



DELIVERABLE D.T2.2.3

FINAL RI ROAD MAP

PP01



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1 Regional Innovation Policy Context

Emilia Romagna is currently one of the fastest growing regions in Italy and in Europe.

The Regional Operational Programme 2014-2020 focused on boosting the connection between applied research from local universities and research centres and local enterprises, also paying attention to start-ups.

From the practical point of view, this has meant a transformation of the former thematic technology platforms - the places where discussion around technology trends and implementation opportunities were discussed - into public-private associations of entities from the research, education and the business worlds (the ClustER), jointly performing foresight and developing projects. Each association corresponds to a value chain and each value chain is connected to a priority of the ROP (agri-food, building and construction, mechatronics and automotive, green technologies, creative industries, health and wellness, high-tech services). ClustERs are part of the Emilia Romagna High Tech Network. The Network also includes University Technopoles with their interdepartmental research centres and advanced research infrastructure, public and private technology labs, technology-transfer innovation centres, fab-labs and higher education technology schools.

This wide and diverse network is a great opportunity for exchange, although the more fertile environment for a discourse on responsible innovation is represented by the ClustER, as there is where the market comes into the picture and acceptance by consumers becomes an actual concern. However, at the time of writing and to our knowledge, only one of the ClustER (all of them having been involved in assessing the current ROP policies, also in view to planning the next innovation policies) has specifically mentioned Responsible Innovation as a reference framework to manage innovation process (in particular to improve acceptance by the communities of innovative energy plants). Increasing interest towards Responsible Innovation has been registered by the regional government both informally (talking with high-level officers) and formally (in 2014 Region Emilia Romagna launched its "Responsible Innovators Award": although participants mainly present CSR good practices, the message is wider than that and contributes to raise awareness on responsible innovation).

Currently, RIS3 for 2021-2027 is being designed and there is evidence sustainable development, circular economy, social innovation will be top priorities and responsible innovation a framework to support enterprises provide pursue these objectives.

With reference to the sub-region Romagna, and specifically to the provinces of Forlì-Cesena and Rimini, that represent the geographical scope of the chosen policy instrument to be improved, the economy is moving at a slightly slower pace, with a large majority of companies not being high-tech, with a few exceptions in the agro-food and health and wellness sectors. Forlì-Cesena is the home of three university technology hubs (agro-food, ICT and aerospace – the latter of international relevance) and Rimini is the home to two university technology hubs (environment & energy and advanced mechanics & materials). The process of rooting these hubs in the local territories is still ongoing and



money has been invested in trying to improve their connection with local enterprises. Efforts to connect research and enterprises could be carried out under a meta-framework of responsible innovation, but no actual steps have been taken so far.

On a more local level, e.g. the provinces of Forlì-Cesena and Rimini, CISE had to chance to influence both the Triannual and Annual Plan (the 2016-2020 Multiannual Programme – Chamber 4.0 of the Chamber of Commerce of Romagna describes the strategic priorities for the Chamber of Commerce’s support to local development. Triannual Plans (revised yearly) break the strategic priorities of the Multiannual Programme 2016-2021 – Chamber 4.0 down into 3-years strategic objectives, while Annual Plans describe the operational objectives through which the strategic objectives are pursued). This resulted in:

- The inclusion in the Triannual Plan 2020-2022 of a strategic objective expressly related to disseminating Responsible Innovation (Type 3: change in the strategic focus of the policy instrument);
- The inclusion in the Annual Plans 2020, 2021 and 2022 of strategic objectives related to actions and the allocation of funds (funding allocated is not indicated in the Annual Plans, but needs to be traced in the Annual Budget) to disseminate, mainstream and/or deliver responsible innovation (Type 1: implementation of new projects).

2 Regional RI Maturity

2.1 RI Performance of Regional Policy Making

RI Component	Regional policy makers				
Indicator	Type of measurement	Metric	Data source	Description	
Category: Purpose					
Motivation for doing/supporting research/innovation	M1: Integration of innovation/S&T in policy planning and strategies	Qualitative	Inclusion of innovation/S&T components in the official policies of the organizations (e.g. strategic plans, policy documents, etc.)	Regional policy/planning documents – Partners’/Experts’ assessment	<p>Inclusion of innovation/S&T components in the official policies of the organizations: YES.</p> <p>The Regional Government of Emilia-Romagna adopted major legal and policy documents concerning research and innovation. Over the 2014-2020 period, it is of particular importance the Regional implementation of EU-wide development strategies in the two budget periods of 2007-2013 and 2014-2020, by adopting respectively the POR FESR 2007-2013 (Regional Operative Plan – European Fund of Regional Development) (https://fesr.regione.emilia-romagna.it/por-fesr/programmazione-precedente) and the 2014-2020 Smart Specialization Strategy (S3) of Emilia-Romagna (https://fesr.regione.emilia-romagna.it/s3), in the framework of the POR FESR 2014-2020 (https://fesr.regione.emilia-romagna.it/por-fesr/Por-fesr). As part of this activity, the Regional Government has promoted the creation of the Emilia-Romagna High Technology Network, involving industry, universities and research institutes, and creating/linking local innovation hubs to foster R&D and</p>

RI Component	Regional policy makers				
					<p>knowledge transfer in and towards economic actors (https://www.regione.emilia-romagna.it/en/research-and-innovation/emilia-romagna-high-technology-network).</p> <p>Moreover, the region has a long running legislative framework for research and innovation in industry, defined since 2002 by the Regional Law No. 7/2002 on the "Promotion of the industrial research, innovation and technology transfer regional system" (Promozione del sistema regionale delle attività di ricerca industriale, innovazione e trasferimento tecnologico).</p> <p>The subsequent analysis will refer primarily, but not exclusively, to these policy documents and the related programmes/activities.</p>
<p>Motivation for engaging with RI</p>	<p>M2: Integration of RI components in policy planning and strategies</p>	<p>Qualitative</p>	<p>Inclusion of RI components in the official policies of the organizations (e.g. strategic plans, policy documents, etc.)</p>	<p>Regional policy/planning documents – Partners’/Experts’ assessment</p>	<p>Inclusion of RI components in the official policies of the organizations: YES.</p> <p>There is no explicit reference to “responsible innovation” in the regional planning documents we have examined. However, we can find several which are relevant in terms of RRI:</p> <ul style="list-style-type: none"> • "the promotion of processes to improve environmental quality and social responsibility" (POR-FESR 2007, p. 70); • “the responsible use of natural resources” in the agricultural system (S3, p. 38); • the promotion of “equal opportunities and [the prevention of any] discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation during preparation, definition

RI Component	Regional policy makers
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and implementation of the program” (POR FESR 2007, p. 157; POR FESR 2014, p. 246).

Moreover, the theme of “responsibility” is featured prominently in the context of “Corporate Social Responsibility” (CSR). Since 2015, all the applicants to the call for proposals issued by the Regional Directorate of Knowledge economy, Work and Business, are required to sign the regional “Charter of Corporate Social Responsibility” (<https://imprese.regione.emilia-romagna.it/rsi/doc/carta-dei-principi-di-responsabilita-sociale-dimpresa>). The Charter states five principles:

- Transparency and Stakeholders involvement;
- Employee Welfare / Work-Life Conciliation;
- Customers and Consumers protection;
- Green management of products and processes;
- Relationship with the Local Community and the Territory.

The Charter is part of a broader push towards the implementation of UNSDGs. Since 2016, the Regional Government of E-R has orientated all the interventions on CSR, as defined by the Regional Law 14/2014 - Promozione degli investimenti in Emilia-Romagna (Investment promotion in Emilia-Romagna) (<http://demetra.regione.emilia-romagna.it/al/articolo?urn=er:assemblealegislativa:legge:2014;14>), to the UN 2030 Agenda and to the attainment of the UN Sustainable Development Goals (SDGs) (<http://imprese.regione.emilia-romagna.it/rsi/doc/azioni-per-l2019agenda-2030>).

RI Component	Regional policy makers				
	M3: Financial commitment on RI components	Quantitative	Budget allocation for RI components in the budget of regional policy makers: (a) presence of specific budget headings for RI or its components; (b) annual amount (% , or €); (b) evolution (increase, decrease, stable over the last 3 years – or other programming period where appropriate)	Budget documents – Partners’/Experts’ assessment	<p>Budget allocation for RI components in the budget of regional policy makers: YES.</p> <p>With the exception of the “Responsible Innovators” awards and dedicated funds (see below indicator E1 and cf. http://imprese.regione.emilia-romagna.it/rsi/doc/premio-innovatori), we were not able to identify specific budget lines on RI. However, it is important to notice that: (1) our analysis is primarily focused on the POR FESR 2007-2013 and 2014-2020. We cannot exclude that other sectoral policy frameworks include specific budget lines on RI; (2) several dimensions that are relevant to RI, such as gender equality or sustainability according to the UNSDGs, have either a dedicated budget line not directly related to research and innovation (see e.g. http://parita.regione.emilia-romagna.it/) or are cross-cutting issues in the POR-FESR strategies. Regarding sustainable development, the S3 Monitoring dashboard allows to identify the investment on “low carbon economy” and the “environmental sustainability” (http://www.regione.emilia-romagna.it/s3-monitoraggio/output.html).</p>
Ethics (justification of intended outcomes)	E1: Significance of UNDGs in policy planning and strategies	Qualitative	Reference to UNSDGs in regional policy documents (e.g. strategic plans, policy documents, etc.)	Regional policy/planning documents – Partners’/Experts’ assessment	<p>Reference to UNSDGs in regional policy documents: YES.</p> <p>Starting from 2015, the Regional Government has integrated the UN 2030 Agenda and the UN Sustainable Development Goals in the regional initiatives on Corporate Social Responsibility according to the Regional Law 14/2014 “Investment promotion in Emilia-Romagna” (https://imprese.regione.emilia-romagna.it/rsi/doc/azioni-per-l2019agenda-2030). For instance, the Regional Government established a contest for “Responsible Innovators” and the applicants have access to dedicated grants for realizing further actions contributing to the</p>

RI Component	Regional policy makers				
	<p>objectives and targets indicated by the UN 2030 Agenda (http://imprese.regione.emilia-romagna.it/rsi/doc/premio-innovatori).</p> <p>Moreover, the Emilia-Romagna Region supported the creation of nine local “laboratories”, to foster sustainable innovation and to assist companies in adopting strategies and business models consistent with the implementation of the UNSDGs (http://imprese.regione.emilia-romagna.it/rsi/doc/laboratori-provinciali-per-la-rsi).</p>				
Category: Process					
Anticipation	A1: Foresight and strategic planning activities (e.g. Scenario building, delphis, etc.) (adapted from Eastwood et al. 2017)	Quantitative/Qualitative	Number of foresight and strategic planning activities in the current and preceding governing period (e.g. regional legislature, depending on local regulation) [Presence/Absence of activities if the number is not available]	Regional policy/planning documents – Partners’/Experts’ assessment	<p>Presence of foresight and strategic planning activities in the current and preceding governing period: YES.</p> <p>A Technology foresight exercise was organized as a preliminary step of the S3 formulation (S3, p. 37).</p>
Public engagement	PE1: Public perceptions on public involvement in science and	Quantitative	% of respondents who stated that “the public should be consulted and public opinion should be	Special Eurobarometer 340 (national data), p. 87.	<p>% of respondents: 19%</p> <p>Only 19% of Italian citizens believe that “the public should be consulted and public opinion should be considered when making decisions about science and technology” (Ebs 340, p. 87). 41% believe the public should</p>

RI Component	Regional policy makers				
	technology (Tsanos and Apospori 2017)		considered when making decisions about science and technology”		only be informed of decisions taken by experts and 7% think the public should not be involved at all in decisions about S&T.
	PE2: Formalisation and extent of public involvement in regional science and technology decision-making (Tsanos and Apospori 2017)	Qualitative	Qualitative discussion and self-classification as: - Formalised / high involvement - Formalised / low involvement - Not formalised / high involvement - Not formalised / low involvement	Partners’/Experts’ assessment	<p>Formalised/High Involvement</p> <p>Emilia-Romagna has a sophisticated system of public participation in policy formulation. A recent regional law on the “Participation in the formulation of public policies” (Regional Law No. 15/2018 – Legge sulla partecipazione all’elaborazione delle politiche pubbliche) (https://partecipazione.regione.emilia-romagna.it/la-legge-e-il-bando/legge-regionale-partecipazione) replaced an older one (Regional Law No. 3/10 Norme per la definizione, riordino e promozione delle procedure di consultazione e partecipazione alla elaborazione delle politiche regionali e locali - Rules for the definition, regulation and promotion of consultation procedures and participation in the development of regional and local policies) (http://demetra.regione.emilia-romagna.it/al/articolo?urn=er:assemblealegislativa:legge:2010;3).</p> <p>The regional law mandates the regional government to actively support local participatory processes for the implementation of regional and national policies. These participatory projects can be proposed by individual municipalities or their local associations and they concern also technology-related issues under the stream “information society”. The Region has created an “Observatory on participation” to communicate and share participatory experiences (http://www.osservatoriopartecipazione.it/). Among these participatory initiatives, those who are closest to the scientific and technological</p>

RI Component	Regional policy makers				
					<p>domains are probably those referring to the participatory decision-making on the “local digital agendas”, as part of the implementation of the regional digital agenda (https://digitale.regione.emilia-romagna.it/ad-locali/agende-digitali-locali).</p> <p>On a regional level, the same law ensures stakeholder participation in regional planning and policy-making and broad participation was widely ensured in the preparation of the Smart Specialization Strategy 2014-2020 (POR FESR 2014-2020, p. 255-257). Similarly, a participatory review of the S3 strategy was implemented in 2017 and 2018, by organizing several thematic forums which involved the regional stakeholders of the research and innovation system (https://fesr.regione.emilia-romagna.it/s3/s3_aggiornamento_set2018.pdf, see p. 5).</p>
Responsiveness	RES1: Potential to adapt policies and strategies (adapted from Eastwood et al. 2017)	Qualitative	Existence of stakeholder/public feedback mechanisms in policy/strategy implementation	Regional policy and strategy documents/ Partners’/Experts’ assessment	<p>Existence of stakeholder/public feedback mechanisms in policy/strategy implementation: YES</p> <p>The formulation process of the Emilia-Romagna S3 included a wide consultation exercise as described under Indicator PE2. Similarly, the review of the S3 strategy has been implemented in a participatory way (https://fesr.regione.emilia-romagna.it/s3/s3_aggiornamento_set2018.pdf, see p. 5). While these stakeholder consultations are mainly concerned with policy priorities, the technical evaluation activities and progress monitoring of the ERDF Operational Programme and of the S3 are performed by an independent office within the regional administration (https://fesr.regione.emilia-romagna.it/por-fesr/valutazione).</p>

RI Component	Regional policy makers				
	RES2: Openness and transparency of the planning and policy process (adapted from Eastwood et al. 2017)	Qualitative	Existence of stakeholder/public communication mechanisms in policy/strategy implementation procedures	Regional policy and strategy documents/ Partners'/Experts' assessment	<p>Existence of stakeholder/public communication mechanisms in policy/strategy implementation procedures: YES.</p> <p>With regard to the policy frameworks we are analysing, the participatory review of the S3 strategy implemented in the years 2017-2018 is exemplary of the existence of stakeholder engagement in policy formulation and evaluation (https://fesr.regione.emilia-romagna.it/s3/s3_aggiornamento_set2018.pdf, see p. 5).</p> <p>In terms of communication, local stakeholder meetings are regularly organized to inform about policy implementation and funding opportunities. For the purposes of this analysis, it is more interesting to notice the creation of online dashboards as a tool for a transparent, comprehensive and timely communication about policy implementation and progress. The two dashboards we point at are: (1) the S3 monitoring dashboard; (2) the public participation law dashboard (http://www.osservatoriopartecipazione.it/statistiche/cruscotto-clausola-valutativa).</p> <p>The S3 dashboard (http://www.regione.emilia-romagna.it/s3-monitoraggio/) is particularly interesting for various reasons: (1) the dashboard provides a comprehensive monitoring across four clusters of indicators (implementation progress, impacts, consistency of the regional system specialization vis-a-vis the goals of the Strategy, progress in the transition of the regional system towards the goals set in the Strategy); (2) the dashboard integrates in single monitoring tool the full array of European, national, and regional policy and funding instruments which are managed by the Regional Government of Emilia-Romagna according to the priorities set in the S3 policy framework (http://www.regione.emilia-romagna.it/s3-monitoraggio/output.html).</p>

RI Component	Regional policy makers				
Reflection	REF1: Reflexive guidance in regional policy/strategy on RI (adapted from Eastwood et al. 2017)	Qualitative	Existence of offices, fora, committees, etc. for the monitoring and assessment of program/project implementation activities involving RI and its components	Regional policy and strategy documents/ Partners'/Experts' assessment	<p>Existence of offices, fora, committees, etc. for the monitoring and assessment of program/project implementation: YES</p> <p>The following instruments appear to be particularly significant in this matter:</p> <ul style="list-style-type: none"> • The Observatory on participation monitors the participatory projects funded through the regional law on the “Participation in the formulation of public policies” (Regional Law No. 15/2018), by providing a comprehensive dashboard for evaluating the project implemented (it is mandatory for the beneficiaries to grant the regional government and to the public full access to the data regarding the participatory projects) (http://www.osservatoriopartecipazione.it/statistiche/cruscotta-clausola-valutativa); • The managing organization of the E-R S3 implementation provides constant monitoring of the Strategy implementation. Three families of indicators are considered: (1) the level of implementation of the planned activities; (2) the change in production systems with respect to the objectives of the S3, as a consequence of the strategy implementation; (3) the degree of effectiveness of the strategy, ie the achievement of results consistent with the desired objectives of change (https://fesr.regione.emilia-romagna.it/s3/monitoraggio). A comprehensive, public online dashboard has been created to monitor the Strategy implementation (http://www.regione.emilia-romagna.it/s3-monitoraggio/).

RI Component	Regional policy makers				
					<ul style="list-style-type: none"> The POR FESR 2014-2020 and the related S3 includes a mechanism of progress monitoring and assessment, which is performed by an independent office within the regional administration (https://fesr.regione.emilia-romagna.it/por-fesr/valutazione).
	<p>REF2: Regional support/incentives for the use of standards and certifications related to RI (e.g. ISO, SA, UNI) (adapted from Eastwood et al. 2017)</p>	<p>Qualitative</p>	<p>Existence of regional programs/actions supporting /requiring the use of instruments such as codes of conduct and standards in R&I</p>	<p>Regional policy and strategy documents/ Partners'/Experts' assessment</p>	<p>Existence of regional programs/actions supporting /requiring the use of instruments such as codes of conduct and standards in R&I: YES</p> <p>The 2013-2015 Program for Productive Activities defined a set of measures to promote Corporate Social Responsibility. Among these actions, Measure 2.1 included an intervention supporting the development of global and integrated quality management through and the adoption of the SA8000 Standard and the EU Emas Regulation. The diffusion of EMAS/ ISO 14001 certification is one of the progress indicators identified in the S3 document (S3, p. 73), and other certifications related to the environmental sustainability of construction works (LEED, ACE) are equally listed in the same strategy document (S3, p. 73).</p> <p>Moreover, the Regional Government has support projects aimed at fostering the dissemination of the the OECD Guidelines for Multinational Enterprises.</p> <p>Finally, the Regional Government drafted an original Charter on Corporate Social Responsibility, which is close to a Code of Conduct for E-R firms.</p> <p>For an overview: https://imprese.regione.emilia-romagna.it/rsi/doc/progetti-rsi-regione-e-r.</p>

RI Component	Regional policy makers				
<p>Governance</p>	<p>G1: Extent of R&I networks (e.g. platforms, hubs, incubators, accelerators) promoting / supporting RI in the region (Tsanos and Apospori 2017)</p>	<p>Quantitative/Qualitative</p>	<p>Self-assessment in terms of: - Number of networks [Existence of networks if the number is not available] - Extent of involvement of regional policy makers in these networks - Formal / informal character of networks</p>	<p>Regional policy and strategy documents/ Partners'/Experts' assessment</p>	<p>Existence of networks: YES</p> <p>Extent of involvement of regional policy makers in these networks: HIGH</p> <p>Formal / informal character of networks: FORMAL</p> <p>The High Technology Network and the network of local “Laboratories” for CSR and sustainable development are formal networks established and supported by the Emilia-Romagna Regional Government (https://www.retealtatecnologia.it).</p>
	<p>G2: Activities of funders to promote RI at regional level (Tsanos and Apospori 2017)</p>	<p>Quantitative/Qualitative</p>	<p>Self-assessment in terms of: - Number of funding mechanisms to support RI activities [Existence of mechanisms, if the number is not available]; - € invested in RI-relevant projects</p>	<p>Regional policy and strategy documents/ Partners'/Experts' assessment</p>	<p>Existence of funding mechanisms to support RI activities: YES</p> <p>€ invested in RI-relevant projects: N/A</p> <p>As explained above (indicator M2), there are both funding mechanisms concerning specific components of RI (see e.g. http://parita.regione.emilia-romagna.it/) and funding programs supporting policies and actions where RI components are cross-cutting issues (POR FESR).</p> <p>Specific programs on “responsibility” are funded in the context of Corporate Social Responsibility, such as the “Responsible Innovators” award (http://imprese.regione.emilia-romagna.it/rsi/doc/premio-</p>

RI Component	Regional policy makers				
	<p>innovatori) and, more in general, the interventions based on the Regional Law 14/2014.</p> <p>Regarding sustainable development, the S3 Monitoring dashboard allows to identify the investment on “low carbon economy” and the “environmental sustainability” (http://www.regione.emilia-romagna.it/s3-monitoraggio/output.html).</p>				
Ethics (deontology)	E2: Ethical considerations in the evaluation for the regional funding of R&I proposals (Tsanos and Apospori 2017)	Quantitative/Qualitative	% of R&I proposals for funding by regional policy makers that are subject to evaluation of ethical concerns (i.e., R&I practices, ethical implications for the objects of R&I, ethical acceptability of R&I outcomes) over total number of R&I proposals [Existence of evaluations, if the number is not available]	Regional policy and strategy documents/ Partners’/Experts’ assessment	<p>Existence of evaluations of ethical concerns of R&I proposals: YES/NO.</p> <p>While, strictly speaking, there is no ethical assessment of proposals submitted for funding under the ERDF Operational Programme, it is important to notice that project proposals are assessed according to their coherence with the UNSDGs, which identifies a normative reference framework for the firms’ innovation and business activities. This interpretation is coherent with indicator E1 (Significance of UNDGs in policy planning and strategies).</p>
<p>Category: Products</p>					

RI Component	Regional policy makers				
Gender/equality and diversity	GE1: Gender gap of core human resources in science and technology (Tsanos and Apospori 2017)	Quantitative	% difference between the share of economically active population for women and the share of economically active population for men in science and technology	EU regional statistical yearbook 2015, p. 256	Female workers active in R&D amount to 17,111 in 2016 (30,3% of the total), less than half of male workers.
Gender/equality and diversity	GE2: Support for gender equality in regionally funded R&I projects (adapted from Tsanos and Apospori 2017)	Quantitative/Qualitative	Number of regionally funded R&I projects supporting gender equality and/or creating of RDI jobs that employ women [Existence of funded projects, if the number is not available]	Regional policy and strategy documents/ Partners'/Experts' assessment	<p>Existence of regionally funded R&I projects supporting gender equality and/or creating of RDI jobs that employ women: YES</p> <p>The Emilia-Romagna has a sophisticated, integrate system for supporting gender equality through regional bodies and policies, coordinated by a triennial Internal integrated plan for regional actions on gender equality (Piano interno integrato delle azioni regionali in materia di pari opportunità di genere). The latest programming period was in 2014-2016 (https://parita.regione.emilia-romagna.it/il-bilancio-di-genere/approfondimenti/documenti/piano-interno-integrato-2014-2016/@@download/file/PIANO20142016completo_copertina.pdf).</p> <p>In the research and innovation domain, this strategy is translated into the support to the participation of female professionals and entrepreneurs to existing call for projects, rather than into the funding of ad hoc projects. In particular, the POR FESR 2014-2020 has defined specific gender-related indicators for the monitoring and assessment of the program compliance with the principle of gender equality. These indicators include:</p> <ul style="list-style-type: none"> - female participation in research and technology transfer networks and in the processes of change in the production system; - female participation in start-up creation-up and access to financial instruments for business development;

RI Component	Regional policy makers				
					<p>- promotion of women's initiative in urban planning projects with a particular emphasis attention to cultural and creative companies.</p> <p>These principles have been incorporated into public tender procedures, selection criteria, and reward scores. For instance, the call for funding dedicated to the creation/development of start-up establishes a priority for the projects/companies showing a significant degree of female participation in the management and/or among the shareholders (http://servizissir.regione.emilia-romagna.it/deliberegiunta/servlet/AdapterHTTP?action_name=ACTIONRI_CERCADELIBERE&operation=downloadTesto&codProtocollo=GPG/2019/910&ENTE=1)</p>
<p>Open access</p>	<p>OA1: Regional policies for dissemination of and open access to scientific, technical and economic information (adapted from Tsanos and Apospori 2017)</p>	<p>Qualitative</p>	<p>Qualitative discussion and self-assessment in terms of:</p> <ul style="list-style-type: none"> - Existence of a regional policy for open access - Regional institutional mechanisms for establishing, maintaining and monitoring open science and innovation 	<p>Partners'/Experts' assessment</p>	<p>Existence of a regional policy for open access: YES/NO</p> <p>Regional institutional mechanisms for establishing, maintaining and monitoring open science and innovation: NO</p> <p>The Emilia-Romagna regional governance has an open data policy applicable to data produced in its own administrative activities and for many datasets about local services, communities and policies (http://trasparenza.regione.emilia-romagna.it/altri-contenuti/open-data). Similarly, the call for proposals for participatory projects requires that organizers of funded projects ensure “the accessibility of all the documentation about the project and about the participatory process on website specifically dedicated to communicating the process” (see, e.g., https://partecipazione.regione.emilia-romagna.it/la-legge-e-il-bando/bandi/bando2019_sezione/bando-tematico-2019).</p> <p>However, we were not able to find any regional policy recommending or mandating open access/open data options for the scientific results of projects funded by the Regional government.</p>

RI Component	Regional policy makers				
	OA2: Inclusion of open access / open science measures in research policies and calls for proposals (adapted from Tsanos and Apospori 2017)	Qualitative	Existence of Regional open science / open innovation repositories or of regional support (e.g. financial) for the participation in sector or other repositories	Regional programming documents	<p>Existence of Regional open science / open innovation repositories or of regional support (e.g. financial) for the participation in sector or other repositories: NO</p> <p>There is no regional repository, nor regional support for using open access repositories.</p>
UN Development Goals	UN1: Degree of impact on UNSDGs	Qualitative	Qualitative discussion and partners' assessment in terms of the UNSDGs which regional policy impacts the most	Partners'/Experts' assessment	<p>With reference to the regional policy on Research and Innovation, there is no direct coincidence between the UNSDGs and the strategic objectives of the Emilia-Romagna S3 policy. However, there is certainly a connection, as the strategy identifies three "innovation" drives, including "health and well being" and "sustainable development". These two drivers concern various SDGs, such as:</p> <ul style="list-style-type: none"> • SDG3 - Good health and well-being • SDG7 - Affordable and Clean energy • SDG8 - Decent work and economic growth • SDG12 - Responsible consumption and production • SDG13 - Climate action <p>Moreover, SDG4 (quality education) and SDG5 (gender equality) can be seen as cross-cutting themes across E-R research and innovation policies.:</p> <p>Besides research and innovation policy, the Regional Governments implements other projects for the implementation of UNSDGs, for instance by the direct participation in EU funded projects. To make an example, the project <i>Shaping Fair Cities</i>, which is funded by the EU DEAR Action, aims at mobilizing local authorities in the implementation of objectives that address migration challenges and related local policies, with a strong gender approach (SDG5), promoting a peaceful and inclusive society (SDG16), making cities inclusive, safe, resilient and</p>

RI Component	Regional policy makers	
		sustainable (SDG11) and acting to combat climate change and its impact (SDG13).

2.2 RI Performance of Enterprise

RI Component	Firms				
	Data source	Metric	Type of measurement	Indicator	Description
Category: Purpose					
Motivation for doing/supporting research/innovation	RRI Development plan, "1. Formulate your goal"	Inclusion of innovation/S&T components in the official planning of the organizations (e.g. strategic plans, vision and mission statements, etc.)	Qualitative	M1: Integration of innovation/S&T in corporate planning and strategies	
Motivation for engaging with RI	RRI In-depth Assessment Tool	Inclusion of RI components in the official planning of the organizations (e.g. strategic plans, vision and	Qualitative	M2: Integration of RI components in policy planning and strategies	The self-assessment tool provides a proxy measure for the inclusion of RI in companies planning and activities, by surveying the familiarity of the firms involved in ROSIE with the notion of Responsible Innovation. Among the respondents, 26 firms had prior knowledge of RI, while 12 did not. The most familiar groups of respondents are SME with over

RI Component	Firms		
	<p>mission statements, etc.)</p>		<p>50 employees (3 out of 5), SME with less than 10 employees (11 out of 14), SME with 10-50 employees (9 out of 14), social enterprises and cooperatives (labelled as "Other" firms in the surveyed) (3 out of 4). This distribution is likely to be linked to the self-selection of the surveyed companies, which were partly recruited from the project's partners own CSR and RI networks. Interestingly, the one research organization involved in the survey had no prior knowledge of RI, despite the quite positive self-assessment scores across the five RI keys (see below).</p> <p>In terms of activity sectors, the notion of RI was not previously known by respondents working in Agriculture and Fisheries, Building and Constructions, and Research, while one should remind that only 1 organization for each sector participated in the survey. Instead, either all respondents or a majority of them answered positively to this questions in all other sectors involved (Trade and Tourism: 3 out of 3; Industry: 7 out of 14; Services: 14 out of 18).</p>
	<p>Self-assessment(*) Budget allocation for RI components in companies' budget: (a) presence of funded programs targeting (selected) RI components; (b) annual amount (% or €); (b) evolution (increase,</p>	<p>Quantitative</p>	<p>M3: Financial commitment on RI components</p>

RI Component		Firms		
		decrease, stable over the last 3 years – or other programming period where appropriate)		
Ethics (justification of intended outcomes)	Self-assessment(*)	Participation in programs and schemes, and adoption of instruments both mandatory and voluntary relevant for the achievement of the UNDGs (e.g. ethics codes, voluntary guidelines, certifications, standards)	Qualitative	E1: Significance of UNDGs in companies' activities and strategies
Category: Process				
Anticipation	Self-assessment(*)	Number of foresight and strategic planning activities in the current and preceding planning period (specify the relevant planning	Quantitative/Qualitative	A1: Foresight and strategic planning activities (e.g. Scenario building, delphis, etc.) (adapted from Eastwood et al. 2017)

RI Component	Firms			
		<p>period) [Presence/Absence of activities if the number is not available]</p>		
<p>Public engagement</p>	<p>RRI In-depth Assessment Tool</p>	<p>Qualitative discussion and self-assessment of the companies’ experience in users’ engagement techniques (e.g. living labs)</p>	<p>Qualitative</p>	<p>PE1: Users’ involvement in design and development processes</p> <p>Based on the results of the Self-Assessment tool, Stakeholder Engagement has a varying importance for the different types of organizations surveyed in the ROSIE project. The average-self-reported score in pursuing Stakeholder Engagement in the innovation process is 2.2/3.</p> <p>Academia & Research organizations (1 case) perceive themselves as more committed to engage their stakeholder (3/3 score), while SMEs of all sizes seem engagement less important (or less performed) in their innovation processes, ranging from a 2/3 (SMEs with less than 10 employees, 14 cases) to a 2.3/3 score (SMEs with over 50 employees, 5 cases). Interestingly, social and cooperative firms (4 respondents, classified as ‘Other’ in the survey) differ from other business and consider themselves quite committed to stakeholder engagement reporting an average score of 2.8/3.</p> <p>In terms of activity sectors, Building and Constructions (1 respondent) and Trade and Tourism (3 respondents) report the lowest score as per their commitment in pursuing Stakeholder Engagement in innovation, respectively with a 0.5/3 and 1.2/3 average score. Research Organizations perceived themselves as fully committed to Engagement (1 respondent, 3/3 score). High scores are reported also by and industrial innovation networks and their managing bodies (2 respondents, 2.8/3 score), probably because this activity of stakeholder engagement is part of their core mission, Services Sector companies (18 respondents, 2,4/3), and Industrial companies, most of them manufacturing companies, (2.3/3). Finally, it is interesting to notice the acknowledgment of the importance of Engagement in the Agriculture and Fisheries (2.5/3), though only one respondent belongs to this group.</p>

RI Component	Firms			
	RRI In-depth Assessment Tool	No. of public-sponsored projects on engagement in R&I joined [Presence/Absence of activities if the number is not available]	Quantitative/Qualitative	PE2: Participation in public-sponsored engagement projects on R&I
Responsiveness	RRI In-depth Assessment Tool /Self-assessment	Implementation of users/communities feedback mechanisms in companies' operations	Qualitative	RES1: Potential to adapt production processes and business strategies (adapted from Eastwood et al. 2017)
	RRI In-depth Assessment Tool /Self-assessment	Adoption of CSR instruments, such as social budget, sustainability reporting etc. detailing the social/environmental value of corporate operations to customers and stakeholders	Qualitative	RES2: Openness and transparency of corporate operations (adapted from Eastwood et al. 2017)
Reflection	Self-assessment(*)	Existence of/participation in	Qualitative	REF1: Reflexive guidance in companies

RI Component	Firms			
		<p>offices, fora, committees, etc. for the monitoring and assessment companies activities relevant to RI</p>		<p>strategies (adapted from Eastwood et al. 2017)</p>
	<p>Self-assessment(*)</p>	<p>Instruments used by companies, such as codes of conduct, standards, etc. related to RI (e.g. ISO, SA, UNI)</p>	<p>Qualitative</p>	<p>REF2: Use of standards and certifications related to RI (e.g. ISO, SA, UNI) (adapted from Eastwood et al. 2017)</p>
<p>Governance</p>	<p>Self-assessment(*)</p>	<p>Self-assessment in terms of: - Number of networks joined [Existence of networks if the number is not available] - Extent of involvement of companies in these networks (e.g. leading working groups, participating in exchanges of best</p>	<p>Quantitative/Qualitative</p>	<p>G1: Participation in R&I networks (e.g. platforms, hubs, incubators, accelerators) promoting / supporting RI in the region (adapted from Tsanos and Apospori 2017)</p> <p>While the Self-Assessment tool was not designed to measure the indicator for this category, it provides nevertheless indications about the importance of the governance of innovation for the surveyed companies. About this topic, the respondents returned an average score of 2.2/3.</p> <p>Among the respondents, the topic of governance has a key importance for Academia & Research organizations (1 respondent with a 3/3 score. Though to a lower extent, the attention to the governance mechanisms of innovation process seems shared by the larger companies among the respondents (SMEs with over 50 employees, 5 respondents), which report an average score of 2.5/3, and the social and cooperative firms involved in the survey (4 respondents, classified as 'Other' in the survey), which report a 2.4/3 score. Smaller SMEs assigns much less of an emphasis to this aspect of responsible innovation (= < 2.1/3), an attitude which may reflect the</p>

RI Component	Firms			
		<p>practices, etc.)</p> <ul style="list-style-type: none"> - Formal / informal character of networks 		<p>more informal and flat organizational model than often characterizes this type of firms.</p> <p>In terms of activity sectors, respondents working in Agriculture and Fisheries (1 organization), Building and Constructions (1 organization), and Trade and Tourism (3 organizations), all report lower scores (respectively, 1.5/3, 1.0/3 and 1.5/3). Intermediate scores are reported by organizations working in Industry (12 respondents) and Services (18 respondents), posting respectively a 2.3/3 and a 2.2/3 score. Higher scores are instead reported by Business Innovation networks and their management bodies (2 respondents, 2.8/3) and Research organizations (1 respondent, 3/3).</p>
	RRI In-depth Assessment Tool	<p>Self-assessment in terms of:</p> <ul style="list-style-type: none"> - Number of successful bids [Existence of mechanisms, if the number is not available]; - € acquired to invest in RI-relevant projects - Sources of funds acquired by the companies 	Quantitative/Qualitative	<p>G2: Third party funds acquired to promote companies' RI related activities (adapted from Tsanos and Apospori 2017)</p>
Ethics (deontology)	Self-assessment(*)	Qualitative discussion and self-assessment of the utilization of	Qualitative	E2: Adoption or adherence to Codes of Conduct or other instruments for

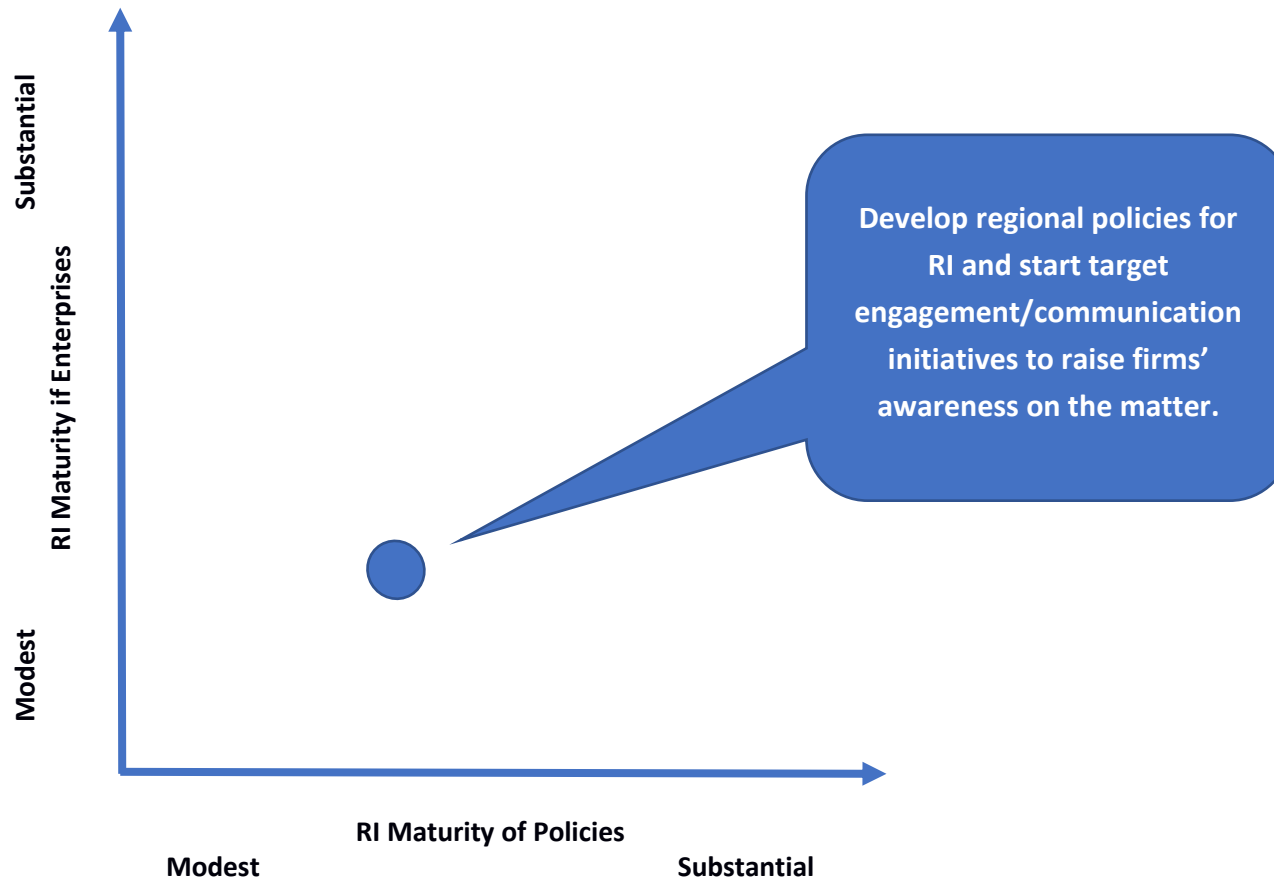
RI Component	Firms				
	Codes of Conduct or other instruments for ensuring the integrity of R&I practices			ensuring the integrity of R&I practices in the company	
Category: Products					
Gender/equality and diversity	RRI In-depth Assessment Tool / Self-assessment	% female employee in R&I roles in companies	Quantitative	GE1: Gender gap of human resources in companies' R&D/technical offices/divisions (adapted from Tsanos and Apospori 2017)	<p>Based on the results of the Self-Assessment tool, the companies surveyed in the ROSIE project see themselves as effectively pursuing Gender Equality in managing their innovation processes, with an average score of 2.5/3.</p> <p>Academia & Research organizations (1 case) perceive themselves as more committed to ensuring Gender Equality (3/3 score), while micro-firms (SMEs with less than 10 employees, 14 cases) and small firms (SMEs with 10-50 employees, 14 cases) average the lowest score (2.1/3).</p> <p>In terms of activity sectors, firms working in Agriculture and Fisheries (1 respondent) report the lowest score (1.5/3), while the highest is reported by Research Organizations (1 respondent, 3/3 score), Services Sector companies (18 respondents, 2,7/3), and industrial innovation networks and their managing bodies (2 respondents, 2,5/3 score), on a par with companies (1 respondent) working in Building and Constructions (2,5/3).</p>
Gender/equality and diversity	RRI In-depth Assessment Tool / Self-assessment	Number of companies' initiatives supporting gender equality and/or	Quantitative/Qualitative	GE2: Companies' programs/measures to support for gender equality in R&I activities/functions	

RI Component		Firms		
		creating of R&I jobs that employ women [Existence of initiatives, if the number is not available]		
Open access	RRI In-depth Assessment Tool / Self-assessment	Qualitative discussion and self-assessment in terms of the frequency of using open access/open data sources to know up-to-date research outputs for the business operations	Qualitative	<p>OA2: Companies' programs/measures to support open access in R&I activities/functions</p> <p>Based on the results of the Self-Assessment tool, the average self-reported score in operating their innovation processes according to an Open Access policy is 2.2/3.</p> <p>Among the respondents, Academia & Research organizations (1 case) stand out for their declared commitment in the uptake of OA principles (3/3 score). SMEs of all sizes see OA less important (or less performed) in their innovation processes, with scores from 1.9/3 (SMEs with 10-50 employees, 14 cases) to a 2.2/3 (all other types of SMEs, 19 respondents in total). Social and cooperative firms (4 respondents, classified as 'Other' in the survey) report an intermediate score of 2.6/3. At a first glance, the results for OA are aligned with those regarding Stakeholder Engagement. This alignment suggests that OA has likely been interpreted by respondents as a proxy for "transparency".</p> <p>In terms of activity sectors, there is a sharp difference between respondents from different sectors. Agriculture and Fisheries (1 organization), Building and Constructions (1 organization), and Trade and Tourism (3 organizations) sectors, all report scores =<1.5/3. On the contrary, organizations working in Industry, Services, Innovation Management, and Research, report scores respectively 2.0/3, 2.4/3, 2.8/3, 3/3.</p>
	RRI In-depth Assessment Tool / Self-assessment	Number of R&I funding/policy programs joined by companies	Quantitative/Qualitative	OA2: Participation in R&I funding/policy programs requiring a commitment to an

RI Component	Firms										
		[Existence of programs, if the number is not available]	open access / open science policy								
UN Development Goals	Self-assessment tool, "RI Drivers - Responce of the innovation process to the dimensions of RRI"	Self-assessment of the impact of companies' innovative products/services on sustainable and inclusive development (10 point scale)	<p>Quantitative UN1: Degree of impact on UNDGs (17 indicators, one for each indicator)</p> <p>Based on the results of the Self-Assessment tool, the companies surveyed in the ROSIE project believe that, in general, their products and services have a moderate impact on UNSDGs. On average, the impact on SDGs is 6.2/10.</p> <p>A closer look to the results shows that there are differences in this self-assessed impact depending on the type of organization and of the Goal considered. The self-assessed impact is higher for Academia & Research Organization (1 case) and SMEs with less than 10 employees (14 cases), scoring a 6.8/10 mark, while SMEs with over 50 employees (5 cases) have the lowest mark, scoring (5,0/10).</p> <p>There are also differences in the perceived impact on different goals. To clarify this aspect, we list below two groups of UNSDGs. The first group includes the ones on which the surveyed companies believe to have a significant impact (=>7/10):</p> <table border="0" data-bbox="1355 922 1870 1037"> <tr> <td><i>Decent Work and Economic Growth</i></td> <td>7,9</td> </tr> <tr> <td><i>Good Health and Wellbeing</i></td> <td>7,8</td> </tr> <tr> <td><i>Industry, Innovation and Infrastructure</i></td> <td>7,5</td> </tr> <tr> <td><i>Responsible Consumption and Production</i></td> <td>7,0</td> </tr> </table> <p>While no other information was available for this analysis, the results suggest that the companies believe to have a stronger impact on Goals which are more closely related to their immediate stakeholders (customers, workers) and to economic/productive activities.</p> <p>On the contrary, impact is perceived weaker or insufficient on a second set of Goals, which are related to more general societal or environmental aspect, as the following group of the Goals seems to suggest, all of them with a self-assessed score <6/10:</p>	<i>Decent Work and Economic Growth</i>	7,9	<i>Good Health and Wellbeing</i>	7,8	<i>Industry, Innovation and Infrastructure</i>	7,5	<i>Responsible Consumption and Production</i>	7,0
<i>Decent Work and Economic Growth</i>	7,9										
<i>Good Health and Wellbeing</i>	7,8										
<i>Industry, Innovation and Infrastructure</i>	7,5										
<i>Responsible Consumption and Production</i>	7,0										

RI Component	Firms
	<i>Zero Hunger and Food Security</i> 5,9
	<i>Clean Water and Sanitation</i> 5,8
	<i>Poverty</i> 5,6
	<i>Reduced Inequalities</i> 5,6
	<i>Peace, Justice and Strong Institutions</i> 5,5
	<i>Life on Land</i> 4,8
	<i>Life Below Water</i> 4,6

2.3 Assessment of Local RI Maturity Level





3 Priorities for Action

The mapping of RI maturity in Emilia-Romagna revealed “modest” level for both the policy framework and enterprises.

According to the methodology, this suggest to:

- Develop regional policies for RI and start target engagement/communication initiatives to raise firms’ awareness on the matter.

At this point in time (Spring 2020), the ongoing process to design the new 2021-2027 RIS3 provides an excellent opportunity to liaise with the regional policy makers and technical bodies to advocate mainstreaming of responsible innovation.

At the same time, CISE having established itself as a recognised centre of expertise on responsible innovation, can evolve its activities from the researching the concept and participating to the theoretical debate to that of supporting SMEs investigating the principles and methodologies of RI and their strategic and practical implications.

4 Lessons from the Pilot Actions

The local pilot action combined design thinking to ethical assessment and responsible innovation (enterprise) road-mapping.

Five SMEs from the IT, mechatronics and consulting sectors were involved in a process that combined working in groups with receiving customised assistance in designing innovations through a co-creation process (design thinking methodology by AzzurroDigitale srl) while assessing its long-term impact (Ethics Canvas) and planning the follow-up process (PRISMA RI Exemplar Roadmap).

Lesson #1 Multiple-competence, transdisciplinary working groups have a great creative potential. SMEs understand that, but tend to fall back on the usual straight-line, tech-focused innovation process when they go back home (also for lack of some competences). It is important to provide environment and occasions to have different SMEs work together in innovation generation and design.

Lesson #2 The methodology can be taught. The ethical orientation needs to be pre-existing. The literature does not provide enough robust evidence on to what extent responsible innovation offering returns on the investment. Qualitative evidence on brand improvement, better industrial relationship, stronger value chain ties, etc. is not convincing unless the entrepreneurs and managers are already inclined to see



themselves as accountable for the impact their products and services release on internal and external stakeholders.

- Lesson #3 Responsible innovation requires a systemic approach which can only hinge on a strong innovation governance and process management. Procedures that are consistent with responsible innovation principles or embed part of responsible innovation methodologies can be the fire-starter, a confidence booster, but it is important that SMEs are made to understand that responsible innovation requires a definitive switch from the short to the long term perspective, from closed-doors to open innovation, to (weak) risk assessment to impact assessment with mutual feedback between the enterprise and its stakeholders. Otherwise we would be over-simplifying and missing out on the actual added value of RI.

5 Lessons from the Study Visits

Due to the COVID-19 outbreak, CISE could only participate in three out of four study visits (Milan – “Man against the machine?” a talk with prof. Marco Taisch; Lublin – innovation convention and fair; Nova Gorica – sustainable tourism and design thinking).

Rather than merely a showcasing of local good practices and/or structures, the study visit were meant as an addendum to exchange among partners through the chance to meet and discuss with local stakeholders that were being engaged by the local partners in the rolling out of ROSIE in the respective territories.

- Lesson #1 Focusing on a specific sector makes the dialogue more seamless yet it lowers the out-of-the-box thinking that professionals from other sectors and background can bring into the process. Not focusing on a sector has more potential in building a case for RI.
- Lesson #2 A lot of discussion on RI is at risk of being simplistic / shallow. Or “There is only one thing in the world worse than being (poorly) talked about, and that is not being talked about”?
- Lesson #3 Language is an issue. Responsible innovation, social innovation and sustainable innovation are often used as synonyms. They are not, and such confusion does not make entrepreneurs comfortable around the subject, especially those that do not deliver solutions to social issues as such but could greatly contribute to solving (or at least not worsening) them.



6 The Roadmap

6.1 Action #1

The Goal

Support the PERCORSI ERRATICI open innovation network in becoming the first network of enterprises committing to generate responsible innovation.

The Strategy

The people	Since the network foundation, its manager has been appointed among CISE’s staff members. The manager works in close connection with the other four members of the management committee. The committee can decide on operational tools to be implemented by the network along the innovation design process.
The resources	The process does not require additional resources from those already allocated by the network, as accelerating on a more definite switch towards responsible innovation can be embedded in current activities by adopting the tools that were tested during the pilot action.
Tasks and timeframe	Formal introduction in the Percorsi Erratici methodology of an adaptation of the Ethics Canvas and the PRISMA RI Exemplar Roadmap by the end of 2020.
Opportunities and strengths	At the network foundation, the members of Percorsi Erratici already shared and issued an official statement to commit to deliver innovations not affecting (actually improving) the quality of life. The network was created with the precise aim to share open innovation processes and share a methodology to that purposes. Two members of Percorsi Erratici took part in the pilot action.
Threats and risks	Although sharing an orientation towards sustainable innovation as a network, the same cannot be as strongly said for the single enterprises.

The Monitoring System

KPI: formal introduction in the Percorsi Erratici methodology of an adaptation of the Ethics Canvas and the PRISMA RI Exemplar Roadmap.



6.2 Action #2

The Goal

Keep raising awareness among SMEs and provide one-to-one support to enterprises' RI processes.

The Strategy

The people	Two members of CISE's staff had previous experience in responsible innovation projects and participated in the debate at national and EU level. Thanks to ROSIE additional staff members had the opportunity to develop a better understanding of responsible innovation and can support the two more senior members in disseminating it.
The resources	CISE receives an annual contribution by the Chamber of Commerce of Romagna, part of which has been earmarked to support dissemination of responsible innovation. Further resources to support specific in-depth actions will be sought through the submission of new project proposals (3 SWAFS 14 are in the evaluation stage).
Tasks and timeframe	<p>Improve communication (website and social media) by more strongly connecting CISE's every action and service delivered to responsible innovation.</p> <p>Promote CISE's competences to local SMEs, as a one-stop shop where they can get free advice and initial support to assess and start possible implementation of responsible innovation in their strategies and practices.</p> <p>Organise events disseminating key concepts and tools and presenting successful case studies.</p>
Opportunities and strengths	Region Emilia-Romagna is preparing its 2021-2027 smart specialisation strategy and discussion around impact assessment and mission-oriented innovation support is intense and promising. The Regional Operational Plan would therefore reflect that in its funding measures.
Threats and risks	Stakeholder engagement is the most difficult part for SMEs. Unless viable methodologies are offered, this risks being the most overlooked element in responsible innovation implementation, which would be highly detrimental to the full development of responsible innovation.

The Monitoring System

KPI: number of enterprises reached through events; number of enterprises receiving one-to-one assistance.