzgesetz.lu/la-loi/chapitre-8-protection-des-animaux-utilises-a-des-fins-scientifiques/ http://www.cner.lu/Portals/0/loi%20hospitali%C3%A8re%201998.pdf http://legilux.public.lu/eli/etat/leg/loi/2001/04/18/n2/jo http://legilux.public.lu/eli/etat/leg/loi/2002/08/02/n2/jo http://legilux.public.lu/eli/etat/leg/memorial/2003/149?highlight http://www.cner.lu/Portals/0/code%20d%C3%A9ontologie%20m%C3%A9decins%20version%202013%20(cf%20chapt%20V).pdf

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Organizational structures for RE+RI	<p>Research ethics:</p> <ul style="list-style-type: none"> The National Research Ethics Committee (CNER) is responsible for the protection of participants in clinical trials involving experimental drugs, therapies and medical devices. Besides clinical trials, CNER protects people included in different research studies, e.g. academic research. Before conducting a clinical trial in Luxembourg, approval from CNER and Ministry of Health, after requesting the opinion of the Health Directorate, must be obtained. National Consultative Ethics Committee for Life Sciences and Health (CNE) is responsible for addressing ethical concerns in the fields of biology, medicine, and health. The Committee can address concerns on its own initiative or at the request of Government and respective European Directives. National Commission for Data Protection (CNPD) is an independent authority created through the Luxembourgish law on the protection of individuals with regard to the processing of personal data. CNPD verifies the legality of the processing of personal data and ensures that the personal freedom and rights regarding data protection are respected. Research projects involving humans also have to be notified to or authorized by the CNPD. The University of Luxembourg has established several committees for handling questions in the field of research ethics. The Ethics Advisory Committee provides advice on ethical issues involved in the activities of the university' community and addresses complaints and conducts an investigation regarding alleged discrimination at the university. The investigation and advice are provided upon request of the University Council or the Rectorate. The Ethics Review Panel at the University of Luxembourg is responsible for providing ethics reviews of research proposals and publications regarding human participants, human biological material, animals or potentially harmful changes to the environment. The Animal Experimentation Ethics Committee (AEEC) is responsible for ensuring, on behalf of the University of Luxembourg, that care and use of animals for research and teaching are conducted in compliance with the law regulating the protection of animals used for scientific purposes. The Biosafety Committee is ensuring compliance with the biosafety policies and measures at the University of Luxembourg. LARI provides a free research ethics consultations for researchers and it also provides the Commission for Research Integrity which performs misconduct investigations for all member institutions. <p>Research integrity:</p> <ul style="list-style-type: none"> Luxembourg Agency for Research Integrity (LARI) is a non-profit organisation responsible for handling alleged cases of research misconduct. The cases are handled by the National Commission for the Research Integrity (CRI) which is a part of LARI. The members of LARI are the Luxembourg National Research Fund, University of Luxembourg, 	<ul style="list-style-type: none"> https://laridotlu.files.wordpress.com/2018/11/univofluxresearch-guidelineserp2018.pdf http://www.cner.lu/en-gb/aboutus.aspx https://cne.public.lu/fr/commission.html https://cnpd.public.lu/en.html http://sante.public.lu/fr/politique-sante/ministere-sante/direction-sante/index.html https://lari.lu/about/who-is-lari/ http://www.enrio.eu/news-activities/members/luxembourg/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>Luxembourg Institute for Science and Technology, Luxembourg Institute for Health, Luxembourg Institute for Socio-Economic Research. LARI provides the Commission for Research Integrity which performs misconduct investigations for all member institutions. LARI also provides training in the field of research integrity and provides a free ethics consult service to researchers of all levels who are affiliated with its member organizations.</p> <ul style="list-style-type: none"> • Research office at the University of Luxembourg is also responsible for the administrative overview to ensure that the institution's policies and procedures for the protection of rights of human participants in research are effectively applied. 	
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> • The National Research Ethics Committee (CNER) has a president, vice-president, and 10 members while the National Consultative Ethics Committee for Life Sciences and Health (CNE) has 15 members including president and vice president. National Commission for Data Protection (CNPD) has 3 members and their substitutes. LARI is composed of Secretary-General, 5 person Board and 4 people Commission. Ethics Advisory Committee of the University of Luxembourg has 4 members and Ethics Review Panel at the University of Luxembourg has at least 5 members (Chair, 3 members from different faculties and 1 from university interdisciplinary centre). The Animal Experimentation Committee has at least 4 members. 	<ul style="list-style-type: none"> • http://www.cner.lu/en-gb/aboutus/members.aspx • https://cne.public.lu/fr/commission.html • https://cnpd.public.lu/en/commission-nationale/organisation.html • https://www.uni.lu/research/chercheurs_recherche/standards_policies • https://laridotlu.files.wordpress.com/2018/11/univofluxresearch-guidelineserp2018.pdf
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> • Postdoctoral students have paid positions, usually funded by the institution and through post-doc programs of funding agencies. 	<ul style="list-style-type: none"> • https://www.fnr.lu/afr-postdoc/
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> • Luxembourg National Research Fund (FNR): 36% (2017) 	<ul style="list-style-type: none"> • http://storage.fnr.lu/index.php/s/pBAWbi3fBivZkLo#pdfviewer
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> • Luxembourg National Research Fund (FNR): €67.5 million (2017) 	<ul style="list-style-type: none"> • http://storage.fnr.lu/index.php/s/pBAWbi3fBivZkLo#pdfviewer
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> • Luxembourg doesn't have a national code of research conduct but all research institutions have developed guidelines and policies for good research practice, research integrity, and ethics in research. 	
Whether there are training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such	<ul style="list-style-type: none"> • LARI provides research ethics and integrity training via the CAPRI (Creative Approaches Promoting Research Integrity) program. LARI also has a program of Peer Coaching which guides researchers in designing, conducting, recording, monitoring, auditing, analysis, and reporting of research. In November 2018 LARI trained first coaches in different research institutions. 	<ul style="list-style-type: none"> • https://lari.lu/lari-services/researcher-training/ • https://lari.lu/lari-services/lari-peer-coaching/ • https://www.uni.lu/studies/doctoral_education/doctoral_applicant/doctoral_training • https://www.lih.lu/page/departments/gm-doct-doctoral-training-1392

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
training is evaluated and monitored	<ul style="list-style-type: none"> The University of Luxembourg has a program of doctoral training courses, called Transferable Skills Training. The courses cover research ethics in science and principles of good research practice. Luxembourg Institute of Health has doctoral training and among others, it covers an area of good research practice. Moreover, the Institute of Health provides training and workshops for early staged researchers to help them develop skills for their future career. 	
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> The National Commission for Research Integrity is a part of the Luxembourg Agency for Research Integrity and responsible for the investigation of cases of research misconduct. The Commission may be called upon by any person or organisation with a legal capacity which has knowledge of suspected scientific misconduct occurring in LARI member organisations. Moreover, the Commission may also investigate cases of suspected scientific misconduct on their own initiative. If the case of alleged misconduct has happened more than 10 years ago, the Commission can refuse to handle the cases. The decision about conducting an investigation or decide to not to initiate an investigation or suspend the case. If the Commission decides to initiate the investigation its decision will be sent to the Board of LARI, person or organisation that have reported the case, person to whom the allegations refer to, head of the affected research institution, and FNR if the case occurs in relation with the FNR funded project or researcher. In exceptional cases, the Commission can decide not to communicate the decision to abovementioned parties due to the higher priority to protect the accused person. Upon completion of the investigation, the Commission member leading the investigation shall compose a summary opinion which contains an assessment of the results of the investigation. This will be presented to other members for approval. The opinion is further sent to the person or institution which called upon Commission if it is directly affected by allegations, and to the person to whom the allegation referred. The opinion is also sent to the LARI Board for information purposes. 	<ul style="list-style-type: none"> https://lari.lu/lari-services/investigations-cri-rules-of-procedure/
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> The National Ethics Committee (CNER) cooperates with the National Data Protection Commission (CNPD) which has one member attending the national ethics committee meeting as an observer. Copies of the opinions of CNER during its meetings are then sent to the CNPD, as well as to the Competent Authority (Pharmacy and Medicines' Division of the Ministry of Health). Members of CNER cooperate with LARI in the cases of research misconduct. LARI also organises training courses for coaches at different research institutions. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/luxembourg.html https://lari.lu/about/who-is-lari/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Protection of whistle-blowers	<ul style="list-style-type: none"> • Luxembourg law doesn't have a formal definition of the term "whistleblowing". There are specific provisions in the Labour Code designed to protect public and private sector employees who report alleged corruption or abuse of influence in their workplace. The employees are protected if the reports are made in good faith. These provisions protect employees from employment agreement reprisals and terminations due to whistleblowing. The suspected misconduct can be reported anonymously if there are valid reasons for anonymity. • The LARI CRI Rules of Procedure state that the Commission protects the reporting person or organisation (whistle-blower protection). The anonymous reports of suspected scientific will be considered only if there are valid reasons for the reporting person to remain anonymous. 	<ul style="list-style-type: none"> • https://lari.lu/about/about-lari/ • http://legilux.public.lu/eli/etat/leg/code/travail/20190101 • https://laridotlu.files.wordpress.com/2018/11/rules-of-procedure-cri.pdf
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> • Usually, research institutions have offices for providing support to researchers and ethics committees. For example, the University of Luxembourg has the Ethics Advisory Committee to handle cases regarding ethical issues at the university community. The Research office provides administrative overview ensuring that institutional policies and procedures for the protection of rights and welfare of human participants in research are being effectively applied. LARI Coaches who provide support, encouragement, guidance to researchers and helps them produce robust, ethical research are present at the University of Luxembourg, FNR, and Luxembourg Institute for health, Luxembourg Institute for Socio-Economic Research, and LCSB. 	<ul style="list-style-type: none"> • https://wwwen.uni.lu/research/chercheurs_recherche/standards_policies • https://lari.lu/lari-services/lari-peer-coaching/
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> • LARI keeps a registry of its cases and consultations for quality improvement and research. The funding for this registry is part of the general funding for LARI. LARI plans to publish research based on the anonymized registry content. Also, LARI collects anonymous electronic feedback from all training sessions using a standardized survey. Survey results accrue and will be analysed for quality improvement and research publications. This work is also supported by LARI's general funding. 	
Annual meetings on research integrity	<ul style="list-style-type: none"> • LARI organises meetings, workshops and training courses for research integrity (including an annual meeting of the Commission for Research Integrity). There are also national training days organised by the Clinical and Epidemiological Investigations Center for the members of ethics committees. The Luxembourg Institute of Health also organizes training for incoming PhD students. 	
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> • The National Research Ethics Committee provides a single opinion which is valid for all the country's investigational sites. 	<ul style="list-style-type: none"> • http://www.cner.lu/en-gb/procedures/submissionofanewstudy.aspx

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether research and research data are open and accessible	<ul style="list-style-type: none"> In 2015, all Luxembourg's research institutions signed and adopted the common principles on Open Access. The National Policy on Open Access states that results from publicly-funded research are expected to be disseminated via high quality, peer-reviewed publications and it should be free and available to everyone using the internet. This is important for emphasizing the impact that research outputs have on science, industry, policy making and society in general. 	<ul style="list-style-type: none"> https://www.openaire.eu/item/luxembourg
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> Yes. Luxembourg National Research Ethics Committee (Comité National d'Ethique de Recherche – CNER) is the only national research ethics committee. It provides opinions valid for all research conducted in Luxembourg. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/luxembourg.html
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> Yes. Luxembourg National Research Fund (FNR) was an ENRIO member 2010-2018. LARI is a member since 2018 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/luxembourg/
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> FNR Awards: Outstanding Scientific Publication; Outstanding PhD Thesis; Outstanding Promotion of Science to the Public, and Outstanding Research-Driven Innovation. 	<ul style="list-style-type: none"> https://www.fnr.lu/fnr-awards-ceremony/
Whether research integrity is a part of the institutional quality assessment	<ul style="list-style-type: none"> Yes? 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> The Ministry of Higher Education and Research of Luxembourg mandated Interface Policy Studies, Research, Consulting, Switzerland, to organise and lead the third external evaluation of the University in 2016. The focus of the evaluation was the research performance of the various research units and interdisciplinary centres at the University. The evaluation is based on 13 peer reviews of the research units and interdisciplinary centres, as well as interviews with the management of the UL. The report states that research units demonstrate a clear impact on the society and transfer of knowledge occurs in different ways. The transfer of knowledge is achieved through cooperation with industry, through service providers to the public sector, i.e., several research units provide research and services to the public sector. Moreover, the transfer of knowledge is achieved through training of student and PhD candidates by attracting highly qualified researchers from abroad. Several research units have a direct influence on politics and society through public event and communication via media. 	
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> Through the Secretary of State for Higher Education and Research, there has been strong support for research integrity, including “fostering a culture of the integrity of research.” According to a 2011 EU competitiveness report, “The highest trust in science and technology can be found in Malta, Iceland, the United Kingdom, Luxembourg and Norway [p.454].” 	<ul style="list-style-type: none"> http://www.eu2015lu.eu/en/actualites/articles-actualite/2015/07/info-compet-hansen/index.html https://ec.europa.eu/research/innovation-union/pdf/competitiveness-report/2011/chapters/new_perspectives_smart_policy_design_chapter_3.pdf
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> Mr Science is a media partnership with TV and radio created for the promotion of research. Moreover, Science.lu is a web page aiming to promote science in Luxembourg. 	
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> FNR promotes the collaboration between research and industry by offering different funding schemes. Moreover, FNR promotes the international research collaboration. 	<ul style="list-style-type: none"> https://www.fnr.lu/innovation-industry-partnerships/ https://www.fnr.lu/fnr-international-cooperation/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> FNR organises different activities to bring closer science to the general public. Science Festival is organised by the FNR in collaboration with the Natural History Museum and the last one had 58 workshops, 8 shows and more than 10 000 visitors. Moreover, in 2017 FNR organised the Science journalism contest where 14 articles popularising science were presented. FNR also conducted 14 training courses for researchers, teachers and educators in the field of communication and popularising science. Researchers at School initiative – 111 researchers visited 66 classes and 26 colleges. Mr Science – media partnership with RTL television and Radio. Science.lu – website to promote science which also has its Facebook page and YouTube channel. The University of Luxembourg also organises various publicly open lectures and events. 	<ul style="list-style-type: none"> http://storage.fnr.lu/index.php/s/pBAWbi3fBivZkLo#pdfviewer https://www.science.lu/de/ https://www.science.lu/de/mr-science https://wwwen.uni.lu/university/science_public
Are there any disincentives?	<ul style="list-style-type: none"> As with most countries, the tenure process at the University of Luxembourg does not offer rewards for Open Access publishing and is skewed to prioritize publishing in journals with high impact factor. 	
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> The University of Luxembourg – Research Ethics Guidelines The University of Luxembourg – Policy on Ethics in Research LARI - 10 Tips for Robust and Ethical Research LARI Research Ethics FAQ LARI YouTube Channel (training videos) FNR Research Integrity Guidelines FNR Ethics Charter and Code of Conduct for Research Assessment FNR Policy on Open Access National Policy on Open Access FNR The use of animals in biomedical research FNR National Quality Framework for Doctoral Training LARI Coach Handbook 	<ul style="list-style-type: none"> https://laridotlu.files.wordpress.com/2018/11/univofluxresearch-guidelineserp2018.pdf https://wwwen.uni.lu/research/chercheurs_recherche/standards_policies https://lari.lu/lari-services/researcher-training/ https://lari.lu/best-practice-useful-links/research-ethics-faq/ https://www.youtube.com/channel/UCbH-x6aONu4i-o9ZsES37cQ https://www.fnr.lu/fnr-beneficiaries/how-we-fund-research/ https://lari.lu/lari-services/lari-peer-coaching/

8.11 Moldova

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 3,547,539 	<ul style="list-style-type: none"> http://statbank.statistica.md/pxweb/pxweb/en/20%20Populatia%20si%20procese%20demografice/20%20Populatia%20si%20procese%20demografice_POP010/POP010100.px/table/tableViewLayout1/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774
GDP (World Bank)	<ul style="list-style-type: none"> US\$8.128 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=MD&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$2,289.88 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=MD&view=chart
Number of researchers	<ul style="list-style-type: none"> 3,180 researchers (head count in all sectors), 2,577 researchers in full-time equivalent (2016) 	<ul style="list-style-type: none"> http://www.statistica.md/newsview.php?l=ro&idc=168&id=5973 http://uis.unesco.org/en/country/md?theme=science-technology-and-innovation
Number of research institutions	<ul style="list-style-type: none"> Ministry of Education, Culture and Research: 19 research institutes, 2 Museums Ministry of Health, Labour and Social Protection: 8 medical and research institutions Ministry of Agriculture, regional development and Environment: 7 research institutions Higher education: 18 public universities and 12 private universities 	<ul style="list-style-type: none"> http://www.soros.md/files/publications/documents/Research,%20Development%20and%20Innovation%20in%20RM.pdf http://lex.justice.md/md/371186/ https://msmps.gov.md/ro/advanced-page-type/institutii-subordonate-din-sanatate http://madr.gov.md/ro/content/organiza%C8%9Bile-din-sfera-%C8%99tiin%C8%9Bei-%C8%99i-inov%C4%83rii https://mecc.gov.md/ro/content/institutiile-de-invatamant-superior
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €24.8 million (2019) 	<ul style="list-style-type: none"> http://uis.unesco.org/en/country/md?theme=science-technology-and-innovation
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 0.30% GDP (2016) 	<ul style="list-style-type: none"> http://uis.unesco.org/en/country/md?theme=science-technology-and-innovation

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Government sector: 70% Business sector: 20% Higher education sector: 10% Majority of R&D expenditure is performed by government, moreover, the government also finances most of the R&D activities in Moldova. 	<ul style="list-style-type: none"> Source: European Commission - H2020 PSF Peer Review of the Moldovan Research and Innovation System.
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 38 funded projects, 48 project participations, receiving €4.73 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/nse/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> None 	
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> The Innovation Strategy of the Republic of Moldova 2013-2020 "Innovations for Competitiveness" The National Research and Development Strategy of the Republic of Moldova (2014) The national Roadmap of integration of Republic of Moldova in ERA 	<ul style="list-style-type: none"> https://mei.gov.md/en/content/inovationshtp://lex.justice.md/index.php?action=view&view=doc&lang=1&id=356042 Government decision no. 1081/2018 https://www.monitorul.md/monitor/v-2093-v/ https://mecc.gov.md/sites/default/files/national_roadmap_for_the_integration_of_the_republic_of_moldova_into_the_european_research_area_for_2019-2021_and_the_action_plan_for_its_implementation.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> Moldova doesn't have an official structure to deal with research integrity. The National Authority for Integrity is dealing only with public servants and head of institutes. 	<ul style="list-style-type: none"> Source: Horizon 2020 Policy Support Facility; MLE on Research Integrity, Kick off Brussels, 14.11.2018
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> The Code on Science and Innovation of the Republic of Moldova Government decision regarding the approval of the research and development strategy of the Republic of Moldova until 2020 Government decision regarding the approval of the Republic of Moldova "Innovation Strategy for the period 2013-2020 – Innovation for Competitiveness" Government decision for the approval of the Regulation on the organisation of the PhD studies Government decision for the approval of the National Roadmap of Integration of Republic of Moldova in ERA 	<ul style="list-style-type: none"> http://lex.justice.md/md/286236/ http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=356042 http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=350541 http://lex.justice.md/md/356044/ Government decision no. 1081/2018 https://www.monitorul.md/monitor/v-2093-v/

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Organizational structures for RE+RI	<ul style="list-style-type: none"> As a result of the reform of the fields of research and innovation sector, the Ministry of Education, Culture and Research became the central public authority responsible for policy development in the fields of research and innovation, as well as for monitoring their implementation. The Academy of Sciences of Moldova (ASM) is the highest scientific forum of the country. It coordinates scientific and innovation activity, serves as a scientific consultant of the public authorities of the Republic of Moldova, and it has an autonomous statute and acts on the basis of self-administration principles. The National Authority for Integrity is handling only cases of public servants and head of institutes. Moldova doesn't have a national body for research ethics and research integrity, as well as developed structure to handle cases of research misconduct. There are about 15 local ethics committees but the national system and training for RECs are not fully developed. 	<ul style="list-style-type: none"> http://lex.justice.md/md/371186/ http://www.asm.md/?go=despre&new_language=2 https://www.academia.edu/6998610/Strengthening_national_research_ethics_committees_system_of_Republic_of_Moldova_in_East-European_social-political_transitional_context
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> Unknown. 	
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> Unknown. 	
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> Unknown. 	
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> The Academy of Sciences – 488,9 million Moldovan leu (2017) The Ministry of Education, Culture and Research - institutional funding The National Agency for Research and Development – competitive funding 	<ul style="list-style-type: none"> http://www.asm.md/administrator/fisiere/rapoarte/f176.pdf pp 15 sqq. https://mecc.gov.md/sites/default/files/informatie_cercetare_universitati_2015.pdf http://asm.md/index.php?go=activitat&n=5&new_language=0
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> Moldova doesn't have a national document regarding research integrity. 	<ul style="list-style-type: none"> Source: Horizon 2020 Policy Support Facility; MLE on Research Integrity, Kick off Brussels, 14.11.2018
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> As stated in the Horizon 2020 Policy Support Facility - MLE on Research Integrity document, training exists as separate actions usually regarding open access and open science. As well, many of state universities, have courses on Professional Ethics at the graduate level, that are designed by the faculties it selves. 	<ul style="list-style-type: none"> For example: http://usm.md/wp-content/uploads/0222.1-Istorie-2017-1.pdf
How and by whom investigations of alleged	<ul style="list-style-type: none"> Maybe this role is taken by local ethics committees? 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> In practice, there were approved ad hoc commissions designated by the different institution to investigate cases. Usually, the commission proved even the misconduct; the court had another opinion. 	
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> Sporadic cooperation. 	
Protection of whistle-blowers	<ul style="list-style-type: none"> Not officially. 	
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> Usually, in Universities, especially in the State University of Medicine and Pharmaceuticals, there are Commissions/Committees of ethics, which are approved by the Senates. As well, in the Academy of Sciences. No education is provided for these persons. 	<ul style="list-style-type: none"> http://comitetetica.usmf.md/en
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> Particular and sporadic research. 	<ul style="list-style-type: none"> https://www.academia.edu/6998610/Strengthening_national_research_ethics_committees_system_of_Republic_of_Moldova_in_East-European_social-political_transitional_context
Annual meetings on research integrity	<ul style="list-style-type: none"> No. 	
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> Yes. Clinical trials require the approval of the National Medicine Agency. 	<ul style="list-style-type: none"> http://www.synevo-centrallabs.eu/media/docs/resources/Developing-of-clinical-trials-in-Republic-of-Moldova.pdf
Whether research and research data are open and accessible	<ul style="list-style-type: none"> In 2012 the project named Optimizing Scholarly Communication led to the adoption of an open access policy by several institutions and the institutional Open Access repository was launched. Later on, more research institutions and universities have adopted the open access policy. There is also the National Bibliometric Instrument, which is the largest e-library with Open Access to articles published in the scientific journals of the Republic of Moldova during the period 1993-2018. 	<ul style="list-style-type: none"> http://www.eifl.net/eifl-in-action/open-access-moldova https://ibn.idsi.md/ro/despre-IBN
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> No. 	
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> No. 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> The National Award – Government of Republic of Moldova Youth Prize in Science, Technology, and Arts - The Ministry of Education and Youth; established in 1991 and awarded to people aged 18-35, working in the given area. The Academy of Sciences Awards (State Prize Awards for Young researchers, Prizes – Bank of Economy “Economy”, Award for the Journalists, Prize Archimedes Lever) and Medals. Government Excellence Scholarship for PhD students who have achieved outstanding academic performance and actively participate in the social life of the institution. There are research institutions who offer special Grading of merits for stimulating scientific activity (based on performance). Also, annual awards for excellence in scientific research and didactic activity are offered by universities and institutes. 	<ul style="list-style-type: none"> https://gov.md/en/content/national-award-2016-contest-has-started https://www.moldova.org/en/youth-prize-in-science-technology-and-arts-competition-launched-148733-enq/ http://www.asm.md/?go=despre&new_lang_uage=2 http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=374493
Whether research integrity is a part of institutional quality assessment	<ul style="list-style-type: none"> Not at the research institutional level, but it is at the doctoral programs evaluation level. There are universities which have codes of academic integrity and this is part of their quality management. Also, the National Agency for Quality Assurance in Education and Research elaborated a Guide to self-assessment report that includes performance criteria and indicators. One of them is the organization of the scientific research. 	<ul style="list-style-type: none"> http://www.anacip.md/index.php/ro/component/idownloads/send/17-quvernul-republicii-moldova/32-rom-hq-nr-586-din-24-08-2015-pentru-aprobarea-metodologiei-de-evaluare-externa-in-vederea-autorizarii-de-functionare-provizorie-a-scolilor-doctorale-si-a-programelor-de-doctorat?Itemid=0 http://usm.md/wp-content/uploads/Codul-de-Etica-si-Integritate-Academica-al-USM.pdf http://www.anacip.md/index.php/ro/legislatie/anacip/ghiduri/send/22-ghiduri/411-ghid-de-evaluare-externa-a-institutiilor-de-invatamant-superior
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> The Night of European Researchers is organised by the Academy of Sciences in collaboration with other research institutions to promote science among the young population and encourage them to pursue a scientific career. As well the Science Slam competitions have the same objectives. 	<ul style="list-style-type: none"> http://rn.asm.md/ http://cpi.asm.md/?p=6542&lang=en
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> As far as many public scandals involve high position researchers, the perception in public of the science and its role-results is more negative and pessimist than positive. Special studies don't exist on this topic. 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> Some research integrity aspects are discussed in media. Usually regarding high position personalities in research. 	
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> The Ministry of Education, Culture and Research, in cooperation with the EUREKA International Association in 2018 organised EUREKA Info Day event. The EUREKA International Association is a platform for international cooperation in research, development, and innovation. The objective of the event is to inform the scientific community and the business environment of Moldova about the EUREKA cooperation framework, the activity of the program, how researchers and entrepreneurs can participate in the existing EUREKA actions, how to launch their own actions, and how to prepare and submit a successful project proposal. The Academy of Sciences promotes collaboration among different research institutes and with different countries with bilateral and collaborative projects. This is done by the International Project Center which was a part of ASM, now it is incorporated in the National Agency for Research and Development responsible for implementing government policies in the fields of research and innovation, also organizes the activities concerning participation in international research programmes. 	<ul style="list-style-type: none"> https://mecc.gov.md/ro/content/eureka-info-day https://expert.idsi.md/ro/concurs_rss http://cpi.asm.md/?page_id=168 https://anecd.gov.md/en/node/13
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> The National Scientific Conference "Open Science" is organised in November 2018 aiming to present contemporary approaches to Open Science and perspectives for the Republic of Moldova, promote Open Access and Open Science, present innovative results in capitalizing on scientific content, and to develop a partnership to promote Open Science in academia. In 2015 a number of higher education institution organised 128 scientific events aiming popularisation of scientific results and grants. 	<ul style="list-style-type: none"> https://idsi.md/conferinta-stiintifica-nationala-stiinta-deschisa-2018 https://mecc.gov.md/sites/default/files/informatie_cercetare_universitati_2015.pdf
Are there any disincentives?		
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> European Code of Conduct for Research Integrity 	<ul style="list-style-type: none"> https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

8.12 Norway

Framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 5,295,619 	<ul style="list-style-type: none"> https://www.ssb.no/en/befolkning/nokkeltall/population
GDP (World Bank)	<ul style="list-style-type: none"> US\$398.832 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=NO&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$75,504.57 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=NO&view=chart
Number of researchers	<ul style="list-style-type: none"> 54,865 researchers (head count in all sectors) in 2016; 43,918 researchers in full time equivalent (2016) 	<ul style="list-style-type: none"> https://brage.bibsys.no/xmlui/bitstream/handle/11250/2499206/Folder%202018%20web_eng.pdf?sequence=4&isAllowed=y
Number of research institutions	<ul style="list-style-type: none"> Higher education: 10 public universities, 7 specialised university institutes, 2 private, 8 public university colleges, and 7 private university colleges (there has recently been a merger of universities and university colleges). Research institutes: 48 Norwegian Centres of Excellence: 21 Centres for Research-based Innovation: 17 Centres for Environment-friendly Energy Research: 11 In addition, there are 49 health trusts/hospitals with statutory tasks in research and development work and private, ideal hospital that is part of a national measurement system for research. 	<ul style="list-style-type: none"> https://www.uhr.no/en/about-uhr/member-institutions/ https://www.forskningsradet.no/en/About_the_institute_sector/1254010731859 https://www.forskningsradet.no/prognett-sff/Centres_at_a_glance/1224067001819 https://www.forskningsradet.no/prognett-sfi/Centres_at_a_glance/1224067097756 https://www.forskningsradet.no/prognett-energiserter/About_the_centres/1222932140914
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> 63.5 billion Norwegian Krone (2016) 	<ul style="list-style-type: none"> https://brage.bibsys.no/xmlui/bitstream/handle/11250/2499206/Folder%202018%20web_eng.pdf?sequence=4&isAllowed=y
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 2.03% GDP (2016) 	<ul style="list-style-type: none"> https://brage.bibsys.no/xmlui/bitstream/handle/11250/2499206/Folder%202018%20web_eng.pdf?sequence=4&isAllowed=y
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Industrial sector: 46.5% Universities and colleges: 27.3% Government sector: 12.8% Research enterprises: 6.7% Hospitals trust: 6.6% 	<ul style="list-style-type: none"> https://brage.bibsys.no/xmlui/bitstream/handle/11250/2499206/Folder%202018%20web_eng.pdf?sequence=4&isAllowed=y

Framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> The vast majority of funds for the industrial sector were from the sector itself, followed by foreign funds and private funds. Government funds were allocated mostly to universities and colleges, as well to institute sector. Research enterprises were almost equally funded by industrial and government sector, while hospitals mostly by the government. 	
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 992 funded projects, 1,537 project participations, receiving €701.6 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 44 ERC signed grants receiving €77.92 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/erUXRa/state/analysis

PROCESSES

Whether a country has scientific strategy	<ul style="list-style-type: none"> The long-term plan for research and higher education 2019-2028 Norway also has a scientific strategy regarding cooperation with the EU. 	<ul style="list-style-type: none"> https://www.regjeringen.no/no/dokumenter/meld.-st.-4-20182019/id2614131/ https://www.regjeringen.no/contentassets/4c96155c697f47cabc2c4ea23e0507ec/strategy-for-research-and-innovation-cooperation-with-the-eu-horizon-2020-and-era.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> The National Research Ethics Committees in Norway (FEK) The National Committee for Medical and Health Research Ethics (NEM) The National Committee for Research Ethics in Science and Technology (NENT) The National Committee for Research Ethics in the Social Sciences and the Humanities (NESH) The National Committee for Research Ethics on Human Remains (SKJ) The National Commission for the Investigation of Research Misconduct (GRU) 	<ul style="list-style-type: none"> https://www.etikkom.no/en/ https://www.etikkom.no/en/our-work/about-us/the-national-committee-for-medical-and-health-research-ethics-nem/about-nem/ https://www.etikkom.no/en/our-work/about-us/the-national-committee-for-research-ethics-in-science-and-technology-nent/about-nent/ https://www.etikkom.no/en/our-work/about-us/the-national-committee-for-research-ethics-in-the-social-sciences-and-the-humanities-nesh/about-nesh/ https://www.etikkom.no/en/our-work/about-us/the-national-committee-for-research-ethics-on-human-remains/ https://www.etikkom.no/en/our-work/about-us/the-national-commission-for-the-investigation-of-research-misconduct/about-the-national-

Framework element	Information collected (and date for most recent source of information)	Notes / Source
		commission-for-the-investigation-of-research-misconduct/
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> • Personal Data Act • Research Ethics Act • Research Ethics Regulation • University and Higher Education Act • Health Research Act • Health Care Act • Biotechnology Act • Regulation on the capture and collection of wild animals for scientific or other special purposes • Regulation on Animal Experimentation • Gene Technology Act • Animal Welfare Act 	<ul style="list-style-type: none"> • https://lovdata.no/dokument/NL/lov/2018-06-15-38 • https://lovdata.no/dokument/NL/lov/2017-04-28-23 • https://lovdata.no/dokument/SF/forskrift/2018-03-05-321 • https://lovdata.no/dokument/NL/lov/2005-04-01-15 • https://lovdata.no/dokument/NL/lov/2008-06-20-44 • https://lovdata.no/dokument/NL/lov/1999-07-02-64 • https://lovdata.no/dokument/NL/lov/2003-12-05-100 • https://lovdata.no/dokument/SF/forskrift/2003-03-14-349 • https://lovdata.no/dokument/SF/forskrift/2015-06-18-76 • https://www.regjeringen.no/en/dokumenter/gene-technology-act/id173031/ • https://www.regjeringen.no/en/dokumenter/animal-welfare-act/id571188/
Organizational structures for RE+RI	<p>National:</p> <ul style="list-style-type: none"> • The current Norwegian research ethics system is regulated by the Research Ethics Act of 2017, which secures the independence of the ethical committees, promotes the individual researcher’s responsibility to familiarise with and follow ethical standards, and emphasises that research institutions must ensure that all research conducted in their institution is in accordance with ethical standards. • The three National Research Ethics Committees (NEM, NENT, and NESH) were established in 1990 to coordinate and support work on research ethics on a national level. GRU was established in 2017 as a separate commission for the investigation of research misconduct, in accordance with the first Research Ethics Act of 2006. In 2013 these bodies were united as the National Research Ethics Committees in Norway (FEK) established as a separate unit under the Ministry of Education and Research (KD). • At the national level, NEM, NENT and NESH have a proactive approach, aimed at teaching or at approving or advising research projects. GRU is in charge of investigating serious cases of research misconduct, providing guidance to individual researchers and institutions, as well as overseeing their work. Moreover, the Commission can investigate cases of research misconduct that happened abroad if they involve researchers employed by a Norwegian institution. The Commission can handle cases that are brought by individual 	<ul style="list-style-type: none"> • https://www.etikkom.no/en/our-work/ • http://www.enrio.eu/news-activities/members/norway/ • http://www.eurecnet.org/literature/information/norway.html • https://www.regjeringen.no/contentassets/751546e9c5a943b2ab7674f5e87baf90/counseling-paper---research-ethics-in-norway.pdf

Framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>researchers, institutions or it can decide to conduct an investigation by itself if it has knowledge about the non-adequate handle of the case at the local level.</p> <p>Local:</p> <ul style="list-style-type: none"> The members of all the national committees are appointed by the Ministry of Education and Research, based on input from the Research Council. GRU is chaired by the person with judicial experience and members are appointed from different scientific fields. Moreover, at least one member should be from abroad. Based on the provisions of the Research Ethics Act on, each institution should prevent and handle cases of research misconduct. All research institutions must have an independent commission for investigation of possible cases of scientific misconduct (§6). Moreover, institutions must inform the National Commission for the Investigation of Research Misconduct about handled cases and institutions are in charge of sanctions, whether they are proposed by the Commission or brought by the institution. There are 7 regional ethics committees for medical and health research in Norway situated in 5 different regions (REK). Universities, i.e. medical faculties have ethics committees for medical and health research ethics which are guided by NEM. Moreover, NEM is an appeal body for these ethics committees. Most Norwegian universities emphasize the responsibility of each researcher to adhere to ethical standards and the institutional responsibility to promote ethical standards. Moreover, universities usually have guidelines for research ethics and some universities have action plans for promoting good research practice and preventing research misconduct. Universities have established an ethics committee and/or committee for the investigations of misconduct. The Norwegian Association for Higher Education Institutions (UHR) has also developed guidelines for processing issues of research ethics and promotes them among universities. Research institutions usually have ethics guidelines. The Association of Norwegian Research Institutes (FFA) established an ethics committee for 48 institutes to deal with cases of misconduct and provide advice and support regarding ethics and integrity in research. Health Trusts have established procedures for handling issues regarding research ethics and some have established ombudsman. 	
<p>Number of researchers and others involved in research integrity</p>	<ul style="list-style-type: none"> The National Committee for Medical and Health Research Ethics (NEM) and the National Committee for Research Ethics in the Social Sciences and the Humanities (NESH) and the National Committee for Research Ethics in Science and Technology (NENT) have eight to thirteen members each and up to three deputy members. The National Commission for the Investigation of Research Misconduct has five to seven members and up to three deputy members. Ethics committee and/or committee for the investigations of misconduct at the at the research institutions must have at least three members. 	<ul style="list-style-type: none"> https://lovdata.no/dokument/SF/forskrift/2018-03-05-321

Framework element	Information collected (and date for most recent source of information)	Notes / Source
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> In Norway, postdoctoral students have paid positions and they are mostly employed by their institutions. Fixed pay scales are set by unions, government and universities. They have job security and social security benefits, as well as internationally competitive wages. 	<ul style="list-style-type: none"> https://www.jobs.ac.uk/media/pdf/careers/resources/postdoctoral-careers-in-europe-norway.pdf https://www.regjeringen.no/contentassets/12490ae3fbf746eaad2c6b2abd78a14f/br ochure-research-in-norway-2013.pdf
Percentage of grant success for applications to national funders	<p><u>Divided into type of programme:</u></p> <ul style="list-style-type: none"> Programmes: 17% Independent projects: 14% Networking measures: 53% Public administration: 21% Other: 67% Infrastructure: 26% 	<p>Annual Report in Norwegian:</p> <ul style="list-style-type: none"> https://www.forskningsradet.no/no/Arsrapporter/1254018067302
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> The Research Council of Norway: NOK 9.7 billion (2017) NordForsk: NOK 327 million 	<ul style="list-style-type: none"> https://www.forskningsradet.no/en/Annual_report/1138785841818 https://www.nordforsk.org/en/about-nordforsk/key-facts-and-figures
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> Norway has a number of guidelines and checklists regarding ethics and integrity in the different scientific fields (NEM, NENT, NESH). Moreover, research integrity and research ethics are regulated by law with the Research Ethics Act. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/new-act-research-ethicsintegrity-norway/ "Guidelines for Research Ethics in Science and Technology", published by NENT: https://www.etikkom.no/globalassets/documents/english-publications/60126_fek_guidelines_nent_digital.pdf Guidelines for Research Ethics in the Social Sciences, Humanities, Law and Theology published by NESH: https://www.etikkom.no/globalassets/documents/english-publications/60127_fek_guidelines_nesh_digital_corr.pdf Various guidelines published by the NEM: https://www.etikkom.no/en/ethical-guidelines-for-research/medical-and-health-research/

Framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> The Research Ethics Act of 2017 imposes the responsibility of the research institutions to provide training in research ethics (§5). The RINO project, which was based on surveys conducted among researchers in different research institutions, reported that majority of scientist have received no training in the field of research ethics (36.8%) or less than a day (23.7%). FEK has an important task in providing educational resources. For instance the "Research Ethics Library" with articles and cases on RE+RI, or various OA-books on relevant topics. FEK also establish arenas for the exchange of experiences among teachers, such as the annual Research Ethics Forum with approximately 100 participants. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/norway/ https://www.etikkom.no/en/news/news-archive/news-2018/new-report-on-research-integrity-in-norway/ https://www.etikkom.no/en/library/#377 https://www.etikkom.no/Aktuelt/publikasjoner/
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> Investigations of alleged cases of research misconduct are done usually by institutions, but some cases are handled by the GRU. Any researcher or institution can notice the GRU about possible research misconduct. GRU is the appeal body for statements in which it is concluded that a researcher has not acted according to Good Research Practices. GRU can decide to conduct the investigation in some cases, usually more serious cases of research misconduct. Cases of research misconduct are usually published annually and anonymously by the Commission. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/norway/
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> NEM, NENT and NESH cooperate with GRU on the prevention of research misconduct, combining proactive teaching and advice on RE/RI with retroactive investigations of misconduct. NEM and REK organise a national conference for the members of committees for networking and addressing prominent issues. 	
Protection of whistleblowers	<ul style="list-style-type: none"> According to the Act relating to the working environment, working hours and employment protection an employee has a right to notify censurable conditions at the employer's undertaking. When supervisory authorities or other public authorities receive notification concerning censurable conditions, any person who performs work or services for the body receiving such notification shall be obliged to prevent other persons from gaining knowledge of employees' names or other information identifying employees. 	<ul style="list-style-type: none"> https://lovdata.no/dokument/NLE/lov/2005-06-17-62
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> Universities and research institutions have mandatory and independent ethics committees with appointed members and advisors. There is no formal education, but FEK organises seminars and meetings to advise and support the institutions. 	<ul style="list-style-type: none"> https://www.etikkom.no/en/

Framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> FEK has, in cooperation with the Committee for Academic Integrity at the University of Bergen and Integrity Committee at the Western Norway University of Applied Sciences, funded and conducted a national project named Research Integrity in Norway – RINO. The aim of the project was to map the scope of research misconduct, gain knowledge among researchers about RI and map factors that contribute to research misconduct. In 2014, the Ministry of Education and Research conducted a mapping of the ethics system used by universities and university colleges. The mapping showed differences in how institutions handle issues of research ethics as well as variations with regard to established rules and procedures for violations of research ethics. Ethical review, data protection and biomedical research in the Nordic countries – a legal perspective Nordforsk has also made a comparative report on RI in the Nordic countries. There is no targeted funding on RE/RI, but various Norwegian scholars participate in European RRI/RE/RI-projects (PRINTEGER etc). 	<ul style="list-style-type: none"> https://www.uib.no/en/rino/114227/about https://www.regjeringen.no/en/topics/research/innsiktsartikler/research-ethics/id2000710/ https://www.nordforsk.org/en/publications/publications_container/ethical-review-data-protection-and-biomedical-research-in-the-nordic-countries-2013-a-legal-perspective/view https://www.nordforsk.org/no/publikasjon/publications_container/research-integrity-in-the-nordic-countries-2013-national-systems-and-procedures
Annual meetings on research integrity	<ul style="list-style-type: none"> FEK organizes two main annual events: Annual Conference, often with an international orientation, for all members of the various national committees. Research Ethics Forum as an arena for education and exchange for both teachers and members of ethics committees. In addition, NEM and REK coorganise an annual national conference for all members of REK-committees as well as the coordination meetings twice a year between the chairs of the committees and respective secretariats. NEM, NENT and NESH meet 4-7 times a year. 	<ul style="list-style-type: none"> https://www.etikkom.no/en/ http://www.eurecnet.org/literature/information/norway.html
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> All medical and health research projects involving human subjects require the approval of Regional Committees for Medical and Health Research Ethics. The Norwegian Board of Health Supervision has supervisory responsibility for medical and health research. It can intervene if research projects or research biobanks are operated in a harmful manner. It can supervise research regardless of where the research is conducted. Norwegian Medicines Agency has a supervisory role for clinical trials of medicines. All animal experiments are subject to notification and approval before they can start. 	<ul style="list-style-type: none"> https://www.regjeringen.no/contentassets/751546e9c5a943b2ab7674f5e87baf90/consultation-paper---research-ethics-in-norway.pdf
Whether research and research data are open and accessible	<ul style="list-style-type: none"> The Norwegian government has set a goal to make all publicly funded Norwegian research articles openly available by 2024 and has established guidelines and measures for open science policy. Norway has a national current research information system CRISTIN. Most universities, university colleges, and research institutes are a part of Cristin. The Research Council of Norway has a central role in a coalition of research funders that have committed to implementing Plan S, known as cOAlition S. The coalition calls for a definitive shift towards new models of academic publishing. 	<ul style="list-style-type: none"> https://www.regjeringen.no/contentassets/ae7f1c4b97d34806b37dc767be1fce76/national-goals-and-guidelines-for-open-access-to-research-articles.pdf https://www.cristin.no/english/ https://www.regjeringen.no/no/aktuelt/--gi-innspill-til-plan-s/id2620472/file:///C:/Users/gr/Downloads/271118cOAlitionSGuidance%20(3).pdf

Framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>cOAlition S aims to accelerate the transition to a scholarly publishing system that is characterised by immediate, free online access to, and largely unrestricted use and re-use of scholarly publications.</p>	
<p>Member of EUREC (European Network of Research Ethics Committees)</p>	<ul style="list-style-type: none"> • Yes. • 7 regional ethics committees in charge of the ethics assessment in research in the entire health area. National Committee for Medical Research Ethics is an advisory body, as well as an appeal body for regional committees. 	<ul style="list-style-type: none"> • http://www.eurecnet.org/information/norway.html
<p>Member of ENRIO (European Network of Research Integrity Offices)</p>	<ul style="list-style-type: none"> • Yes. • National Research Ethics Committees (Etikkom) is ENRIO member since 2008. 	<ul style="list-style-type: none"> • http://www.enrio.eu/news-activities/members/norway/
<p>OUTCOMES</p>		
<p>Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises</p>	<ul style="list-style-type: none"> • The national funding system for research is partly based on performance-based incentives. This influences the research system as a whole. • The Norwegian Research Council conducts national evaluations of disciplines and research fields, emphasizing quality, relevance and impact. This creates an awareness of different modes of communication, participation and impact. • The Research Council's awards are 2 prestigious awards for researchers and innovators: the Award for Excellence in Communication of Science and the Innovation Award. Each award comprises a prize of NOK 500 000. • The Abel Prize is awarded for excellent scientific work in mathematics. The prize money is NOK 6 million. • The Kavli Prize is awarded every two years in the field of astrophysics, nanoscience and neuroscience. It is established as a partnership between the Kavli Foundation in the United States of America, the Norwegian Ministry of Education and Research, and the Norwegian Academy of Science and Letters. The prize money is 1 million dollar and laureates receive a gold medal and a diploma in addition to the prize money. • The Holberg Prize is awarded annually for outstanding contributions to research in the arts and humanities, social sciences, law or theology. 	<ul style="list-style-type: none"> • https://www.forskningsradet.no/no/Forskningsradets_prisar/1138785797272 • http://www.abelprize.no/ • http://kavliprize.org/about • https://www.holbergprize.no/en/holberg-prize
<p>Whether research integrity is a part of institutional quality assessment</p>	<ul style="list-style-type: none"> • No. 	

Framework element	Information collected (and date for most recent source of information)	Notes / Source
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> • According to the University and Higher Education Act, all universities and HE-institutions have a "third mission". In addition to teaching and research – communicating research to the public and society at large. • Research dissemination is an assessment criteria in several Norwegian Research Council's programs. The Norwegian Research Council promotes translation of research findings to society by awarding researchers with the Award for Excellence in Communication of Science. This award is assigned to researchers who demonstrated outstanding communication of their research results and they put the effort into promoting research and research knowledge to society. • The Norwegian Academy of Sciences and Letters organises 12 meetings, open for public, with topics covering the various academic fields. 	<ul style="list-style-type: none"> • http://english.dnva.no/c41973/seksjon/vi.html?tid=4198
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> • 4 out of 10 agree that research results are largely influenced by the researchers' own political attitudes and views. It is not just the scientists' political motives that are being called into question. Other actors must also live with failing confidence. For example, 70% believe that politicians only use the research results that support their own views, while about half believe the same is the case for journalists and media. • This is presented in a survey presented to the Research Council of Norway • However; this is questioned in another survey – where new figures do not show increased distrust of researchers and a growing belief in conspiracy theories among Norwegians. 	<ul style="list-style-type: none"> • https://www.forskningsradet.no/no/Nyheter/Flere_ma_ta_ansvar/1254029137944 • https://www.faktisk.no/faktasjekker/0xd/nye-tall-viser-okt-mistillit-til-forskere-og-voksende-tro-pa-konspirasjonsteorier-blant-nordmenn
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> • Often. Usually about cases of research misconduct. There were also some publications regarding RINO project. • In addition to national media, many universities have their own independent press covering research, i.e. Khrono, På høyden, Uniform and Universitetsavisa. • Another platform is Forskning.no, initiated by the Norwegian Research Council in 2002. 	<ul style="list-style-type: none"> • https://khrono.no/ • http://pahoyden.no/ • https://www.uniforum.uio.no/ • https://www.universitetsavisa.no/ • https://forskning.no/
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> • There are several incentives for collaboration of research and industry/business. Norwegian government promotes cooperation between national research and innovation and foreign companies, research institutions and scientists. • Moreover, the Research Council promotes cooperation between research and industry through various programmes and measures. • An Industrial PhD programme was launched for enhancing cooperation and mobility between research and industry, increase research activity in the industry, and equip newly-educated researchers with knowledge of relevance to their company. The company receives a grant of 50% of the rates for doctoral fellowship for a period of three years or 37.5% of the rate for a period of 4 years with 75% research activity." 24Centres for Research-Based Innovation (SFI) is established to enhance cooperation between research enterprises and research 	<ul style="list-style-type: none"> • https://www.forskningsradet.no/en/Project_Canvas/1254016974746 • https://www.forskningsradet.no/en/Courses_and_events/1254016974880 • https://www.forskningsradet.no/en/Funding/1254016975699 • https://www.forskningsradet.no/proqnett-naeringsphd/About_the_PhD_scheme/125395259283

Framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>groups. Norwegian Center of Expertise (NCE) program promotes cooperation between industry, research institutions and the public sector.</p> <ul style="list-style-type: none"> In 2002 a research and development tax incentive was introduced for all enterprises that are subject to taxation in Norway and which are working on research and development projects. It enables them to have a tax deduction for the project expenses. 	
<p>Efforts to increase the value of research to society and reduce wasteful research</p>	<ul style="list-style-type: none"> The national emphasis on science communication is important for the dissemination of research in society National Science Week is a national festival comprising several hundred events in more than 100 different locations in Norway. Most of these events are free of charge and open to one and all. National Science Week is arranged by the Research Council of Norway. Science communication research project by Research Council of Norway Private foundations like Kavli and Extra has a specific emphasis on the reduction of wasteful science. 	<ul style="list-style-type: none"> https://www.forskningsradet.no/en/Event/National Science Week 2017/1254029020523 https://www.forskningsradet.no/en/Funding/FORSKKOMM/1254026230462 https://kavlifondet.no/2017/10/kronikk-hvordan-unnqa-bortkastet-helseforskning/
<p>Are there any disincentives?</p>	<ul style="list-style-type: none"> It could be pointed out that the career system for young academics not only in Norway, but in Europe in general, could be a risk factor for taking "shortcuts" in research. When applying and being assessed for an academic position, there is a strong emphasis placed on the candidate's number of publications. Emphasising strongly on this, could be a risk factor/ disincentive for Good Research Practices. Temporary positions, is sometimes pointed out as disincentive for Good Research Practices. This because extensive use of temporary employment, can reduce the possibilities of training, supervision and mentoring competences in Good Research Practice. 	
<p>Resources for RE+RI training/implementation</p>	<ul style="list-style-type: none"> FEK has developed several guidelines for different fields: The Norwegian National Research Ethics Committee for medical and health research (NEM) The National Committee for Research Ethics in the Social Sciences and the Humanities (NESH) The Norwegian National Committee for Research Ethics in Science and Technology (NENT) Ethical Guidelines for Internet Research - (NESH) Ethical Guidelines for the Use of Animals in Research (NENT) Guidelines for research ethics on human remains (NESH/SKJ) 	<ul style="list-style-type: none"> https://www.etikkom.no/en/ethical-guidelines-for-research/medical-and-health-research/guidelines-drawn-up-by-the-norwegian-national-research-ethics-committee-for-medical-and-health-research-nem/ https://www.etikkom.no/en/ethical-guidelines-for-research/guidelines-for-research-ethics-in-the-social-sciences--humanities-law-and-theology/ https://www.etikkom.no/en/ethical-guidelines-for-research/guidelines-for-research-ethics-in-science-and-technology/ https://www.etikkom.no/en/ethical-guidelines-for-research/ethical-guidelines-for-internet-research/

Framework element	Information collected (and date for most recent source of information)	Notes / Source
		<ul style="list-style-type: none"> • https://www.etikkom.no/en/ethical-guidelines-for-research/ethical-guidelines-for-the-use-of-animals-in-research/ • https://www.etikkom.no/en/ethical-guidelines-for-research/guidelines-for-research--ethics-on-human-remains/

8.13 Spain

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 46,445,828 	<ul style="list-style-type: none"> http://www.ine.es/prodyser/pubweb/anuario17/anu17_02demog.pdf
GDP (World Bank)	<ul style="list-style-type: none"> US\$1.237 trillion (2016) 	<ul style="list-style-type: none"> https://data.worldbank.org/country/spain
GDP/Capita	<ul style="list-style-type: none"> US\$27,580 (2016) 	<ul style="list-style-type: none"> https://data.worldbank.org/country/spain
Number of researchers	<ul style="list-style-type: none"> 214,227 researchers (head count in all sectors) in 2015; 122,437 researchers in full time equivalent 	<ul style="list-style-type: none"> http://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsc00004&language=en
Number of research institutions	<ul style="list-style-type: none"> Public research organisations: 8 Research centres/institutes/units: 131 Universities: 76 	<ul style="list-style-type: none"> http://www.csic.es/centros-de-investigacion1
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> US\$18,113 million (2016) 	<ul style="list-style-type: none"> https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 1.19% GDP (2016) 	<ul style="list-style-type: none"> https://data.oecd.org/rd/gross-domestic-spending-on-r-d.htm
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Public administration and higher education: 48.5% Business: 44.3% IPSFL (Private non-profit institutions): 0.6% Foreign: 6.7% 	<ul style="list-style-type: none"> (http://www.idi.mineco.gob.es/stfls/MICINN/Investigacion/FICHEROS/Spanish_Strategy_Science_Technology.pdf)
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 7,275 participants receiving €2,643.69 million in H2020 	<ul style="list-style-type: none"> http://ec.europa.eu/research/horizon2020/pdf/country-profiles/es_country_profile_and_featured_projects.pdf#zoom=125&pagemode=none
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 244 ERC grantees receiving €309.57 million in H2020 	<ul style="list-style-type: none"> http://ec.europa.eu/research/horizon2020/pdf/country-profiles/es_country_profile_and_featured_projects.pdf#zoom=125&pagemode=none

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
		d_projects.pdf#zoom=125&pagemode=none
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> Spanish Strategy of Science, Technology and Innovation 	<ul style="list-style-type: none"> http://www.idi.mineco.gob.es/stfls/MICINN/Investigacion/FICHEROS/Spanish_Strategy_Science_Technology.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> Ethics Committee of the Spanish National Research Council (CSIC) The Spanish Research Ethics Committee (Comité de Ética de la Investigación (CEI)) The Spanish Bioethics Committee The National Commission on Assisted Human Reproduction The Commission for the Donation and Use of Human Cells and Tissues 	<ul style="list-style-type: none"> http://www.csic.es/web/quest/contacto4 http://www.isciii.es/ISCIII/es/contenido/s/fd-investigacion/fd-evaluacion/Comite-etica-Investigacion.shtml http://www.comitedebioetica.es/ http://www.cnrha.msssi.gob.es/ https://www.boe.es/diario_boe/txt.php?id=BOE-A-2010-18654
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> Act on Universities (La Ley Orgánica 6/2001 de Universidades) Law for Science, Technology and Innovation (Ley 14/2011, de 1 de junio, de la Ciencia, la Tecnología y la Innovación) The Law on Biomedical Research (Ley 14/2007, de 3 de julio, de Investigación biomédica) Royal Decree 2132/2004, which establishes the requirements and procedures of research projects with stem cells obtained from leftover pre-embryos Order SCO/393/2006, establishing the organization and operation of the National Bank of Cellular Lines Organic Law 15/1999 on the Protection of Personal Data Royal Decree 1527/2010, which regulates use of human cells and tissues and the registry of research projects Royal Decree 1716/2011, which establishes the basic requirements for authorization and operation of biobanks for biomedical research Royal Decree 53/2013, which establishes the basic rules applicable for the protection of animals used in experimentation and other scientific purposes, including teaching Law 6/2013, for the care of animals in their exploitation, transportation and experimentation 	<ul style="list-style-type: none"> https://www.boe.es/boe/dias/2007/04/13/pdfs/A16241-16260.pdf http://www.boe.es/buscar/doc.php?id=BOE-A-2011-9617 http://www.isciii.es/ISCIII/es/contenido/s/fd-investigacion/SpanishLawonBiomedicalResearchEnglish.pdf http://www.isciii.es/ISCIII/es/contenido/s/fd-investigacion/Terapia_RD_2132_2004.pdf http://www.isciii.es/ISCIII/es/contenido/s/fd-investigacion/SCO6637_06641.pdf https://www.boe.es/buscar/doc.php?id=BOE-A-1999-23750 https://www.boe.es/diario_boe/txt.php?id=BOE-A-2010-18654 http://www.boe.es/buscar/doc.php?id=BOE-A-2011-18919 https://www.boe.es/diario_boe/txt.php?id=BOE-A-2013-1337 https://www.boe.es/diario_boe/txt.php?id=BOE-A-2013-6271
Organizational structures for RE+RI	<p>National:</p> <ul style="list-style-type: none"> Aside from Ethics Committee of the Spanish National Research Council, there are a number of Spanish national associations for ethics assessment of research, centred mainly in bioethics and biomedical research. They include the National 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<p>Association of Research Ethics Committees (Asociación Nacional de Comités de Ética de la Investigación, ANCEI), the Network of Ethics Committees in Universities and Public Research Centres in Spain (Red de Comités de Ética de Universidades y Organismos Públicos de Investigación de España, RCE), and the Spanish Association of Bioethics and Medical Ethics (Asociación Española de Bioética y Ética Médica, AEBI), Asociación de Bioética Fundamental y Clínica (ABFyC), Sociedad internacional de Bioética (SIBI).</p> <p>Regional institutions:</p> <ul style="list-style-type: none"> All the autonomous communities have Research Ethics Committees (Comité ético de investigación, CEI) and Research Ethics Committees for drugs (Comités éticos de investigación con medicamento, CEIm) who perform the ethical assessment of research projects performed in the region. These committees have a special accreditation regulated by the Royal Decree 1090/2015 and performed by Regional Public Health Authority. <p>Private:</p> <ul style="list-style-type: none"> Spanish policies and initiatives to support ethics practices in the private industry mostly concern corporate social responsibility. Any industry can create an independent REC or ascribe to any existent REC but each REC must be authorized by the regional autonomies through an accreditation process strictly controlled by the health authorities. Large companies may have their own good practices codes, especially in the pharmaceutical sector. 	
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> Unknown. 	<ul style="list-style-type: none"> This role is usually taken by research ethics committees.
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> Not available. 	<ul style="list-style-type: none"> Usually all postdoctoral students have paid positions.
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> Ramón y Cajal success rate: 14% (2009) Juan de la Cierva success rate: 23% (2009) ICREA success rate: 10% (2009) Beatriu de Pinos success rate: 12.5% (2009) IKERBASQUE success rate: 7% (2009) IEF success rate: 25% (2009) StG success rate: 3 (12)% (2009) 	<ul style="list-style-type: none"> https://www.eui.eu/Documents/MWP/AcademicCareers/Workshop/Spain.pdf
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> Secretary of State for Research, Development and Innovation: €1.380.021,63 million Instituto de Salud Carlos III: €269,957,380 	<ul style="list-style-type: none"> http://www.sepq.pap.minhafp.gob.es/Pr esup/PGE2017Proyecto/MaestroDocumentos/PGE-ROM/doc/1/3/21/2/1/N 17 A R 31 12 7 1 1 1 T 1.PDF http://www.cosce.org/pdf/InformeCOSCEPGE2017Aprobados.pdf

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> Comite ´ de Etica. Consejo Superior de Investigaciones Cientificas (2010) Code of Good Scientific Practices The Code of Good Scientific Practices is based on the information collected by the European Science Foundation (2008) and ALLEA (2010) as well as on similar regulations existing in countries such as Germany or Finland. An annex of The Code contains a list of the main legislation existing in Spain related to scientific activity National Statement on Scientific Integrity (2015) The National Statement establishes ethical principles and professional responsibilities relating to research activity. Each institution or entity that subscribes to this Statement is responsible for its development and implementation, for facilitating and promoting awareness of ethical matters in general, and for ensuring that research activities are carried out in a responsible manner based on good scientific practice in particular 	<ul style="list-style-type: none"> http://documenta.wi.csic.es/alfresco/downloadpublic/direct/workspace/SpacesStore/864dff28-01a5-490b-bcaf-b1cdf90b21ce/C%25c3%2593DIGO%2520DE%2520BUENAS%2520PR%25c3%2581CTICAS%2520COMPLETO.pdf http://www.enrio.eu/wp-content/uploads/2017/03/csic-national-statement-on-scientific-integrity.pdf
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> No training required. There is no mandate for RI training but the most important universities and institutions integrated a module about research integrity in their existing program about research ethics (Universidad Autónoma de Madrid, Universidad de Barcelona, Universidad de Oviedo, UNED). Several members of the CSIC Ethics Committee give lectures regarding research integrity and responsible conduct of research. Research Ethics and Research Integrity have been included as topics in the CSIC Management Training Course aimed to CSIC's Directors and Managers. 	
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> Ethics Committee of the Spanish National Research Council (CSIC): The CSIC Ethics Committee is responsible for dealing with ethical conflicts. Any individual or institution can bring a case to the attention of the Committee, whose field of competence is limited to CSIC and its employees. The Research Ethics Committees: The Research Ethics Committees (Comités de Ética en Investigación, CEI) and ad hoc commissions are in charge of settling scientific integrity problems. These committees are independent and their decisions can be binding, although there is a right of appeal. The official list of proven misconduct regulated by authorities is not publicly available at the moment. Professional Organization: Deontological commissions related to the professional organizations act independently to sanction the professionals involved in research misconducting. Justice System: If misconduct affects human beings, Justice system (Fiscalia General del Estado) starts a process of investigation. 	
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> Low. 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	<ul style="list-style-type: none"> According to the National Statement of Scientific Integrity, the cooperation of researchers within research groups and collaboration with other entities are required but in actual fact, several RI institutions and generally RECs are controlling all the domains of research. 	
Protection of whistle-blowers	<ul style="list-style-type: none"> Not addressed in regulations related to RI. There is no specific law on whistle-blower protection for employees in Spain so citizens must personally come forward in order for their claim to be investigated. The only legislative regulation loosely related to whistleblowing is a provision allowing citizens to anonymously report conflicts of interest of high-ranking officials and members of Parliament and a whistle-blower e-mail hotline that allows anonymous reporting of anticompetitive behaviour. There are also some services available for whistle-blowers provided by Ministry of Work or Ministry of Finance depending on the misconducts. 	
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> Not defined. 	<ul style="list-style-type: none"> No such position designated.
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> No. There is no official research into research integrity. The level of discussions is only related to Declaration and Guideline. 	
Annual meetings on research integrity	<ul style="list-style-type: none"> Yes. The Network of Ethics Committees in Universities and Public Research Centres in Spain hold regular meetings since 2002. 	
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> Yes, but only for research involving animals or human beings and human materials or data. According to the law, any biomedical research involving animals or human beings and human materials or data has to be subjected to the evaluation of an ethics committee (CEIm) which opinion is binding. In clinical drug trials, it is necessary to include the authorisation of the Spanish Agency for Medicines and Health Products (AGEMED), Ministry of Health, Social Services and Equality. This function is delegated to the regional authorities even when competences in a matter of pharmaceutical products are related to the Ministry of Health. 	
Whether research and research data are open and accessible	<ul style="list-style-type: none"> Partially. Law on Science, Technology and Innovation includes an open access mandate for publicly funded research, and the Ministry of Education has established a mandate to deposit theses and to make them publicly available in the institutional repositories. Many funding agencies and institutions currently 	

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
	involved in research have policies guaranteeing open access to publicly-funded scientific publications.	
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> • Yes. • The Clinical Research Ethics Committees (Comités de Ética en Investigación Clínica, CEIC) are the oversight bodies of methodological adequacy, ethical goodness and regulatory compliance regarding research on human subjects. Currently, in Spain there are over 140 accredited CEIC, with many different scopes, and also highly variable levels of activity. 	
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> • Yes. • Ethics Committee of the Spanish National Research Council (CSIC) is member from 2011 	<ul style="list-style-type: none"> • http://www.enrio.eu/news-activities/members/spain/
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> • None. 	
Whether research integrity is a part of institutional quality assessment	<ul style="list-style-type: none"> • Not clear. 	<ul style="list-style-type: none"> • Not much information on individual institutions' websites.
Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> • Not clear. • In a Knowledge Transfer study 2010-2012, Spain positioning is about average (56%). Spain is part of countries with a low level of innovation and weak KT policies. • There is an OTRI (Oficina para la transferencia de los resultados de la investigación) in each university. The OTRI can be defined as the knowledge transfer units of Spanish universities and public research bodies, whose mission is to support and promote the production of knowledge and its transfer to companies and other socioeconomic agents but their functions are fundamentally reduced to the project management activities. 	<ul style="list-style-type: none"> • https://ec.europa.eu/research/innovation-union/pdf/knowledge_transfer_2010-2012_report.pdf

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
Public perception of research integrity in their country, and their trust in science	<ul style="list-style-type: none"> • Low perception – system is perceived as corrupted. • Academic corruption survey of 5,725 people who studied in 11 European countries shows the highest levels of perceived corruption in Ukraine and Spain • Since 2002, the percentage of the population understanding science and technology as bringing more benefits than harms keeps growing every year. 	<ul style="list-style-type: none"> • http://milata-kg.de/wp-content/uploads/2015/11/2016-10-17.PressRelease-EN.pdf • https://cdn2.euraxess.org/sites/default/files/recruitmentopportunities_vf4.pdf
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> • Occasionally. The most relevant newspapers at the national level (EL Pais and El Mundo) published several articles about cases of scientific misconduct in Spain. 	
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> • Yes. • The Research Ethics Committees of the Universities gather around a network called "Network of Ethics Committees in Universities and Public Research Centres in Spain". • At the moment, Spain collaborates in a number of international infrastructures: the European Laboratory for Particle Physics (CERN), the European Synchrotron Radiation Facility (ESRF), the European Organization for Astronomical Research in the Southern Hemisphere (ESO), the Partnership for Advanced Computing in Europe (PRACE), the European Molecular Biology Organization, Laboratory and Conference (EMBO-EMBL-EMBC), etc. 	<ul style="list-style-type: none"> • http://www.eurecnet.org/information/spain.html
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> • Not known. 	
Are there any disincentives?	<ul style="list-style-type: none"> • Corruption in academia. 	<ul style="list-style-type: none"> • Perception of academic corruption is relatively high.
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> • CSIC Manual of conflicts of interest (2015) • Código Europeo de Conducta para la Integridad en la Investigación (2018) 	<ul style="list-style-type: none"> • https://www.cnb.csic.es/documents/ConflictosInteresCSIC.pdf • http://www.allea.org/wp-content/uploads/2018/01/SP_ALLEA_Codigo_Europeo_de_Conducta_para_la_Integridad_en_la_Investigacion.pdf

8.14 Sweden

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
STRUCTURES		
Total population of the country	<ul style="list-style-type: none"> 10,196,177 	<ul style="list-style-type: none"> http://www.scb.se/en/finding-statistics/statistics-by-subject-area/population/population-composition/population-statistics/
GDP (World Bank)	<ul style="list-style-type: none"> US\$538.04 billion (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=SE&view=chart
GDP/Capita	<ul style="list-style-type: none"> US\$53,442.01 (2017) 	<ul style="list-style-type: none"> https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=SE&view=chart
Number of researchers	<ul style="list-style-type: none"> 108,761 researchers (head count in all sectors) in 2015; 70,372 researchers in full time equivalent (2016) 	<ul style="list-style-type: none"> https://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=tsc00004&language=en
Number of research institutions	<ul style="list-style-type: none"> Higher education: 17 universities, 30 university colleges 	
Gross expenditures on research and development (as a part of GDP)	<ul style="list-style-type: none"> €15.141 million (2016) 	<ul style="list-style-type: none"> https://rio.jrc.ec.europa.eu/en/country-analysis/Sweden/key-indicators/25560
Amount of spending on research (as a fraction of GDP)	<ul style="list-style-type: none"> 3.25% GDP(2016) 	<ul style="list-style-type: none"> https://rio.jrc.ec.europa.eu/en/country-analysis/Sweden/key-indicators/25560
Distribution (%) of private, public and charity funding	<ul style="list-style-type: none"> Business enterprise sector: 70.6% Higher education sector: 25.7% Government sector: 3.7% 	<ul style="list-style-type: none"> http://www.scb.se/en/finding-statistics/statistics-by-subject-area/education-and-research/research/research-and-development-in-sweden/pong/statistical-news/preliminary-figures-on-rd-in-sweden-2017/
Participation in Horizon 2020 projects	<ul style="list-style-type: none"> 1.897 funded projects, 2.873 project participations, receiving €1,257.25 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/e8a41234-20b4-4e7e-80ef-335dd9e6ae36/sheet/941d3afe-da24-4c2e-99eb-b7fcbd8529ee/state/analysis
Number of ERC Principal Investigators	<ul style="list-style-type: none"> 160 signed ERC grants receiving €248.47 million in H2020 	<ul style="list-style-type: none"> https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-

RI framework element	Information collected (and date for most recent source of information)	Notes / Source
		b83c4e21d33e/sheet/erUXRa/state/analysis
PROCESSES		
Whether a country has scientific strategy	<ul style="list-style-type: none"> The Swedish Innovation Strategy Sweden also has a Research Bill/Statement that proposed by the government every four years and in which strategy and plan for the next year is presented. Sweden also has a Strategy for Life Science. 	<ul style="list-style-type: none"> https://www.government.se/contentassets/cbc9485d5a344672963225858118273b/the-swedish-innovation-strategy https://www.regeringen.se/4aa638/contentassets/310daad3e38f4a2e964603e860e92442/181023_fardplan-life-science_eng_webb.pdf
National bodies for RE+RI	<ul style="list-style-type: none"> Ethics Review Agency Ethical Review Appeal Board Group on Research Misconduct at Ethical Review Appeal Board 	<ul style="list-style-type: none"> https://etikprovning.se/ https://www.epn.se/en/start/expert-group-for-misconduct-in-research-at-the-central-ethical-review-boardstar/
Laws with implications for RE+RI (any international influence)	<ul style="list-style-type: none"> The Act concerning the Ethical Review of Research Involving Humans Statute concerning the ethical vetting of research involving humans Statute containing instructions for regional ethical review boards Statute containing instructions for the Central Ethical Review Board From 1 January 2019, the new organisation of the Ethics review in Sweden changed and the Ethics Review Act has statements about the new structure The Personal Data Act The Principle of Public Access The Public Access to Information and Secrecy Act The Patient Data Act The Higher Education ordinance – defining obligations when it comes to fraud and misconduct 	<ul style="list-style-type: none"> https://www.epn.se/media/2348/the_ethical_review_act.pdf https://www.epn.se/media/1204/2003_615.pdf https://www.epn.se/media/1203/1069.pdf https://www.epn.se/media/1202/1068.pdf https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/laq-2003460-om-etikprovning-av-forskning-som_sfs-2003-460
Organizational structures for RE+RI	<ul style="list-style-type: none"> Each research institution in Sweden is responsible for handling cases of research misconduct and for the decision-making process in those cases. They can get a statement from the Expert Group at the new Ethical Review Appeal Board (previously CEPN). The Ethical Review Appeal Board is a decision-making body in the cases of controversial issues and it serves as an appeal body for the decisions brought by regional committees. Moreover, it is responsible for supervising the adherence to the research ethics law when it is not done by medical project agency or Swedish Board of Health and Welfare. From 1 January 2020, there will be a new organisation for research misconduct cases. The decision making will be moved from the research institutions to a central agency that will deal with all cases. This will be accompanied by a new law/act for research misconduct. The Swedish Ethical Review Act regulates the two cases in which ethical approval for research is obligated. Otherwise, it is up to the researcher or the institutions 	

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	<p>whether they want to seek ethical approval for their research. Moreover, in these cases, the decisions of ethics committees are not legally binding. Six largest universities in Sweden have regional research ethics boards. They are now called nodes and are part of the new Ethics Review Agency. The secretariats of the regional boards are situated at the Universities of Gothenburg, Linköping, Lund, Umeå and Uppsala as well as at the Karolinska Institut in Stockholm. Instructions for Regional Ethics Committees are presented in the Statute.</p> <ul style="list-style-type: none"> The University of Stockholm has established an Ethics Council operating directly under the Vice-Chancellor. 	
Number of researchers and others involved in research integrity	<ul style="list-style-type: none"> Unknown. Expert Group on Research Misconduct has a chairman, 4 members and their substitutes. Six regional board have two or more sections, and each section has 10 members with scientific qualifications and 5 members for representing the general public. The Research Council Expert Group on Ethics has 7 members appointed by the Swedish Research Council. The Expert Group for Laboratory Animal Science has 12 members. 	<ul style="list-style-type: none"> https://www.onep.se/en/start/the-organisation/ https://www.onep.se/en/start/expert-group-for-misconduct-in-research-at-the-central-ethical-review-boardstar/ https://www.vr.se/english/en-sidfot/about-the-swedish-research-council/board/the-expert-group-for-laboratory-animal-science.html https://www.vr.se/english/en-sidfot/about-the-swedish-research-council/board/expert-group-on-ethics.html
Percentage of postdoctoral students who get paid positions	<ul style="list-style-type: none"> Unknown. 	<ul style="list-style-type: none"> Usually, postdoctoral students in Sweden have paid positions and the monthly salary is determined by the collective agreement.
Percentage of grant success for applications to national funders	<ul style="list-style-type: none"> App. 10-25% 	<ul style="list-style-type: none"> The success rate depends completely on the call and this number is therefore difficult to assess.
Budget of research funding agencies (bodies)	<ul style="list-style-type: none"> Swedish Research Council: SEK 6 billion The Swedish Research Council for Environment, Agricultural Sciences and Spatial Planning (Formas): SEK 1.12 billion Swedish Research Council for Health, Working Life and Welfare (Forte): SEK 512 million The Swedish Governmental Agency for Innovation Systems (VINNOVA): SEK 2.4 billion Swedish Foundation for Strategic Research (SSF), the Foundation for Strategic Environmental Research (MISTRA), the Knowledge Foundation (KK), the Foundation for Baltic and East European Studies, the Swedish Foundation for Health Care Sciences and Allergy Research (Vardal), the Swedish Foundation for International Cooperation in Research and Higher Education (STINT): SEK 1.1 billion Knut and Alice Wallenberg Foundation: SEK 1.4 billion The Swedish Cancer Society: SEK 392 million 	<ul style="list-style-type: none"> https://www.government.se/government-policy/education-and-research/research-funding-in-sweden/ https://www.vr.se/english

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National code of research conduct and how it is disseminated and enforced	<ul style="list-style-type: none"> • Good Research Practice published by the Swedish Research Council 	<ul style="list-style-type: none"> • https://www.vr.se/download/18.5639980c162791bbfe697882/1529480529472/Good-Research-Practice_VR_2017.pdf
Whether there is training and education in research integrity, whether it is mandatory and for whom, and by whom it is requested if so, and whether such training is evaluated and monitored	<ul style="list-style-type: none"> • Swedish Research Council is responsible for the education of the research ethics board members. Some universities have special bodies that are responsible for the training and education in the field of ethics (e.g. at the University of Stockholm this is done by Ethics Council). • Research integrity is a mandatory part of the curriculum for PhD students. However, this is not regulated on a national level but is handled and organised at each research institution. 	
How and by whom investigations of alleged misconduct and undesirable conduct are done, and whether outcomes of proven misconduct are publicly available	<ul style="list-style-type: none"> • Investigations of alleged cases of research misconduct are handled by the research institutions. Upon request, institutions are obligated to seek a statement from the Expert Group on Research Misconduct. Since those are only statements and not decisions, institutions don't have to obey and they can have a different opinion. 	<ul style="list-style-type: none"> • https://www.onep.se/en/start/expert-group-for-misconduct-in-research-at-the-central-ethical-review-boardstar/ • http://www.enrio.eu/news-activities/new-system-for-handling-allegations-in-sweden-soon/?highlight=sweden
Degree of cooperation between institutions in RE+RI	<ul style="list-style-type: none"> • Within the previous organisational structure, the chairman of the regional ethics committees would meet once or twice a year for the purposes of networking and education. Moreover, seminars and meetings are organised for all members of ethics committees. As a part of the new organisational structure, the cooperation between committees is strengthened and it is a natural part of the work of research committees. • In January 2020, a new organisation for research integrity and research misconduct (Research Misconduct Board) will be established which will also contribute to the cooperation between research ethics and research integrity bodies. 	<ul style="list-style-type: none"> • http://www.eurecnet.org/information/sweden.html
Protection of whistleblowers		
Designated research integrity officers in institutions, whether they are mandatory, and who educates them	<ul style="list-style-type: none"> • This role is usually taken by research ethics committees at the research institutions. For example. At Upsala University the received report goes to Vice-Chancellor who decides whether the report should go to the Board for further investigation. The new regulation changes the way cases of misconduct are investigated and the process will be handled on the national level. 	
Whether there is research into research integrity and how much funding is there for it and who funds	<ul style="list-style-type: none"> • In 2017 a report examining new ways of promoting good research practice and handling scientific misconduct was presented by Government. 	<ul style="list-style-type: none"> • https://www.regeringen.se/rattsliga-dokument/statens-offentliga-utredningar/2017/02/ny-ordning-for-att-framja-god-sed-och-hantera-oredlighet-i-forskning/

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Annual meetings on research integrity	<ul style="list-style-type: none"> So far The chairmen of all research ethics committees would meet once or twice a year to discuss juridical issues. Moreover, all RECs would meet at a two-day seminar for lectures and case discussions. Swedish Research Council organises once a year seminar for all REC members. RECs are also organising educational activities for their members. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/sweden.html
Whether registration of clinical trials and other research and of their result mandatory	<ul style="list-style-type: none"> Research on living or deceased persons, on biological material for humans, or research that involves sensitive personal data or data on breaches of the law must be approved by Ethical Review Agency. Moreover, clinical trials involving medicines and medical devices must be approved by the Medical products Agency too. 	<ul style="list-style-type: none"> https://www.kliniskastudier.se/english.html
Whether research and research data are open and accessible	<ul style="list-style-type: none"> In the Research Bill-Knowledge in Collaboration, the open access of research is promoted as a tool for maintaining and furthering excellence in research. In 2015 the Swedish Research Council developed a proposal for national guidelines for open access to scientific information. Moreover, all major universities have policies or strategies that serve as recommendations to publish their research results in open access. 	<ul style="list-style-type: none"> https://openaccess.blogg.kb.se/ https://www.openaire.eu/item/sweden
Member of EUREC (European Network of Research Ethics Committees)	<ul style="list-style-type: none"> Yes. 	<ul style="list-style-type: none"> http://www.eurecnet.org/information/sweden.html
Member of ENRIO (European Network of Research Integrity Offices)	<ul style="list-style-type: none"> Yes. Central Ethical Review Board (CEPN) is ENRIO member since 2009. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/members/sweden/
OUTCOMES		
Incentives for institutions or individuals or both based on research outputs, including research assessment frameworks and exercises	<ul style="list-style-type: none"> The Royal Swedish Academy of Sciences prizes Awards given by universities The Lennart Nilsson Award Women in Science Prize Sweden 	<ul style="list-style-type: none"> https://www.nobelprize.org/prizes/uncategorized/the-royal-swedish-academy-of-sciences/ https://science.qu.se/english/about/prizes https://ki.se/en/about/the-lennart-nilsson-award https://www.sverigesunqaakademi.se/en/733.html
Whether research integrity is a part of institutional quality assessment		

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Whether there is research impact assessment and translation of research findings to the community	<ul style="list-style-type: none"> The International Science Festival in Gothenburg is one of the most popular science festivals in Europe and the only one of its kind in Sweden. The aim of the Science Festival is to communicate science to schools and the general public and provide a meeting place for the research community. The goal is to provide more knowledge and positive attitude to science and research, as well as to encourage people to engage in higher education studies. SciFest at the University of Uppsala organised for teachers, students, researchers and representatives from companies. The festival is composed as a three-day educational experience with interactive demonstrations, various activities, and shows. It aims to bring closer science and the general public. 	<ul style="list-style-type: none"> http://vetenskapsfestivalen.se/in-english/ http://www.scifest.uu.se/?languageId=1
Public perception of research integrity in their country, and their trust in science		
Whether research integrity is discussed in the lay press	<ul style="list-style-type: none"> Occasionally. 	<ul style="list-style-type: none"> Relating to cases of misconduct.
Whether there are rewards for collaborative science and incentives for networks	<ul style="list-style-type: none"> Swedish Research Council offers a number of grants for collaborative projects. 	<ul style="list-style-type: none"> https://www.vr.se/english
Efforts to increase the value of research to society and reduce wasteful research.	<ul style="list-style-type: none"> The CODEX website was created with the aim to provide researchers and other interested parties with information about guidelines, ethics codes, and laws regarding ethical demands in the research process. It is designed mostly for those involved in the research but also for the general public so no previous knowledge regarding research ethics and research integrity is needed. 	<ul style="list-style-type: none"> http://www.codex.vr.se/en/omcodex.shtm ↓
Are there any disincentives?	<ul style="list-style-type: none"> NordForsk Expert Seminar from 2014 described several potential problems in the Swedish system. The system should be comprehensive, the conceptual framework needs to be clarified, the system of sanctions should be more precise etc. 	<ul style="list-style-type: none"> http://www.enrio.eu/news-activities/resources/research-integrity-in-the-nordic-countries-national-systems-and-procedures-by-nordforsk-2014/?highlight=sweden
Resources for RE+RI training/implementation	<ul style="list-style-type: none"> CODEX – Rules and Guidelines for Research Good Research Practice by the Swedish Research Council The European Code of Conduct for Research Integrity 	<ul style="list-style-type: none"> http://www.codex.vr.se/en/index.shtml https://www.vr.se/english/analysis-and-assignments/we-analyse-and-evaluate/all-publications/publications/2017-08-31-good-research-practice.html https://www.vr.se/download/18.ad27632166e0b1efab37a3/1547123720849/h2020-ethics_code-of-conduct_en.pdf

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This report provides lessons learned from the Mutual Learning Exercise (MLE) devoted to research integrity. The focus of this report is on the existing frameworks for research integrity in European countries. It provides a landscape and recommendations for research integrity in several areas: 1) definitions related to research integrity, especially in relation to research ethics, 2) structures for research integrity at different levels, 3) processes and practices for research integrity, 4) resources for research integrity, 5) research integrity in collaborative research and researchers' mobility, and 6) emerging issues in research integrity.

Studies and reports