



FoTRRIS

Fostering a Transition towards Responsible Research and Innovation Systems

Scientific Articles

Deliverable D5.5

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Table of content

1	Introduction	5
2	Publications	6
2.1	FoTRRIS Articles	6
2.2	Conferences proceedings	13
2.3	Book chapters	18
3	Conclusion	20

About the FoTRRIS project

FoTRRIS develops and introduces new governance practices to foster Responsible Research and Innovation (RRI) policies and methods in Research and Innovation (R&I) systems.

FoTRRIS stresses that RRI is a collaborative activity from the very beginning. Therefore, FoTRRIS adds the prefix 'co' to the acronym RRI. Important present-day challenges are of a global nature but manifest themselves in ways that are influenced by local conditions. Thus, FoTRRIS focusses on glocal challenges, i.e. local or regional manifestations of global challenges and on local opportunities for solving them.

FoTRRIS performs a transition experiment, i.e. an experiment to support the transformation of present-day research and innovation strategies into co-RRI-strategies. It designs, tests and validates the organisation, operation and funding of co-RRI competence cells. A competence cell is conceived as a small organisational unit, which functions as a local one-stop innovation platform that encourages various knowledge actors from science, policy, industry and civil society to co-design, -perform, and -monitor co-RRI-projects that are attuned to local manifestations of global sustainability challenges.

Since research and innovation systems and practices in EU member states and within different research performing organisations vary, FoTRRIS experiments the implementation of new governance practices in five member states. These five experiments are evaluated, validated and constitute the basis for FoTRRIS policy recommendations towards EU and member states policy makers so as to enforce co-RRI into the national and EU R&I systems. Training is dispensed to various stakeholders, so as to form them to establish other co-RRI competence cells.

For more information see <http://www.fotrris-h2020.eu>

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1 Introduction

This deliverable provides information about the FoTRRIS publications produced during the lifespan of the project. It gives information about the authors, the journals or books they were published in and the identification numbers. Also links to the publications are included. Finally, this deliverable presents publication activities planned to take place after the project's ending and that intend to contribute to a broader uptake of the project's results in the field of research and innovation studies, as well as to promote the FoTRRIS co-RRI approach.

All publications mentioned in this deliverable can be found on FoTRRIS website (section: Publications and Documents).

2 Publications

The FoTRRIS consortium has published several articles journals, books and conference proceedings. The main topics of these publications are RRI, ICT for RRI, sustainable development and gender issues. Information about them is presented below.

2.1 FoTRRIS Articles

Author(s)	Marian Deblonde
Title	Responsible research and innovation: building knowledge arenas for glocal sustainability research
Journal/Book	Journal of Responsible Innovation, 2015. Vol. 2, No. 1, 20–38.
DOI/ISSN	https://doi.org/10.1080/23299460.2014.1001235
Abstract	<p>In knowledge economies, the prevailing belief is that research and innovation are crucial for societal progress. The call for ‘responsible’ research and innovation is, however, an indication that the link between science and technology on the one hand and societal progress on the other is less unequivocal than many would like to think. This article wonders why the relationship between knowledge economies and ‘responsible’ research and innovation is not self-evident. It, consequently, proposes glocal sustainability research (GSR) – and an appropriate process architecture for GSR – as a translation of responsible research and innovation (RRI) and it suggests a type of knowledge arena – and some institutional preconditions for its institutionalisation – as a breeding ground for RRI.</p> <p>Keywords: responsible research and innovation, knowledge economies, glocal sustainability research, knowledge arena.</p>
Comments	-

Author(s)	Sandra Karner, Anita Thaler and Magdalena Wicher
Title	Wie durch gemeinsame Wissensproduktion in der Gender-Forschung soziale Geschlechtergerechtigkeit in Wissenschaft und Forschung befördert werden kann
Journal/Book	Dahmen, Jennifer & Thaler, Anita (eds.; 2017). Soziale Geschlechtergerechtigkeit in Wissenschaft und Forschung. Opladen, Berlin, Toronto: Verlag Barbara Budrich, p. 127-141.
DOI/ISSN	ISBN 978-3-8474-2064-4
Abstract	How can co-creation of gender-knowledge lead to more social gender justice in academia and research? This book chapter discusses methods which draw on RRI-principles (participation, reflection, anticipation, etc.) to overcome the so called research-to-policy-to-practice-gap. The authors recommend to involve relevant stakeholders in good time, use their language and ease potential conflicts and power struggles by co-creating knowledge together.
Comments	-

Author(s)	Anita Thaler
Title	Care-Politics of RRI
Journal/Book	IFZ Electronic Working Papers IFZ-EWP 1-2017.
DOI/ISSN	ISSN 2077-3102 Download: http://www.ifz.at/Media/Dateien/Downloads-IFZ/Publikationen/IFZ-EWP-2017-1_Anita-Thaler
Abstract	<p>In this working paper I bring two strands of my work together: a project about responsible research and innovation (RRI, Owen et al. 2012), with the aim to translate the somehow vague concept into practice, and theories and analytical frameworks of feminist technoscience (Weber 2006). This connection was initially sparked by a paper from Ulrike Felt, where she discussed the growing demand for “reflexive work” (2016, p.11), especially in the realm of RRI, which she then connected to “care and articulation work” (ibid., p. 12). After I went back to expert interviews I conducted 2016 for this RRI project, I analysed the discourses about doing responsible science as “matters of care” (Puig de la Bellacasa 2011). This feminist techno scientific approach illustrates the very fact, that the care-politics of RRI could oppose its success as research and innovation strategy to meet the ‘grand challenges’ of our society responsibly.</p>
Comments	-

Author(s)	Jelena Mazaj, Silvana Di Bono, Arabella Mocciaro Li Destri
Title	The role of local communities in the co-creation of innovations for inclusive and sustainable territorial development: The Madonie case
Journal/Book	-
DOI	-
Abstract	<p>Rapid social, political, geographic and economic changes in the world, technological revolution of the last century are followed by wide positive and negative changes in people lives and R&I process (open markets, digitalisation, resource scarcity, poverty, etc.). Looking for solutions for a better future, the EU policy agenda for 2030 promote actions which foster co-creation of innovations, targets sustainability and Sustainable Development Goals. As such, EU regions are motivated to enhance and capitalise local competences and resources to achieve a social impact and tackle glocal challenges more effectively. Such reinforcement of local development is possible applying interdisciplinary in R&I processes, through the co-design of innovation by different stakeholders and the empowerment of informal innovation actors.</p> <p>This article presents a methodological framework applied to the co-creation of innovations involving local stakeholders in the Madonie region in Sicily, the results gained and the role of the intermediate body – a Competence Cell responsible for facilitation of such collaboration. This process has been implemented in the frame of the Horizon 2020 FoTRRIS project.</p>
Conference	<p>10th International Scientific Conference “Business and Management 2018” May 3–4, 2018, Vilnius, LITHUANIA</p>
Comments	Abstract is accepted, the full paper is under revision

Author(s)	Anne Snick
Title	The EC focus on Responsible R&I as leverage for P2P-production
Journal/Book	Journal of Peer Production http://peerproduction.net
DOI	-
Abstract	<p>From the perspective of complex flow systems P2P-production can be considered a resilient practice emerging in response to (multi-faceted) crises that indicate the limits (and likely collapse) of the current system. However, since this system is strongly institutionalised whereas the emergent alternatives are not, the latter risk getting recuperated within (key aspects of) the old system. Especially the capitalist economic, legal and governance models often do not offer the manoeuvring space for alternatives to break through. It is therefore crucial for P2P-practices to increase their ascendancy by fostering the development of adapted economic and legal frameworks. A potential strong leverage for this could be found in the current emphasis on 'Responsible R&I' by the EC. RRI as a concept was launched to address the big challenges of today. However, just as P2-practices are at risk of recuperation in the capitalist system, RRI-projects too often are approached as just another box to tick for getting access to research funds, yet without getting embedded into a new paradigm. The question is therefore under what conditions RRI could become a leverage for P2P production.</p>
Conference	-
Comments	Abstract is accepted, the full paper is under revision

Author(s)	Anne Snick
Title	RRI in the context of Anthropocene: a systems analysis.
Journal/Book	Journal of Responsible Innovation
DOI	-
Abstract	<p>RRI emerged in response to what is called ‘big challenges’, complex systemic crises at a global scale. So in contrast to classical R&I which is highly specialised, RRI should adopt a broad systemic approach taking the planetary ecosystem (thermodynamic laws) as its frame of reference. Scientists agree that human activity is the root cause of today’s crises (Anthropocene), so RRI should help us to understand what drives this disruptive human activity. In line with research on the sustainability of complex dynamic flow systems, RRI has to foster resilience by detecting and upscaling alternative approaches. Many citizens and CSO’s today develop innovative socioeconomic practices, pursuing the common good in community based ‘living (or urban) labs’. Companies confronted with the effect of the big crises are exploring new business models and partnerships (e.g. ethical business, circular economy etc.) RRI has to clarify what makes these initiatives resilient and under what conditions their impact can be heightened so as to guarantee a timely regime shift. The hypothesis is that this requires specific infrastructure, partnerships and methodologies, supported by innovative R&I policies,</p>
Conference	-
Comments	Abstract is accepted, the full paper is under revision.

Author(s)	Zoltán Bajmócy and György Pataki
Title	Responsible research and innovation and the challenge of co-creation
Journal/Book	Arno Bammé and Günter Getzinger (eds.): Yearbook 2018 of the Institute for Advanced Studies on Science, Technology and Society. Profil-Verlag, Munich and Vienna, 2019
DOI/ISSN	-
Abstract	<p>Inclusion is one of the key principles of responsible research and innovation (RRI). However, the way it is formulated by policy documents and translated in the RRI literature leave room for various interpretations and diverse practices. Therefore, there is a need for the clarification of this term and the challenges it implies. Present paper attempted to elaborate on the issue of inclusion with regard to RRI alongside the following issues: (1) the opportunity for participating or not participating; (2) the roles and mandates of the participants and (3) power relations and coming back to reality from the safe space of participation. In line with the endeavour of the FoTRRIS project, the paper calls for 'co-created RRI' and analyses the challenges of such process through the case of Transition Wekerle Hungary.</p>
Conference	-
Comments	<p>Accepted for publication</p> <p>ISBN number will be provided by the publisher in autumn 2018</p>

2.2 Conferences proceedings

Author(s)	Zoltán Bajmocy, Sandra Karner, Marian Deblonde, Balint Balasz, Zoltán Elekes, Judit Gebert, and others
Title	A Rocky Road to co-RRI: Barriers for Collective Efforts to Pursue RRI
Journal/Book	Book of Abstracts 15 th Annual STS Conference Graz 2016 Critical Issues in Science, Technology and Society Studies (9-10 May 2016) Download: https://conference.aau.at/event/46/material/slides/26.pdf
DOI/ISSN	-
Abstract	<p>Responsible Research and Innovation (RRI) has become a key concept under the EU's Framework Programme for research and Innovation Horizon 2020, and it is gradually finding its way into national research and innovation programmes. However, the conceptualisation of RRI is still under development, it may concern the process as well as its outcomes and its practical implementation may take various forms. Within a recently started European project (FoTRRIS - Fostering a Transition towards Responsible Research and Innovation Systems: http://fotrrish2020.eu), we focus on the idea that RRI builds on collaborative multi-actor processes, where a variety of relevant actors work together in order to better target R&I activities at pressing societal challenges. At its best such co-operations involve transparent, inclusive and reflexive processes of problem definitions, analysis, and co-constructed visions of potential solutions encompassing a broad range of options making societal values such as empowerment, social justice and sustainability explicit, or anticipating potential impacts.</p> <p>In practice the partnership between academic researchers and non-research actors may vary in form and intensity across different research activities or within a single project life cycle.</p> <p>Generally speaking, this contrasts with the traditional model of academic research, particularly in terms of who holds the authority to exercise agency. Within the current frame for R&I such collaborative efforts face a multitude of barriers, which makes it difficult to incorporate RRI practices broadly in research routines. The presentation will discuss the barriers identified through a literature review, which we consider most relevant to be anticipated when</p>



	setting up RRI experiments within the FoTRRIS project.
Comments	STS Conference Graz 2016 Session 15: Responsible Research and Innovation: Making the Collective Aspect explicit

Author(s)	Marian Deblonde
Title	Fostering a Transition towards Responsible Research and Innovation – Reflecting on the Hidden Part of the Iceberg
Journal/Book	Book of Abstracts 15 th Annual STS Conference Graz 2016 Critical Issues in Science, Technology and Society Studies (9-10 May 2016) Download: https://conference.aau.at/event/46/material/slides/26.pdf
DOI/ISSN	-
Abstract	<p>Systems thinking is a transdisciplinary framework for seeing interrelationships rather than things, for seeing patterns of change rather than static snapshots, for being aware of how our mental models shape our belief systems. One systems thinking model that is helpful for understanding global issues is the iceberg model. (http://www.nwei.org/resources/iceberg/ consulted on 30-03-2016).</p> <p>The Iceberg model consists of several levels. The mental model level is the ‘hidden part of the iceberg’. It consists of the know-how, paradigms, ‘attitudes, beliefs, morals, expectations and values that allow structures to continue functioning as they are. These are the beliefs that we often learn subconsciously from our society or family and are likely to be unaware of’ (http://www.nwei.org/resources/iceberg/, consulted on 30-03-2016). With respect to the R&I system, the mental model refers to attitudes, beliefs, morals, expectations and values that influence the framing of science, innovation and sustainability. Benessia and Funtowicz point to paradoxical intrinsic loops in this approach. We argue that awareness of these intrinsic paradoxes is a precondition to allow for a transformation of current R&I systems into co-RRI systems.</p> <p>Keywords: RRI, Function, purpose and paradoxes of research and innovation systems, optimisation and substitution, evidence and objectivity, sustainability and resilience.</p>
Comments	STS Conference Graz 2016 Session 15: Responsible Research and Innovation: Making the Collective Aspect explicit

Author(s)	Susana Bautista
Title	Text Simplification in RRI
Journal/Book	Book of Abstracts 15 th Annual STS Conference Graz 2016 Critical Issues in Science, Technology and Society Studies (9-10 May 2016) Download: https://conference.aau.at/event/46/material/slides/26.pdf
DOI/ISSN	-
Abstract	<p>Responsible Research and Innovation (RRI) entails doing science, information and communication with society and for society carrying out an involvement of society during the process of research and innovation.</p> <p>Our interests converge towards the development of interfaces based on language for modern day information technologies applications for modifying or finding information, issuing commands, or present output results in a way easy to understand.</p> <p>In this proposal, we focus on natural language processing, in particular in the text simplification process to transform a text into a similar text that is easier to read. To do this, one has to identify what causes difficulties to readers and define different transformations, mainly aimed at syntactic and lexical constructions that can be applied to the original text to generate a simplified version.</p> <p>The way of writing or presenting information can exclude many people, especially those who have problems to read and write or to understand. There are different factors as for example limited cultural education, people have cognitive problems or another disability, people with social problems or people whose mother tongue is not the official language of their adoption country which can cause problems. In particular, there are specific groups like deaf people, autistic people, elderly or people with language disorders such as aphasia or dyslexia, who have problems when they access information. In order to make information accessible to all people, we must keep in mind the diversity of the people who will access it.</p> <p>Our proposed work on automatic simplification of numerical expressions, is a computational implementation based on a generic model of the process. We present the theoretical bases for text simplification along with a generic model, and show the experimental identification of simplification strategies on numerical expressions to decide what kind of changes need to be</p>

	<p>implemented for our automatic approaches. We have developed and implemented two systems to simplify numerical expressions in English and Spanish that follow the generic model and used the simplification strategies identified in the experimental studies. For both systems an evaluation with experts has been carried out.</p>
Conference	<p>STS Conference Graz 2016</p> <p>Session 15: Responsible Research and Innovation: Making the Collective Aspect explicit</p>

Author(s)	Eve Dallamaggiore
Title	Possible economic models for RRI practices
Link	https://conference.aau.at/event/95/material/slides/18.pdf
DOI	-
Abstract	Different ways to economically support RRI practices are presented, based upon the FoTRRIS' activities (WP2).
Conference	16 th Annual STS Conference Graz 8-9 th May 2017
Comments	Session "How can Responsible Research and Innovation move from a concept to real change?"

2.3 Book chapters

Author(s)	Susana Bautista, Jelena Mazaj and Marlon Cárdenas
Title	Developing RRI Practices: The Role of the ICT in Stakeholders' Knowledge Exchange and co-creation Processes
Journal/Book	Responsible Research and Innovation Actions in Science Education, Gender and Ethics Cases and Experiences Springer Briefs in Responsible Research Innovation Governance Fernando Ferri, Ned Dwyer, Saša Raicevich, Patrizia Grifoni, Husne Altiok, Hans Thor Andersen, Yiannis Laouris, Cecilia Silvestri
DOI/ISSN	978-3-319-73207-7_4 ISSN: 2452-0519
Abstract	<p>The ICT sector is one of the fastest growing sectors in the global economy. It provides a wide range of services for different actors according to their type of actions. Meantime, there is a limited understanding how different ICT tools can support co-creation process among different groups of stakeholders in terms of the Responsible Research and Innovation (RRI) processes. As we see the core principle of the RRI is a common work, or in other words—a co-creation process.</p> <p>So who and how can facilitate and ensure the quality of such co-creation process and its outcomes in multidisciplinary society? This article puts focus specifically on the use of ICT tools for communication and knowledge exchange (creation of common projects) among different groups of stakeholders, emphasising the importance of such online co-creation in nowadays transdisciplinary society and explaining the importance of the facilitation of co-creation process. It also highlights the architecture of Co-RRI platform, an example of a web platform which supports stakeholders' cooperation in the frames of the Horizon 2020 FoTRRIS project. It was created to support project Co-RRI activities in five partner countries (Belgium, Spain, Italy, Hungary, and Austria). The need for such cooperation practices in local communities is demonstrated and experiences of local communities are summarised.</p>
Comments	-

Author(s)	Anne Snick
Title	EU Politics for sustainability: systemic lock-ins and opportunities
Journal/Book	EUROPEAN UNION AND SUSTAINABLE DEVELOPMENT CHALLENGES AND PROSPECTS
DOI/ISSN	Editions Oeconomia 9791092495 Imprimerie Chaumeil Clermont-Ferrand, France ISBN : 979-10-92495-04-1
Link	http://fotrris-h2020.eu/wp-content/uploads/2014/11/Libro-Snick-Def-ver2..pdf
Introduction	<p>Since 1972 European leaders have issued policies aimed at safeguarding the wellbeing of ecosystems and the prosperity of all people. Yet the threats have since increased steadily. In terms of system dynamics this indicates a lock-in, mechanisms that make the system veer away from its stated goal. A systemic analysis of EU policies and their (lack of) impact reveals various factors driving the socioeconomic system; a transition in each of them is required for politics to really change course.</p> <p>Four drivers determine the dynamics of the socioeconomic system: technical, social, eco-monetary and paradigmatic. EU policies mostly address the technical driver without taking into account the leverage of the three others. Yet the growing focus within EU research policy on Responsible Research and Innovation (RRI) may offer strong opportunities for transition.</p>
Comments	-



3 Conclusion

The publications listed in this deliverable intend to raise awareness about co-RRI within the scientific community. Because the consortium couldn't yet publish a significant part of the results obtained during the FoTRRIS project, the partners have agreed to collaborate on more articles. The consortium, for instance, will prepare a special issue on co-RRI, which will be presented for open access to the Budapest Management Review managed by Corvinus University of Budapest (<http://cbs.uni-corvinus.hu/index.php?id=59885>) (peer reviewed). All partners will contribute. In addition to this, an open call will be launched via, amongst others, the FoTRRIS website. The Hungarian partner, ESSRG, will edit this special issue.