Grounding RRI Actions to Achieve Institutional Change in European Research Funding and Performing Organisations

Grant Agreement n. 824521

STATE-OF-THE-ART REVIEW OF DOCUMENTED EXPERIENCES

Document 4 – Collection of experiences on research ethics and integrity

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Introduction

In the framework of the Grounding RRI Actions to Achieve Institutional Change in European Research Funding and Performing Organisations (GRACE) project, under WP3 (Governance and Mutual Learning), a specific task (T3.1) is focused on "the collection of experiences documenting RRI-documented institutional changes" and on "the elaboration of these experiences into a set of short guidance documents".

The overall aim of the Task is that of **assisting the GRACE partners** engaged in embedding RRI in their own institute to design and implement a set of RRI-oriented Grounding Actions (GAs), to integrate these GAs with each other (developing a unitary governance system for them), to ensure their sustainability and to use them as a platform for developing a Roadmap towards RRI going beyond the GRACE project lifespan (overall 8 years).

In order to pursue this objective, a state-of-the-art of documented experiences on RRI has been developed, the results of which are presented in **seven autonomous documents**, although connected to each other, i.e.:

- Document 1 - Collection of experiences on gender equality
- Document 2 - Collection of experiences on citizen engagement
- Document 3 - Collection of experiences in science education
- Document 4 - Collection of experiences on research ethics and integrity
- Document 5 - Collection of experiences on open access
- Document 6 - Approaches to RRI implementation
- Document 7 - Basic scheme for self-assessment

All the documents have been developed by Knowledge & Innovation (K&I), which is the leader of WP3. They are not formal deliverables and their circulation is restricted to the GRACE project consortium members.

This document

This is the 4th document of the series, devoted to the **experiences related to research ethics and integrity**. Its aim is helping GRACE partners reflect on possible GAs to develop in this area during the project implementation period or in the framework of the 8-year Roadmap towards RRI. The document includes **five sections**, respectively devoted to:

- Promoting research integrity
- Integrating ethics into all phases of the R&I process
- Facilitating structures for reflection
- Training
- Governance structures and policies for ethics and research integrity.

The document has been developed by Luciano d'Andrea and Giovanna Declich (K&I).

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Section One –
Promoting research integrity

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1. The issue

The ongoing transition in the way in which scientific knowledge is produced (see Document 6), disseminated and exploited while bringing new perspectives in the relationship of science with the rest of society, is also generating social and institutional stress and an increasing feeling of uncertainty, especially among researchers. Changes affecting science are leading to, for example, an increasingly uncertain access to public resources and support, a growing competition among researchers and research institutes, a fragmentation and even a distortion of science internal mechanisms of scientific production (e.g., data reproducibility, peer-reviewing, research quality assessment) and a increasing tendency of researchers to adopt safe and low-risk research strategies. In this situation, research integrity is, in general, more challenged than it was in the past.

Often researchers feel or actually are, left alone to cope with internal and external pressures that lead to scientific misconduct. As part of the general strategy of RRI, integrity issues are instead to be considered not only depending on the responsibility of the individual researcher but as part of a more general challenge to research ethics.

In the last decades, research organisations and research systems, also at an international level, are developing more robust mechanisms for promoting research integrity. This led to a better definition of both contents and methods. For example, the Singapore statement, representing the first international effort to encourage the development of unified policies, guidelines and codes of conduct, with the long-range goal of fostering greater integrity in research worldwide, set up 4 general principles and 14 subsequent responsibilities to define research integrity.[1]

In the context of RRI, it could be useful to mention the definition of research integrity proposed by the RRI Tools project.[2] In such a perspective, research integrity means that "research methods, activities and processes are (1) guided by standards, guidelines and protocols; (2) open to external scrutiny (for example, ethical bodies extended to societal stakeholders); and (3) open to internal reflexivity (nurtured by a culture of open deliberative integrity). Research integrity is thus essential to ensuring research quality and trust in science".

2. Examples of action

Two specific strategies pertaining to this area can be identified:

- Establishing codes of conduct
- Combating misconduct.

a. Establishing codes of conduct

The codes of conduct, even not being bodies of law, contain principles and criteria, reflecting universal scientific values and norms and are meant to determine integrity standards in the conduct of research.

Some actions in this field are proposed below.

[1] The Singapore Statement on Research Integrity was developed as part of the 2nd World Conference on Research Integrity, 21-24 July 2010, in Singapore. https://www.wcrif.org/documents/327-singapore-statement-a4size/file

[2] The section devoted to ethics and research integrity in the RRI web tool, one of the main sources of this chapter, is available at https://www.rri-tools.eu/how-to-pa-ethics#menu-anchor-id1-content

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- **Joining the wider international community of similar institutions** by signing or sharing existing codes and international initiatives (e.g., the biennial world conferences on research integrity).

- **Promoting national codes** aligned with national law collaborating with institutions of the country in which the organisation is based.

- **Drafting an institutional code of conduct for own research institution or university** and raising awareness on its existence.

- **Developing codes of conduct or good practice rules specific to sensitive topics** (e.g., animal research).

b. Combating misconduct

Preventing and contrasting serious violations such as fabrication, falsification and plagiarism, or other forms of malpractices, which can also mislead other researchers, is one main task to promote research integrity. Even if the reliability of a research work depends on the individual researchers who conduct it, there are tools to support them in detecting and solve potential misconducts. Three types of action can be mentioned here as examples.

- Spreading **knowledge** within the research organisation of the **legal frameworks** at the national and international level concerning misconduct.

- Creating **institutional strategies** to support integrity in practice, including forms of cooperation among all the units of the organisation potentially concerned, the inclusion of mandatory academic integrity statements for both students and researchers, or the simplification of all the investigative and reporting process. Usually, these institutional strategies imply the creation of specific units, bodies, or committees in charge of investigating cases of misconduct and the establishment of dedicated procedures to manage them.

- Promoting the use of **forensic tools** (for example, applications for analysing the manipulation of imagines) among the concerned employees.

3. To know more

Some resources devoted to open access to publications are listed below.

- Some international statements (The Singapore statement on research integrity, the Montreal Statement on Research Integrity in Cross-Boundary Research Collaborations and the Amsterdam Agenda), representing the foundation of the international initiatives on research integrity
  https://wcrif.org/guidance/singapore-statement
  https://www.wcrif.org/guidance/montreal-statement
  https://www.wcrif.org/guidance/amsterdam-agenda

- A webtool on research integrity devised by the Norwegian Research Ethics Committees
  https://www.etikkom.no/en/library/topics/integrity-and-collegiality/

- The New Netherlands Code of Conduct for Research Integrity (a helping hand that researchers and institutions can and will apply themselves)

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https://www.nwo.nl/en/news-and-events/news/2018/09/new-netherlands-code-of-conduct-for-research-integrity.html

- The Concordat to support Research Integrity, which helps to ensure that research produced by or in collaboration with the UK research community is underpinned by the highest standards of rigour and integrity
  https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Pages/research-concordat.aspx

- The forensic tools set up by the Office of research integrity of the US Department of health and human services (ORI) https://ori.hhs.gov/forensic-tools

- The list of misconduct cases managed by the ORI
  https://ori.hhs.gov/case_summary

- The scientific misconduct strategy of the European Research Council https://erc.europa.eu/sites/default/files/document/file/ERC_Scientific_misconduct_strategy.pdf

- The handbook of recommendations for the investigation of research misconduct issued by the ENERI project in collaboration with the European Network of Research Integrity Offices (ENRIO)
  http://eneri.eu/wp-content/uploads/2019/03/INV-Handbook_ENRIO_web_final.pdf

- The report of the SATORI project on the legal frameworks that guide or constrain research procedures in the EU countries
  http://satoriproject.eu/media/SATORI-Deliverable-3.1-.pdf

- The list of training resources on research integrity set up by the European Network of Research Integrity Offices (ENRIO)
  http://www.enrio.eu/resources/?cat=4

- The interactive games TheLab and TheResearchClinic from the ORI https://ori.hhs.gov/thelab
  https://ori.hhs.gov/the-research-clinic

- The Interactive movie on scientific integrity INTEGRITY FACTOR http://integrityfactor.nl/

- The website "Pathways to impact" of the research council of the UK, including general information and guidance as well as specific resources on how to consider social impacts all along the research process:
  https://www.ukri.org/innovation/excellence-with-impact/pathways-to-impact/

- The videos explaining the Socio-Technical Integration Research (STIR) of the Centre for Science, Policy and Outcomes (CSPO) of the University of Arizona, focusing on developing tools that can help improve the links between scientific research programs and the societal benefits of research
  https://www.youtube.com/watch?v=feOOT2iI16o&feature=youtu.be
  https://cspo.org/research/new-tools-for-science-policy-videos/

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Section Two –
Integrating ethics into all phases of the R&I process

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1. The issue

EC funded research is committed to applying fundamental ethical principles. Ethics is thus an integral part of research from beginning to end and ethical compliance is pivotal to achieve real research excellence.

Twelve Golden Rules to Ethical Research Conduct[3]

You must ensure that your research:

1. Respects the integrity and dignity of persons (that this intrinsic worth protects them from being used for greater perceived benefits)
2. Follows the "Do no harm" principle. Any risks must be clearly communicated to subjects involved
3. Recognises the rights of individuals to privacy, personal data protection and freedom of movement
4. Honours the requirement of informed consent and continuous dialogue with research subjects
5. Treats animals with respect and works under humane conditions before, during and after the research
6. Designs animal research in accordance with the 3 Rs: Replacement, Reduction, Refinement
7. Respects the principle of proportionality: not imposing more than is necessary on your subjects or going beyond stated objectives (mission creep)
8. Treats societal concerns seriously - a researcher's first obligation is to listen to the public and engage with them in constructive dialogue, transparently, honestly and with integrity
9. Tries to prevent being openly available for misuse or malignant dual use by terrorists or military organisations
10. Recognises the wholeness of an individual and that any modification (genetic or technological) does not interfere with this principle
11. Respects biodiversity and does not impose irreversible change that threatens the environment or ecological balance
12. Builds on the understanding that any benefits are for the good of society, and any widely shared expressions of concern about threats from your research must be considered (with the acceptance that perhaps certain research practices might have to be abandoned).

By inserting the ethics key in the general strategy of responsible research and innovation, the intention of the EU policy was to support the integration of the ethical dimension throughout the whole research and innovation process and its phases, i.e.: policy making and agenda setting, funding call formulation, project definition and proposal writing, and project execution and evaluation.

Integrating ethics throughout all phases of the process requires a continuous action of orientation, reflection and deliberation on the decisions, actions and values at stake, which implies an effort inside the individual research performing and financing organisation and coordination among different organisations and stakeholders, as well as integration with national and regional policies.

2. Examples of action

To foster integration of the ethical dimension in all the research and innovation phases, the following action lines can be identified (some of them pertaining to different types of research institutions):

[3] EC, Ethics for researchers. Facilitating Research Excellence in FP7, 2013
http://ec.europa.eu/research/participants/data/ref/fp7/89888/ethics-for-researchers_en.pdf

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- Promoting moral deliberation
- Inserting ethics in policy making and agenda setting
- Considering ethics in the formulation of funding calls
- Fostering ethical awareness in research project design
- Supporting ethical behaviour in project execution and evaluation.

a. Promoting moral deliberation

This action line is aimed at **creating the conditions for deliberative dynamics to happen all along the research and innovation process.** This means making it possible a constant reflective process on the values at stakes, aims and the ways to accomplish them, in dialogue with a wide range of stakeholders, with the intention to increase reflexivity, responsiveness and anticipation of the whole group. Two examples of action are provided below.

- Increase the **opportunities for activating a reflexive and participatory process** in order to consider the ethical implications of research and innovation projects, also adopting specific techniques, such as a **stage-gating methodology** (i.e., a technique to divide a project or initiative into stages or phases separated by decision points or "gates").

- Organising **deliberative sessions** adopting a protocol of ethical questions and decisions to be reiterated at each stage of the research process.

b. Inserting ethics in policy making and agenda setting

Considering that European science and technology is largely financed with public funds, this action line is aimed at **assuring an ethic purpose since the very beginning of the research and innovation activity**, i.e. guiding research to improve human lives and environment. The actions usually implemented to pursue this end inevitably imply the resort to participatory techniques for, e.g.:

- Favouring **co-creation processes** to identify concerns and priorities

- Establishing **stable forms of dialogue and partnership** Including a multiplicity of diverse stakeholders (e.g., public administrators, representatives of business and trade unions, citizens' organisations) to deal with emerging issues.

c. Considering ethics in the formulation of funding calls

Another segment of the research process where ethical considerations may play a major role is research funding. Already different research funding organisations introduced in their calls for research proposals criteria allowing to assess the societal and ethical soundness of the proposal. In other cases, ethical issues are at the core of specific funding schemes. In many cases, also research performing organisations include similar criteria for the allocation of internal funds. In an RRI strategic perspective, this means incorporating aspects such as gender equality, cultural diversity, research integrity, risk analysis and socio-ethical considerations.

To develop this strategy, it could be useful to leverage upon the existing experiences, such as adopting **existing tools** (e.g., the RRI funder requirements matrix, developed under the ProGReSS project) to include ethical and RRI-related issues in the funding calls or **learning from the experience** of other

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national or European funding agencies, also establishing forms of cooperation with them or with organisations of the same scientific areas in order to define common strategies for funding.

d. Fostering ethical awareness in research project design

Another important aspect is fostering an ethical awareness in researchers so as to encourage them to design their research projects taking into account their intended and unintended societal and ethical implications and impacts (on society at large, on the environment, on human and animal life, etc.). Methods and tools are available to support this activity. Some of them are listed below.

- Using **simulation models** to forecast the effects of the R&I outputs (e.g., techno-moral vignettes as the ones devised by the Rathenau Institute).

- Adopting **foresight techniques**, especially when the research project is expected to have large impacts or to raise ethically sensitive issues.

- Addressing the issues related to data protection, privacy and informed consent by **appointing a project data manager** and drafting a **data management plan**.

- **Detecting in advance any ethically sensitive research issues** (e.g., topics related to children and vulnerable people, issues related to risk and safety for researchers and research participants) and seek advice for properly dealing with them.

- Figuring out all the possible **uses, misuses and dual uses** (in military and civil contexts) of research procedures and outputs.

It is needless to say that research projects should follow the more advanced protocols, norms and procedures on issues like animal treatment, environmental protection, and the use of human biological material (stem cells, embryos, human remains, etc.).

e. Supporting ethical behaviour in project execution and evaluation.

Finally, ethical aspects should be duly considered also in the implementation phase of the research project so as to make it possible to timely intervene and to change components of the research project. Usually, each organisation has put in place permanent structures and procedures to ensure the ethical review of the research projects also when they are in the implementation phase. However, additional actions can be envisaged.

- Spreading the use of ethics **self-assessment tools** for researchers and research teams.

- Establishing ***ad hoc*** **ethical committees** for research projects deserving specific attention.

- Creating an **integrity audit committee** to regularly monitor the research activity.

- Setting up a **community advisory board** accompanying research in specific fields (e.g., treatment of illness; city/service planning) including different stakeholders and having the promotion of ethics and good practice as part of its mandate.

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3. To know more

Some sources addressing the ethical dimension in all the research phases are listed below.

- The STIR (Socio-technical integration research) programme website, including the description of the STIR method and some tools to customize it to one's own' research
  https://cns.asu.edu/research/stir
  https://cns.asu.edu/research/stir/howto

- The report of the SPICE project on the public deliberative workshops adopting the stage- gating method
  http://psych.cf.ac.uk/understandingrisk/docs/spice.pdf

- The paper "A framework for Responsible Innovation", proposing a set of decision components and related critical questions to build ethical capacities in the researchers/innovators teams
  http://www.synbicite.com/media/attachments/1119966361-3.pdf

- The Mind the Gap! Guide, drafted by the King Baudouin Foundation (BE), offering examples of multi-stakeholder dialogues for priority setting in health research
  https://www.kbs-frb.be/en/Virtual-Library/2016/20160426PP
  http://www.jla.nihr.ac.uk/jla-guidebook/

- The report of the Dutch national project "knowledge for climate", describing the co-creation method adopted to identify issues at stake for the research on climate change
  http://edepot.wur.nl/340780

- The Guidebook drafted by James Lind Alliance (UK), a step-by-step guide to the processes involved in a priority setting partnership
  http://www.jla.nihr.ac.uk/jla-guidebook/

- The "RRI Funder Requirements Matrix" developed in the ProGReSS project
  http://www.progressproject.eu/wp-content/uploads/2013/05/ProGReSS_-Deliverable-5_2-Final-16-Oct-14.pdf

- The funding conditions of the Wellcome for different research activities
  https://wellcome.ac.uk/funding/guidance/grant-conditions

- The funding principles of the EPSRC Engineering and Physical Science Research Council of the UK
  https://epsrc.ukri.org/funding/

- The Techno moral vignettes devised by the Rathenau Institute (NL)
  https://www.rathenau.nl/sites/default/files/inline-files/Future_scenarios_synthetic_biology.pdf

- The Platform for responsible innovation, devised by the NWO (NL) offering various examples and tools for research and technology design in a responsible way https://www.nwo-mvi.nl/

- A set of Guidelines on research ethics in different research fields developed by the Norwegian Research Ethics Committees
  https://www.etikkom.no/en/ethical-guidelines-for-research/

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- **A portal created by a network-oriented to values-driven, ethically aligned design for autonomous and intelligent systems**
  https://ethicsinaction.ieee.org/#

- The webpage of the Consortium of European Social Science Data Archives on the ethical review process, reporting a self-assessment procedure
  https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide/5.-Protect/Ethical-review-process

- The Self-assessment tool for the concordat to support research integrity, devised by the UK research integrity office
  https://ukrio.org/wp-content/uploads/UKRIO-Self-Assessment-Tool-for-The-Concordat-to-Support-Research-Integrity-May-2014-1.pdf

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Section Three –
Facilitating structures for reflection

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1. The issue

Also in connection with the development of approaches inspired to the idea of more responsible science, many initiatives have been promoted with the aim of creating "institutional spaces" for supporting reflexivity and appropriately dealing with the ethical issues involved with the research process.

Unlike other types of initiatives already presented in Section 1 and Section 2, these "institutional spaces" for reflection are not only aimed at orienting and controlling the conduct of researchers or at managing the ethical issues related to the research activities, but also at exploring the presence of ethical issues in new areas, in new research fields or in research situations not yet analysed in an ethical perspective.

These spaces are "dialogic" in nature, entailing an interaction among researchers, experts in ethical issues and often other actors and stakeholders. This dialogic nature of this process is due to a general break-down of consensus about moral, ethical and religious values or good. This makes it necessary to develop a constant conversation among the concerned actors about what is right and good and what is not, what is desirable and what is not.

2. Examples of action

Three main action lines pertaining to the development of facilitating structures for reflection can be identified:

- Incorporating spaces for reflection which develop throughout the research process
- Mainstreaming reflection on ethical issues within the research organisation.

a. Incorporating spaces for reflection which develop throughout the research process

In other cases, the attempt is that of fully embedding the spaces of reflection on ethical or societal issues in the research process.

Apart from the informal reflections which can occur at the level of the single research group or department or the general tools which can be adopted at the level of research organisation (see section b.), two main tools can be mentioned here, i.e., the inclusion of **technology assessment** (TA) exercises in the research process and the **midstream modulation**.

Technology assessment is one of the many approaches to forecasting**.** Forecasting techniques are largely used in the business environment and in many research domains with the aim of predicting the future development of phenomena, trends or more complex situations. There is a wide range of techniques, based on the construction of models allowing to forecast future data on the basis of historical series of data, on judgmental approaches, on the use of models based on the Artificial Intelligence approach, or on simulation techniques.

Technology assessment is one of them. It is focused on new technologies and its aim is forecasting the impacts of new technological products on society, thus also preventing negative ethical implications. There are different TA techniques, all based on forms of consultation of different actors in order to develop possible future scenarios. More recently, different attempts have been made to include

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technology assessment procedures in the design process of new technologies (constructive technology assessment).

In the case of **Midstream Modulation**, the focus is on researchers and not on research products. The core of this approach consists in the inclusion of external humanists, ethicists and social researchers in laboratory work with the aim of supporting scientists in reflecting about their work, choices, expectations and orientations. Midstream Modulation mainly applied in the USA and in the Netherlands so far, is based on the adoption of a protocol regulating the interactions between the research team and the group of external experts. In this way, external experts do not work together with the research team but are involved in some specific moments of the life of the research group on a regular basis.

The contribution provided by the external experts is mainly that of raising issues which usually researchers never ask themselves and, through the dialogue, envisaging alternative solutions. This allows the research team to discuss ethically relevant topics and normative issues as well as to get aware of how decisions are taken in the research process and which long-term consequences they may have.

b. Mainstreaming reflection on ethical issues within the research organisation

The first action line is that of creating institutional spaces allowing the transformation of ethical issues posed by individual researchers into issues for the research organisation as a whole.

This approach is usually implemented by creating one or more **ethical commissions** functioning as an advisory committee helping researchers identify and manage ethical issues in their own research. Usually, these commissions react to specific inputs coming from researchers, but they can also have their own agenda so as to recognise future objectives and questions to be dealt with at the research organisation level. Not rarely, these committees are established at the level of individual research departments.

This commissions can be also specialised on specific areas (on medical research, on social research, on animal research, on biosafety, on Artificial Intelligent and ICT) prevalently providing advice and orientation on a case-by-case approach.

In addition to providing a support to researchers, these commissions often perform other functions, such as ensuring a control over the research process so as to safeguard the dignity, rights, safety and well-being of research participants, promoting education and awareness-raising initiatives about ethical issues or playing a role in the conciliation of conflicts involving researchers and research participants.

3. To know more

Some sources addressing the development of facilitating structures for reflection are listed below.

- A document of the National Committees for the Research Ethics in Norway dealing with, in general, the issue of risks and uncertainties in the research process www.etikkom.no/globalassets/documents/publikasjoner-som-pdf/risk-and-uncertainty-2009.pdf

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- A research report on ethics assessment and guidance in different types of organisations produced under the EC-funded SATORI project
  http://satoriproject.eu/media/3.a-Research-ethics-committees.pdf

- An article on the midstream modulation approach
  https://cspo.org/legacy/library/1301291041F35042430WO_lib_Schuurbiers.pdf

- Two articles explaining the constructive technology assessment by the University of Twente (NL)
  https://www.researchgate.net/publication/225864123_Constructive_Technology_Assessment_and_Socio-Technical_Scenarios
  https://easst.net/article/constructive-technology-assessment-sts-for-and-with-technology-actors/

- The EC's Joint Research Centre FOR-LEARN online foresight guide, providing an explanation of the rationale and tools for the foresight exercise
  http://forlearn.jrc.ec.europa.eu/guide/0_home/index.htm

- The website of the University of Hasselt as an example of the organisation of ethical committees
  https://www.uhasselt.be/UH/Responsible-research-and-integrity/Scientific-integrity/Information-for-researchers-at-Hasselt-University.html

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Section four –
Training

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1. The issue

The development of training initiatives focused on research ethics and integrity is one of the main tools adopted for reinforcing research ethics and integrity in research institutions. Training activities usually address primarily undergraduate and PhD students, but often they are tailored on researchers, administrators, and members of ethics committees or leaders of research organisations.

The diffusion of training programmes can be observed in the last two decades in the large majority of universities and research organisations, also thanks to the progressive consolidation of national and international mechanisms and rules pertaining to researchers' conduct and the ethical review of research projects.

2. Examples of action

As for the **training formats**, they are extremely variable, including:

- Structured courses or comprehensive training programmes
- Case studies workshops
- Introductory modules
- Single training events
- Training conferences.

As for the university courses, the analysis of the **syllabus** can be particularly useful for grasping contents and approaches usually adopted.

It is also to consider that training initiatives can also leverage upon a wide offer of **online training** on research ethics and integrity. They include online training programmes, training courses, tutorials, and training initiatives focused on more specific issues. In many cases, also training materials are provided.

It is to also notice that different organisations developed comprehensive **manuals** and **textbooks** on research integrity and ethics, including the ENERI Project, the European Commission or the University of Copenhagen. All these materials can be used also for launching training programmes within research organisations.

3. To know more

Some sources concerning training in research integrity and ethics are given below.

- A list of online training options on research ethics and integrity developed under the EC-funded project ENERI
  http://eneri.eu/online-available-training-options-for-recs-and-rios/

- The website of CITI programme including training modules on research ethics
  https://about.citiprogram.org/en/homepage/

- The ENERI Manual on research integrity and ethics
  http://eneri.eu/wp-content/uploads/2018/10/ENERI-e-Manual.pdf

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- The European textbook and syllabus on research ethics developed by the European Commission
  https://ec.europa.eu/research/science-society/document_library/pdf_06/textbook-on-ethics-report_en.pdf
  https://ec.europa.eu/research/swafs/pdf/pub_governance/syllabus-on-ethics_en.pdf

- The textbook on responsible conduct of researchers developed by the University of Copenhagen
  https://ifro.ku.dk/rcr.pdf/

- The website of the Illinois Institute of Technology Center for the Study of Ethics in the professions, in which many examples of training formats are provided
  http://ethics.iit.edu/teaching/ethics-across-curriculum

- A set of syllabuses pertaining to courses on research ethics and integrity in different universities, i.e.
  - The Massachusetts Institute of Technology
    https://ocw.mit.edu/courses/engineering-systems-division/esd-932-engineering-ethics-spring-2006/syllabus/
  - The NOVA University of Lisbon
    https://www.unl.pt/sites/default/files/research_ethics_course_syllabus_en.pdf
  - The University of Oslo
    https://www.uio.no/studier/emner/medisin/inthealth/INTHE4008/index.html
  - Drexel University
    file:///C:/Users/lucia/Downloads/rcr-syllabus-winter2018.pdf
  - The Royal Institute of Technology of Stockholm
    https://www.kth.se/student/kurser/kurs/AK2017?l=en
  - The University of Padoa
    http://www.cfnns.it/courses/

- The website of Ethicsweb project providing training modules and information about ethics in research
  http://www.ethicsweb.eu/node/213

- The page of the website of the Norwegian National Research Ethics Committee devoted to the development of courses on research ethics and integrity
  https://www.etikkom.no/en/library/resources/quick-guide-to-course-design/

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Section Five –
Governance structures and policies for research ethics and integrity

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1. The issue

In many countries, there has been a strong development of permanent structures and aimed at institutionally embedding research ethics and integrity in research organisations as well as at regional and national levels.

In the great majority of cases, Research Ethics Committees have been established in charge of taking measures against cases of misconduct and establishing procedures and criteria to protect research integrity.

In some cases, this happens on the basis of national policies, but, more in general, this trend reflects a long-term cultural change process affecting research organisations and research systems.

However, notwithstanding these general positive trends, many constraints can be observed including: the lack of governance structures in many research organisations, the narrow scope of ethics assessments when focused only on compliance and not on ethical reflection, the lack of clear procedures and clear legal competences of Research Ethics Committees, the lack of a ethical culture among researchers or the shortage of resources.

Therefore, a reflection on the governance structures and policies on research ethics and integrity in a given research organization can only begin with an assessment of the situation allowing to identify problems to face and objectives to pursue.

2. Examples of action

Observing research organisations which developed advanced governance structures and policies in the field of research ethics and integrity, the following issues should be taken into consideration, most of them already mentioned in previous sections.

- The establishment of an **internal integrity policy** adopting a set of guidelines on scientific integrity, protection of research results, or confidentiality of certain information.

- The adoption of an **ethical code** on research integrity.

- The establishment of a **Commission on research integrity**, with a competence including the examination of reports on problematic behaviours, the indication of the necessary measures to take in case of misconducts, the indication of the possible adjustment procedures to implement, and the analysis of questions related to scientific integrity.

- The creation of one or more specific **ethic commissions or committees** analysing ethical issues in research, such as in medical research or in social research, as well as pertaining to specific aspects such as the use of animals in research, the safety in the labs, the use of personal information or the use of research data.

- The developing of reports or other instruments allowing to implement a **regular assessment** of the functioning of the governance structures for research ethics and integrity.

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- The creation of **permanent training initiatives** (see the previous section) ensuring that all the concerned actors are skilled for managing ethical issues.

3. To know more

In this section, a set of general sources will be included pertaining to research ethics and integrity.

- The European Code of Conduct for Research Integrity produced by ALLEA
  http://www.allea.org/wp-content/uploads/2017/03/ALLEA-European-Code-of-Conduct-for-Research-Integrity-2017-1.pdf

- The EC Guide "Ethics for researchers", summarising the history, the legal bases and the main rules to follow in EC funded research
  http://ec.europa.eu/research/participants/data/ref/fp7/89888/ethics-for-researchers_en.pdf

- The Research Ethics Library**,** an online resource on research ethics developed by the Norwegian Research Ethics Committees
  https://www.etikkom.no/en/library/

- The ethics platform of Lyon University providing information on the approach to research ethics and integrity developed there
  https://www.universite-lyon.fr/culture-science-and-society/ethics-platform/

- The policies on research ethics and integrity adopted at the University of Amsterdam Institute of social science research
  https://aissr.uva.nl/research/ethics-and-integrity/ethics-and-integrity.html?1558347189634#anker-ethical-review-of-research

- A policy brief developed under the SATORI project on the improvement of the organisation of research ethics committees
  http://satoriproject.eu/media/SATORI-policy-brief-_January-2017-C2-1-_FINAL.pdf

- The report developed under the ETICA projects on the current ethical governance approaches
  file:///C:/Users/lucia/Downloads/D.4.1%20Governance%20Approaches,%20final.pdf

- A paper by Armin Grundwald connecting Technology Assessment, RRI, and ethical issues
  https://run.unl.pt/bitstream/10362/7944/1/Grunwald9-31.pdf

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