Responsible Research and Innovation (RRI)

Guidelines for UNIMI applicants

Definitions:
Responsible Research and Innovation (RRI) means that societal actors work together during the whole research and innovation process in order to better align both the process and its outcomes, with the values, needs and expectations of European society. RRI is an ambitious challenge for the creation of a Research and Innovation policy driven by the needs of society and engaging all societal actors via inclusive participatory approaches. (European Commission 2012)

RRI is a transparent, interactive process by which societal actors and innovators become mutually responsive to each other with a view on the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (Von Schomberg, 2011).

Social justice can be define as "an ideal condition in which all individual citizes have equal rights, equality of opportunity, and equal access to social resources" (Maschi and Youdin, 2012)

The benefits of Responsible Research and Innovation go beyond alignment with society:
- it ensures that research and innovation deliver on the promise of smart, inclusive and sustainable solutions to our societal challenges;
- it engages new perspectives, new innovators and new talent from across our diverse European society, allowing to identify solutions which would otherwise go unnoticed;
- it builds trust between citizens, and public and private institutions in supporting research and innovation;
- it reassures society about embracing innovative products and services;
- it assesses the risks and the way these risks should be managed.

How to choose indicators:
- include indicators for all 8 criteria for RRI;
- have a balance between performance (outcome, process) and perception indicators;
- be meaningful and informative to various Research and Innovation (R&I) actors and conducive to good processes that promote and develop RRI as a policy principle, helpful in collaborative models of governance, developing trust, best practices and mutual institutional change.

Source:
"Indicators for promoting and monitoring responsible Research and Innovation" Report from the expert group on policy indicators for Responsible Research and Innovation. EC June 2015

8 tematic elements defined by the European Commission and by the Rome Declaration on RRI:

Element	Aim	Possible activities	(Impact) Indicators of:
Public Engagement (PE)	Engagement of all societal actors - researchers, industry, policymakers and civil society…who would not normally interact with each other on matter of science and technology is a societal commitment to provide encouragement, opportunities and competences in order to empower citizens to participate in debates around R&I, with potential feedback and feed-forward for the scientific process.	3 dimensions: PE1:policies, regulation and frameworks	R&I processes: formal commitment in RRI activities Perception: researchers' openness to pursue PE Interest of publics
		PE2:event/initiative making and attention creation -communication activities targeted to the general public (schools, associations,…)	R&I processes: number of science events and cycles (organized debates, informal settings in museums or science centres, citizen science initiatives, crowdfunded science and technology development) R&I outcomes: media coverage (social media, web 2.0 attention), museum visits and impacts (on visitors, stakeholders, local communities), civil society organization activities Perception: survey on individual reports about taking part in the single event (by using a ladder of participation, including noticing an issue in the media, talking about it with family and friends, sympathizing with civil society organizations dealing with the issue, being a member of the organization, participating to events))
		PE3:competence building	R&I processes: training of communicators (training of scientists and science mediators, …) R&I outcomes: recruitment of PR staff in the project, social scientists collaborations, interactions with science journalists

Element	Aim	Possible activities	(Impact) Indicators of:
Gender Equality (GE)	GE1:promoting the equal participation of men and women in research activities	-involve women in activities traditionally devoted to men, and vice-versa -risk assessment considering also maternity/paternity leaves -cite the institutional policy that includes actions to minimize/reduce barriers in work environment that disadvantage one sex (e.g. flexibility of working hours) -document institutional actions aiming to change aspects of their organizational culture that reinforce gender bias	R&I processes: number of institutional activities R&I outcomes: % of women in advisory committees, expert groups, work packages, as first author in papers
	GE2: the inclusion and integration of gender perspectives in R&I content	-include gender analysis or gender dimension in the research study -training activities on the inclusion of gender dimensions in the context of research	R&I processes and outcomes: number of planned analysis, training activities
Science Education (SE)	SE1: enhance education so that future researchers are equipped to become good RRI actors SE2: boost the interest in science among children and young people, with the purpose of either recruiting them to a research career or allowing them to become scientific citizens (recognizing and nurturing children and young people natural curiosity)	-communication and dissemination activities targeted to schools (open days, participation to festivals, prizes and competitions) -development of thematic games, videogames, apps	R&I processes and outcomes: n. including at least one participant from a science education organization (science museums, science centres, departments of science communication, schools, academies, science magazines, science blogs, living labs) n. of educational resources deliverables n. of involved STEM teachers or students n. of public dissemination events aimed at young people registration to Scientix community

Element	Aim	Possible activities	(Impact) Indicators of:
Open Access/ Open Science	From Open Access to Open Science	Level 0 open science: maintenance (including frequent updates) of project websites; deposition of papers (i.e. accepted draft) in publicly accessible repositories; inclusion of datasets with publications; publication in open access journals. Level 1 open science equals level 0 plus the following: project blogs, and respond to comments or feedback; post project movie clips to a project YouTube or other video channel, with links to project website and blog posts with explanation and commentary. Level 2 open science equals level 1 plus the following: routinely upload experimental datasets to project websites, with explanatory notes (i.e. the values in each field) and commentary; daily laboratory notebooks are written online and publicly accessible in real time; regular project dialogue, i.e. discussion between researchers, partners and collaborators through a project wiki, is publicly accessible; employ rich virtual environments for processes of social learning and innovation.	R&I processes and outcomes: Presence of such activities Perception: Extent to which members of the public have visited such environments and found them useful

Element	Aim	Possible activities	(Impact) Indicators of:
Ethics (ET)	Ensure increased societal relevance and acceptability of R&I outcomes. Ethics should not be perceived as a constraint to research and innovation, but rather as a way of ensuring high quality results.	3 subfields: ET1: research integrity and good research practice ET2: research ethics for the protection of the objects of research E.g.-involve ethics committee ET3: societal relevance and ethical acceptability of R&I outcomes E.g. -involvement of general public to assess the public opinion on the project (through questionnaire, blog in the project website, …)	R&I processes and outcomes: -ET1:open meetings or seminar series on ethics and research integrity -ET1:publication of research strategy papers addressing these issues -ET2: -presence of an ethics issues table -these issues are addressed in the text -ethics approval by IRB -presence of a WP for ethics -n. of publications addressing ethical issues ET3: -presence of mechanisms for multi-stakeholder and/or transdisciplinary process of appraisal of societal relevance and ethical acceptability (presence, frequency, best practices)
Governance (Design science with and for society)	Developing harmonious Governance models	-involvement of policy makers by: Networking Inviting them to project related events (workshops, public seminars, aperitivi della scienza, notte dei ricercatori, ….)	R&I processes: number of formal and informal networks of R&I (involvement of national and supranational governments, major stakeholders in science and society) R&I outcomes: Number of RRI debates, protocols, policies, agreements Perception: -involvement of the wider public in RRI debates, measured for example by social media. -involvement of the wider public in RRI policy, the development of policy, protocols

Element	Aim	Possible activities	(Impact) Indicators of:
Sustainability	Answer the question: To what extent does a research initiative contribute to sustainable growth? What are the effects on the socioecological metabolism of the EU and of the Earth?	-monitoring of stocks (renewable and non-renewable resources; -monitoring of flows (consumption and regeneration of stocks) -mapping and monitoring of stock-flow interactions; -mapping of fund elements (labour and technology) and how they influence the stock-flow interactions; -monitoring of ecosystem services and their effect on human well-being	-intermediate milestones -the ultimate effect on specified stock-flow interactions
Social justice/ Inclusion (SJ)	2 perspectives: -Good relationship between the researchers and the research subjects -Equal participation of social groups in benefits arising from research Six dimensions: SJ1: poverty prevention SJ2: access to education SJ3: labour market inclusion SJ4: social cohesion and non-discrimination SJ5:health justice SJ6:intergenerational justice		<u>Indicators of ethics</u> (researchers ahould not unfairly take advantage of research subjects and impose unfair burdens on them for their own benefit or the benefit of others) <u>Questions</u> -accessibility/availability of the new technology/product to wide variety of different social groups? -the research addresses an access problem of a disadvantaged social group (disabled people, illiterate people, migrants, elderly people, …)? -the research has the potential to impact negatively on some social groups? <u>Performance indicators:</u> -n. of institutional training activities to consider the impact on social justice -recruitment of research participants from socially excluded groups -contacts with policymaker bodies