



Grant Agreement number: 824565

Project acronym: **TeRRitoria**

Project title: 'Territorial Responsible Research and Innovation Through the involvement of local R&I Actors'

Type of action: **Coordination and Support Action (CSA)**

DRAFT VERSION

TeRRitoria

Deliverable No. D3.3

Deliverable Title: Map of approaches, policies and tools for Territorial RRI

Deliverable leader:	Daniele Mezzana (K&I)
Lead Author:	Giovanni Caiati, Daniele Mezzana (K&I)
Contributors:	Alfonso Alfonsi, Maresa Berliri, Fabio Feudo, Paolo Signore (K&I)
Contractual delivery date:	31/10/2019
Delivery date:	19/11/2019
Dissemination level:	Public



Document Revision History

Version	Date	Author/Editor/Contributor/Reviewer	Summary of changes
0.1	15/10/2019	Giovanni Caiati, Daniele Mezzana	Document creation
0.2	25/10/2019	Alfonso Alfonsi, Maresa Berliri, Fabio Feudo, Paolo Signore	Incorporation of team feedback
0.3	12/11/2019	Giovanni Caiati, Daniele Mezzana	Document revised version
0.4	15/11/2019	Ildiko M. Ipolyi, Andrei Coca, George Eleftherakis, Maria Michali, Nikos Zaharis	Incorporation of feedbacks from partners
0.5	15/11/2019	Ildiko M. Ipolyi	Overall quality check of deliverable
0.6	18/11/2019	Giovanni Caiati, Daniele Mezzana	Document revised version

Disclaimer

The sole responsibility for the content of this publication lies with the authors. It does not necessarily reflect the opinion of the European Commission. The European Commission is not responsible for any use that may be made of the information contained therein.

Copyright

This document may not be copied, reproduced, or modified in whole or in part for any purpose without written permission from the TERRITORIA Consortium. In addition, an acknowledgement of the authors of the document and all applicable portions of the copyright notice must be clearly referenced.
All rights reserved.

This document may change without notice.



INDEX

EXECUTIVE SUMMARY	5
CHAPTER ONE INTRODUCTION.....	7
CHAPTER TWO KEY ASSUMPTIONS, CONCEPTS AND METHODS	9
1. What's at stake with Territorial RRI.....	9
1.1. The profound transformations affecting society	9
1.2. The de-territorialisation process	9
1.3. Territory-making practices	10
1.4. Territorial dynamics in European highly conflicting cultural and political landscape	10
1.5. The role of Territorial RRI	10
2. Territory-making: conceptual framework	11
2.1. Territory-making in the Map	11
2.2. Territory-making definition	11
2.3. Two components of territory-making	12
3. Territorial RRI: preliminary conceptual framework	12
3.1. A strategy for defining Territorial RRI.....	12
3.2. Territorial RRI refers to territory-making	13
3.3. Territorial RRI builds on Institutional RRI	13
3.4. The notion of Response-ability.....	14
4. The Mapping process	15
4.1. The map as a navigational tool.....	15
4.2. Data gathering	15
4.3. Data processing	16
4.4. Data organisation	17
CHAPTER THREE SOME FEATURES OF THE TERRITORY-MAKING	18
1. The territory-making	18
2. Territorial awareness.....	18
2.1. Risks and issues at stakes	19
2.2. Symbols and visions.....	19
2.3. New public interpretation	20
3. Territorial mobilisation	21
3.1. Identification of social actors and resources.....	21
3.2. Recognition of the actors' commitment	22
3.3. Design and implementation of a territorial "project"	22
4. Territorial change for governance	23
4.1. Continuous involvement of territorial actors.....	24



4.2. Recognizable reconfiguration of relationships between actors.....	24
4.3. Redefinition of the identity structures of the actors.....	25
CHAPTER FOUR THE TERRITORIAL POLICIES	26
1. The vectoriality of change	26
2. Territorial orientations	27
2.1. Re-rooting economic and social activities	27
2.2. Re-shaping territorial infrastructure	27
2.3. Establishing a new local regulatory framework	28
2.4. Empowering territorial actors	28
2.5. Strengthening local decision making.....	29
2.6. Territorial risk management.....	29
3. The governance frameworks.....	30
3.1. Establishment of a participatory agenda setting system	30
3.2. Establishment of a community-based support structure.....	31
3.3. Development of a territorial exchange system	32
3.4. Development of a community-led participative project	32
3.5. Establishment of a knowledge co-creation platform	33
3.6. Development of a collaborative framework between local authorities and civil society.....	34
4. A matrix for the territorial policies.....	35
5. Some policy tips.....	36
CHAPTER FIVE THINKING TERRITORIAL RRI	41
1. Interpreting Territorial RRI	41
2. Putting Territorial RRI into practice (possible approaches)	44
3. Ideas for designing Territorial RRI experiments or pilot projects (how to use this map)	60
CHAPTER SIX TOOLS.....	63
ANNEX 1 LIST OF THE 30 SELECTED BOTTOM-UP GOVERNANCE INNOVATION PRACTICES	74
ANNEX 2 LIST OF THE 43 SELECTED RRI GOVERNANCE INNOVATION PRACTICES.....	75
ANNEX 3 REFERENCES	77



EXECUTIVE SUMMARY

This document contains a *Map of Approaches, Policies and Tools for Territorial RRI* (from now on, the Map) that can be used, together with the results of other already available mapping exercises, for designing and implementing the five TeRRItoria Transformative Experiments. The Map summarises and elaborates the knowledge produced in the framework of the WP3 – *Mapping governance innovation practices in Europe and beyond* of the TeRRItoria project, in particular in two inventories focused on: bottom-up governance innovation practices (D3.1); RRI governance innovation practices (D3.2).

The Map has been drafted also to give a contribution in the ongoing debate on Territorial RRI and on the role of Research and Innovation (R&I) in the “Territory-making” processes. The Map starts with presenting what’s at stake with territorial RRI, related to: the transformations affecting our post-modern society; the “de-territorialisation” process (that is the loss of control over the territory and the weakening of ties between a community and its territory); the “territory-making” practices aiming at dealing with de-territorialisation and activating a re-territorialisation (i.e., the development of new meaningful relations among actors and between them and their territory); the territorial dynamics in European cultural and political landscape; the possible role of a Territorial RRI – once developed – which may provide a general framework for R&I to produce knowledge supporting “territory-making” processes.

A definition is also provided of “Territory-making” for the purposes of this work, that is those actions that activates, support and stabilise a re-territorialisation process. Then, the Territorial RRI has been defined as a framework for fostering, supporting, give sustainability and improve the quality of territory-making process. Territorial RRI may be built elaborating and adapting the body of knowledge already developed in Responsible Research and Innovation (RRI) framework, taking into account the RRI keys identified and promoted by the European Commission (public engagement, gender equality, science education, open access, ethical issues and the “horizontal” key of governance), as well as the RRI dimensions called anticipation, reflexivity, inclusiveness and responsiveness. The notion of “response-ability” is also proposed, for describing the capacity to deal with a societal context in continuous and radical change and characterised by high level of stress and social fragmentation.

The Map has been developed adopting a “navigational” interpretation of mapping: it does not intend to report exhaustively all the possible measures useful for implementing a Territorial RRI program; rather, it aims at providing orientations, benchmarks and tools that can support the partners of TeRRItoria involved with the transformative experiments to explore and fully harness from such an approach.



Some features of the territory-making processes where the RRI itself is to be grafted are depicted, in particular: *The development of a "territorial awareness"* (identification of risks and issues at stake for the territory; identification of aggregating symbols and visions for the territorial actors; development of a new public interpretation of the territory); *The activation of a "territorial mobilisation"* (identification of social actors and resources; recognition of the actors' commitment; design and implementation of a territorial "project"); *The production of a territorial change for governance* (continuous involvement of territorial actors; recognizable reconfiguration of relationships between actors; redefinition of the identity structures of the actors).

On the basis of what emerged from the analysis of the governance innovation practices, it was possible to identify two necessary components of territory-making *policies*: the *"territorial orientation"*, which refers to what is intended to be done for and to be changed in the territory; the *"governance frameworks"*, which refer to the structured and recurring operating methods through which the territory-making process takes place.

Several possible *territorial orientations* are: Re-rooting economic and social activities; Re-shaping territorial infrastructure; Establishing a new local regulatory framework; Empowering territorial actors; Strengthening local decision making; Territorial risk management. As for the *governance frameworks*, some possible options are: Establishment of a participatory agenda setting system; Establishment of a community-based support structure; Development of a territorial exchange system; Development of a community-led participative project; Establishment of a knowledge co-creation platform; Development of a collaborative framework between local authorities and civil society.

Some possible methodological elements to approach, start, implement and support in several ways the mentioned policies are provided as "policy tips". These methodological elements can be cognitive in nature (e.g., identifying a shared vision on local priorities, accompanying the action with social research, etc.), or operational ones (fostering a participative decision-making, leveraging on both formal and informal leadership and authorities, etc.). Finally, the importance is stressed to assure an adequate involvement of R&I, so to manage these complex processes and policies. Then, the differences between "Institutional RRI" and "Territorial RRI" are highlighted. In this framework, the TeRRItorial RRI can play a pivotal role, considering: the RRI keys (how to use the RRI keys developed in Institutional RRI to open research and innovation to territory-making process); the RRI dimensions (how the four dimensions of anticipation, inclusiveness, responsiveness and reflexivity can be taken into account while using R&I for strengthening the territorial governance). On the basis of the RRI practices collected, a first list of approaches to Territorial RRI has been identified.

Some practical reference tools (guides, toolkits, regulations, books, articles, etc.) for the design and development of the five transformative experiments are also presented.



CHAPTER ONE

Introduction

The *Map of Approaches, Policies and Tools for Territorial RRI* (from now on, the Map) summarises and organises the work done in the framework of the WP3 – *Mapping governance innovation practices in Europe and beyond* of the TeRRItoria project. TeRRItoria is a H2020 funded project, coordinated by the European Science Foundation (ESF), and implemented by 13 partners (research institutes, regions, municipalities and other regional organisations and networks).

The overall objective of the project is to experiment with the adoption of Responsible Research and Innovation (RRI) approach in European regional and territorial R&I systems. TeRRItoria is based on the idea that RRI approaches, policies and practices, developed so far at the level of research institutions, may be adapted to that of regional and territorial governance. Thus the project contributes to developing what can be called a “Territorial RRI”. In order to do so, the project will develop a set of 5 Transformative Experiments in 5 European selected territories – 4 regions and 1 municipality.

The Map summarises and elaborates the knowledge already produced on policies approaches and tools that can be used (together with the results of other already available mapping exercises carried out in TeRRItoria¹), for designing and implementing the mentioned Transformative Experiments. Such knowledge was previously collected and reported in two inventories focused on governance innovation, respectively dedicated to: bottom-up governance innovation practices (D3.1); RRI governance innovation practices (D3.2). The former has been developed by Knowledge and Innovation (K&I), while the latter was developed by The South-East European Research Centre (SEERC). Both inventories are public and available in the project website (<http://territoriaproject.eu/>). The lists of both types of practices are attached in the annex 1.

Besides its use in developing the 5 Transformative experiments, the Map has been drafted so as to give a more general contribution in the ongoing debate on Territorial RRI and on the role of Research and Innovation in the “Territory-making” processes.

The Map is divided in six chapters, including this introduction. Chapter Two introduces the key concepts informing the whole document, and provides a short description of the methods and sources adopted. Chapter Three describes the dynamics of “territory-making”, as it emerges from the bottom-up governance innovation practices. Chapter Four is devoted to the territory policies, while the Chapter Five connects the territorial dynamics and policies with the RRI-oriented governance innovation practices identified, and presents a proposal for a better understanding

¹ See the work done within the TeRRItoria WP2 “Mapping R&I Ecosystems”, led by ARC-Fund.

of what territorial RRI actually means. Finally, Chapter Six is dedicated to present some useful tools identified in the mapping process.

The Map has been drafted by Daniele Mezzana and Giovanni Caiati of K&I and is based on the work done by all the K&I TeRRItoria project team (which also includes Alfonso Alfonsi, Maresa Berliri, Fabio Feudo and Paolo Signore). Moreover the Map is based on the work of all the partners involved in WP3 and especially by SEERC for developing the inventory of RRI governance innovation practices.



CHAPTER TWO

Key assumptions, concepts and methods

This chapter provides an overview of the key assumptions, concepts and methods used for developing the Map of approaches, policies and tools for Territorial RRI. After presenting what's at stake with territorial RRI (Par. 1.), the chapter focuses on the two main conceptual frameworks used for the development of the Map: territory-making (Par. 2.) and Territorial RRI (Par. 3). Finally, the methods adopted to draft the map are presented (Par. 4.).

1. What's at stake with Territorial RRI

1.1. *The profound transformations affecting society*

The importance of developing a Territorial RRI may be understood in the framework of the profound transformations experienced in contemporary societies. Usually such transformations are described as a shift from a modern society to a new kind of society² (we will use here the concept of "post-modern society"). Despite the variety in interpretations, there is an overall agreement about the main features characterising this change: the weakening of social structures (including social norms, behavioural models, social roles, values, etc.) and the increasing autonomy of individuals (to make their own choices, to shape their own identities, to develop their own world views, etc.) and the groups they belong to.

1.2. *The de-territorialisation process*

One of the more prominent effects of this change is the crumbling of the notion of territory as bounded space of national and territorial sovereignty. While modern society was based on territorially delimited nation-states as the locus of internal sovereignty (and therefore the territory as a social structure or, better, as a physical space shaped by and used as basis for a coordinated set of social structures), in a globalised post-modern society the government's control over a physical territory appears to be constantly challenged (Sassen, 2013). We are referring here to phenomena such as the de-localisation of industrial production, the globalisation of markets, the increasing relevance of digital technologies and virtual spaces, the local impact of environmental issues (e.g., climate change), and national and international migration. In many cases these dynamics are undermining local development and social cohesion. In some cases, e.g., mountain areas, small islands, outward regions, former industrial

² Many names have been given to this new type of society (Knowledge society, Reflexive modernity, Liquid society, Risk society, etc.). Operationally, we will use here the concept of 'post-modern society'. See: Bauman (2000); Beck (1992); Giddens (1991); Lyotard (1984).

areas and towns, etc., this process is leading to de-population that puts in danger the existence of the local communities themselves. The loss of control over the territory and the weakening of ties between a community and its territory can be generically referred to as a general process of de-territorialisation (Paasi, 1998; Elden, 2005).

1.3. Territory-making practices

However, in this critical picture, even though in scattered places, a set of “territory-making” practices are taking shape all around the world, even in Europe, with the aim of dealing with de-territorialisation and activating a process of re-territorialisation, i.e., the development of new meaningful relations among actors and between them and their territory. Talking about *territory-making* we refer here to all those experiences developed in different sectors (e.g., energy, mobility, risk management, rural/urban development, etc.) that has been labelled with different names (governance innovations, social innovation, anticipatory experiences, constellation of actors, etc.), that are based on new forms of coordination among a wide set of social actors, including research actors, and that are able to produce meaningful structural change in the territory, and to effectively respond to de-territorialisation related challenges.

1.4. Territorial dynamics in European highly conflicting cultural and political landscape

To understand the full extent of the problems connected with de-/re-territorialisation dynamics, it's important to frame them in the highly conflicting context characterising the political and cultural landscape in Europe and beyond. Two conflicting visions on territorial governance are clashing (Latour, 2018), while on one side there is an assumption that a shift from the national interest-driven perspective to the “global” is needed, on the other side, a shift back to the state as a bounded political (or even physical) space is preached as the only solution to “take back control” (Kallis, 2018). In this context, the impacts of de-territorialisation and the related local conflicts can easily scale-up to regional, national and even European level. The persistence and the advancement of de-territorialisation process – together with the associated feeling of loss – if not contrasted, may have effects that go far beyond a specific place, especially now that the so-called populist movements are having a momentum all over Europe. In this respect, an inclusive, anticipatory, responsive and reflexive territory-making (November et al., 2010) may represent a new horizon of action to go beyond the conflicts between “the local” and “the global” (Latour, 2015).

1.5. The role of Territorial RRI

Research, science and technology play a pivotal role for the activation of a re-territorialisation process that may anticipate the changes that may be inclusive of the diversity within a territory, that can reflect and have the capacity to respond to continuous challenges connected with the ever ongoing changes characterising the post-modern societies. In fact, to be effective, territory-making should put in place both social and technological innovations based on scientific and

expert knowledge. Hence the need for opening up the R&I ecosystems and making them more capable of creating synergies and connections with other societal actors, especially those acting at the territorial level who normally are not included in the formal negotiation tables involving local policy-makers, business and research. In this respect, while RRI is a way of strengthening the governance of scientific processes under conditions of uncertainty, Territorial RRI – once developed – may provide a general framework for R&I to produce knowledge supporting “territory-making” processes.

2. Territory-making: conceptual framework

2.1. Territory-making in the Map

In the view presented above, Territorial RRI is narrowly related to the ongoing dynamics of territory-making. For this reason, the Map has been built considering territory-making as one of the two main theoretical bodies of knowledge for its development (the other is that of Territorial RRI itself). Given that Territorial RRI is understood as a framework for supporting territory-making processes, information and knowledge about territory-making will be considered as integral part of the map.

2.2. Territory-making definition

With territory-making (Dorstewitz, 2016) we refer to those actions that activates, support and stabilise a re-territorialisation process, intended as the strengthening of ties between a community and the places where it lives. In this sense, territory-making can be also considered as a response to de-territorialisation. The terms territory-making has been selected as it shows clearly the orientation and the capacity to re-invent or re-shape the territory in which the action is implemented.

The analysis of territory-making will be based on the recognition of certain elements that have been drawn from the literature on “territorial coalitions” (Peralta & Hollerstein, 2015; Alfonsi et al., 2004) as they describe a dynamic of territorial re-orientation and change:

1. *A shared vision:* common objectives and visions are shared by the territory’s community overcoming pre-established interests and the contrapositions between representatives of the various actors involved
2. *A broad activation of territorial actors:* several different actors – none of whom being able, by themselves, to control the social complexity – start to cooperate to achieve economic and social development objectives
3. *A change in roles and configurations:* a shift from a tactical use of cooperation between local authorities and the private sector, non-profit sector and other public organisations,



to strategic involvement of these sectors in decision-making concerning living conditions at a local level.

In summary, with territory-making, territory can stop being the place where the painful consequences of globalisation manifest themselves, and can start being the source of a new social agency, the basis upon which new social configurations grounded on territory and territorial belonging can be developed.

2.3. Two components of territory-making

An important conceptual distinction in dealing with territory-making is the difference existing between territory and territoriality. While territory indicate the territory itself (the sum of human and non human subjects based on a certain place and all their relationships), "territoriality" indicates the legal and social construct encasing a sovereign authority over a bounded territory (Sassen, 2013).

In this Map, territory-making will be interpreted as an action operating at both these levels. In this respect it's possible to identify two components of territory-making.

The first one is its orientation to modify the territory itself (either focusing on the local community or on its environment). The second one, is its capacity to modify the governance framework of the territory. Albeit the two components to a certain extent overlap and influence each other, it's useful to distinguish between the two components, as they represent two different tensions that can also be not aligned.

Territory-making means creating new alignment between territory and territoriality, i.e., the introduction of new forms of governance (governance innovations) capable to exercise a control over the territory in a context that – as we have already said – is characterised by an increased autonomy of individuals and groups, complexity and blurring boundaries.

3. Territorial RRI: preliminary conceptual framework

3.1. A strategy for defining Territorial RRI

One of the main issues the Map has to deal with is the lack of previous definitions and experiences directly referred to as Territorial RRI. In order to build a Map of Policies, Approaches and Tools two preliminary understanding of Territorial RRI has been adopted. Firstly, Territorial RRI has been understood as a framework for fostering, supporting, give sustainability and improves the quality of territory-making process. Secondly, Territorial RRI may be built on the body of knowledge already developed in Responsible Research and Innovation framework. While the two strategies and the related concepts used for building the map are synthetically

presented below, a more extensive presentation of a working hypothesis on Territorial RRI – and of the difference with the “institutional RRI” will be done in Chapter Five.

3.2. Territorial RRI refers to territory-making

As we have seen, the map was built on a preliminary understanding of Territorial RRI as a framework for fostering, supporting and give sustainability and quality to territory-making process. Territorial RRI can be understood also as the capacity of research and innovation to respond to de-territorialisation and to contribute to re-territorialisation processes. Assuming this perspective – beside some important overlaps and common aspects – Territorial RRI differs from other concepts such as open innovation, territorial innovation, innovative milieu, cluster of innovation, etc. In fact, while such approaches are mainly focused on improving the innovation capacity and the competitiveness of a territory, Territorial RRI is focused on the strengthening of ties between a community and its territory and in fostering new forms of territorial governance.

3.3. Territorial RRI builds on Institutional RRI

A second preliminary understanding for the development of the Map is that Territorial RRI can be built on the broad body of knowledge already developed in Responsible Research and Innovation (RRI) framework. Given that RRI has been developed so far mainly at the level of R&I institutions, we will refer from now on to it as Institutional RRI, so to be able to distinguish it from Territorial RRI. Through analogy or direct application, a set of elements of institutional RRI are used in the map to develop a Territorial RRI approach, also taking into account the results of the Inventory of RRI governance innovation practices (Zaharis at al., 2019) carried out by SEERC, within the framework of TeRRItoria Work Package 3 (see Chapter One and Five).

A first element of institutional RRI that has been adopted is the definition of RRI itself. RRI has been defined as the process of aligning research and innovation to the values, needs and expectations of society. In other terms, RRI refers to a process by which societal actors and innovators become mutually responsive to each other with a view to the (ethical) acceptability, sustainability and societal desirability of the innovation process and its marketable products (Von Schomberg, 2013).

A second element used for developing Territorial RRI refers to the five RRI keys identified and promoted by the European Commission. The keys to access a Responsible Research and Innovation are:

- *Public engagement* – new means of systematically engaging citizens/CSOs in research and innovation activities such as through agenda setting, foresight and public outreach
- *Gender equality* – promote gender equality measures and plans (GEP), and sustain the development of gendered contents and gendered innovations



- *Science Education* – introduction of new curricula, new teaching methods, new means of systematically fostering informal learning in non-educational settings
- *Open access* – introduction of new rules or practices concerning open access and/or open data
- *Ethical issues* – implementation of new rules concerning treatment of research ethics, codes of conduct, ethical reviews.

Moreover the 5 keys are crosscut by an horizontal element:

- *Governance* – development of models for RRI that integrate all the previous dimensions.

A third and final element of institutional RRI used to build the Map refers to RRI dimensions. Four “dimensions” of RRI have been identified connected to its main aim of ensuring a governance to scientific processes under conditions of uncertainty, ignorance and ambiguity. In this perspective, RRI may be interpreted as a new way of conceiving four integrated dimensions of responsible research and innovation: anticipation, reflexivity, inclusion and responsiveness (Stiglooe et al., 2013).

- *Anticipation* implies envisioning the future development of R&I and understanding how current dynamics may have effect on the future. This dimension is also referred as “anticipatory governance” (Schaper-Rinkel, 2013).
- *Reflexivity* may be defined as the capacity of the research and innovation actors to keep control of their own activities, to understand the limits of the knowledge produced and of the processes of research agenda setting, as well as to reflect on values embodied or connected with R&I (Stilgoe et al., 2013).
- *Inclusiveness* refers to the engagement of different stakeholders since the early stages of research and innovation, thus defining a moral obligation for everyone “to engage in the collective debate that shapes the context for collective decision making” (Von Schomberg, 2007).
- *Responsiveness*, is mainly linked to the reaction and management of economic, environmental or societal risks involved in new technologies. This implies the identification of related risks and the development of appropriate responses (d’Andrea et al., 2017).

3.4. The notion of Response-ability

Finally, for framing territorial RRI we will use the notion of Response-ability. This concept was initially conceived in business studies to describe the capacity of an organisation to deal with an internal and external environment exposed to rapid changes. More recently, the concept has been used in STS studies and in feminist theory (Haraway, 2016) for describing the capacity to deal with a societal context in continuous and radical change and characterised by high level of stress and social fragmentation. Response-ability focuses not on “being responsible” but on learning how to respond and “opening up possibilities for different kinds of responses”



(Schrader, 2010). Response-ability differs from responsibility since the central connotation is no longer an imperative of taking charge and giving reason but rather an ability to respond to others (Barad, 2007; Meissner, 2014).

4. The Mapping process

4.1. *The map as a navigational tool*

The Map has been developed adopting a navigational interpretation of mapping (November et al., 2010). This approach conceives maps as a practical tool for going from a point A to a point B, rather than considering them as an exact reproduction (in scale) of static territorial features (the so-called mimetic interpretation of mapping). In this respect, the Map does not intend to report exhaustively all the possible measures useful for implementing a Territorial RRI program. Rather, it aims at providing orientations, bench marks and tools that can support the partners of TeRRItoria involved with the transformative experiments to explore and fully harness from such an approach.

4.2. *Data gathering*

The map was built through identifying, selecting and analyzing a set of governance-innovation practices developed in different contexts in Europe and beyond that can be used as a basis for the development of Territorial RRI programs, projects or experiments.

As for their identification, two different types of practices have been taken into consideration: the bottom-up governance innovation practices and the RRI governance innovation practices. The first one is related to experiences of territory-making developed in different fields that have been already acknowledged for their innovative capacity and for their transformative impacts at the territorial level. The second one is related to the innovative RRI-oriented practices developed under the EU-funded SWAFS program, and under FP7 or other programmes, such as Interreg Europe. By coupling these two types of innovation, the map intends to combine the perspective of a renewal of territorial governance systems with the one of reforming the governance of Research and Innovation.

For what concerns the selection of the practices, the following common selection criteria have been applied.

1. *Relevance*: the practices have been selected as they fit with the governance innovation concept (see Par. 2.3.) i.e.: they involve different actors; they are focused on a common stake; they are processual and open in nature.
2. *Significance*: the practices have been selected for their impact, actual or potential (in terms of economic, institutional, regulatory, social or equality progress).



3. *Transparency*: the practices have been selected since they are well documented and they "tell" in detail what has been done. Transparency indicates a high degree of reflexivity of the selected innovations.
4. *Applicability*: the practices have been selected for the possibility to be used (or at least indirectly or potentially inspiring) for carrying out the transformative experiments of TeRRItoria project.

The analysis of the practices has been done prevalently through desk research, analyzing reports, papers, journal articles, websites and any other sources available on the web. In some cases the missing information has been collected through targeted interviews.

4.3. Data processing

The results of the analysis have been collected in two separated inventories dedicated respectively to bottom-up governance innovation (Mezzana et al., 2019) and to RRI governance innovation (Zaharis et al., 2019). In this text the reference numbers to these practices is marked respectively with # (e.g., #13) for the first inventory and with ◇ (e.g., ◇13) for the second one (see Annexes 1 and 2).

In the inventory of bottom-up governance innovation practices 30 practices have been analysed of which 23 are located in Europe (in 13 different countries) and 7 outside Europe (in 5 countries). The practices are focused on many sectors of intervention: agriculture, health, energy, ICT, city planning, mobility, housing, natural hazards, climate change, waste management, water and sanitation. All the practices fit the selection criteria: they adopt new paradigm of cooperation, they are territorially oriented, they are open-ended and processual in nature. Each practice has been analysed taking into consideration the following issues: interpretation and vision promoted, actors mobilisation dynamics, activities implemented, opportunities and obstacles met, and impacts produced.

In the inventory of RRI governance innovation practices 43 practices have been collected overall. Starting from a long list of 80 projects focused on RRI and/or some of its keys (see Par. 3.), 15 EU-funded projects have been selected on the basis of the above mentioned criteria. For each of these projects around 3 practices have been identified as separated meaningful unit of analysis. Since the practices have been produced in European projects, they have not been developed in a specific country, being they the output of a cooperation among institutes based in different countries. The practices identified are focused on different aspects: RRI as a unified approach; Gender Equality; Ethics; Public Engagement; Science Education; Open Access. Each practice has been analyzed through a template including the following items: general description, overall objective, the policies/strategies adopted, the synergies with external actors, barriers and obstacles, the impacts produced.

4.4. Data organisation

Finally, the data collected and processed have been de-structured and re-organised in the present Map. This has been done through an overall analysis of the two inventories through different heuristics: interpretative (for Chapter Three, devoted to the dynamics of “territory-making”), taxonomic (for Chapter Four, devoted to territory-making policies and tips), hypothetical (for Chapter Five, devoted to identify possible approaches to territorial RRI), and selective (Chapter Six, focused on practical tools to be used). Moreover, data organisation work has been accompanied by a targeted scoping review of the literature on emerging social re-configurations and territoriality. The overall results of the mapping process are represented in this map.

As we have seen, this chapter provides an overview of the conceptual and methodological framework used for developing the map. Chapter Three provides some evidences on territory-making common features and dynamics. Such dynamics should be considered as key factors in each territory-making or territorial RRI initiative. Chapter Four suggests that a territory-making policy is a combination of a territorial orientation and a governance framework. On the basis of the data collected, 6 different territorial orientations and 6 different governance framework have been identified, providing a menu of $6 \times 6 = 36$ different possible policies, together with some “policy tips” from the methodological point of view. Chapter Five elaborates a working hypothesis on territorial RRI through projecting RRI in the territorial dimension. Moreover the differences between institutional RRI and territorial RRI are highlighted. On the basis of the RRI practices collected, a first list of approaches to Territorial RRI has been identified. Finally, Chapter Six collects and describes a set of selected tools for the design and implementation of experiments, projects or programmes of Territorial RRI.

CHAPTER THREE

Some features of the territory-making

1. The territory-making

To understand what territorial RRI is, or what can be, it is important to first understand what are some relevant features of the territory-making (related to Re-Territorialisation) processes where the RRI itself is to be grafted.

Based on the aforementioned inventory of 30 Bottom-up Governance Innovation Practices (TeRRItoria, deliverable D3.1), in the following pages we will try to briefly illustrate those recurrent elements which can be *prima facie* considered as distinctive features of the territory-making, at least for the specific objectives of the present project. In particular, from a first examination of these BUGIPs in the light of the conceptual framework presented in Chapter Two, three main features have been identified:

- The development of a “territorial awareness”
- The activation of a “territorial mobilisation”
- The production of a territorial change for governance.

In the cases examined, some elements emerge for their importance of more or less structured forms of scientific inputs (of various kinds) or in any case linked to sophisticated technological knowledge and skills in order to manage complex processes like those related to the territory-making process. This aspect will be further elaborated in the following chapters.

2. Territorial awareness

A process of territory-making has among its fundamental elements the existence of a “territorial awareness”. We refer to the presence of one or more actors able to produce effective interpretations of the territory and its dynamics as well as to share them with a wider range of individual and organised actors at local level.

We can identify three important aspects of “territorial awareness” which can be singled out in the cases examined:

- Identification of risks and issues at stake for the territory



- The identification of aggregating symbols and visions for the territorial actors
- The development of a new public interpretation of the territory.

For each aspect a box is presented containing some example emerging from the analysed practices.

2.1. Risks and issues at stakes

In order for activate territory-making processes, a key role is played by the presence of one or more actors able to identify challenges and risks in territorial terms, i.e., as factors which endanger its economic development and its political and social fabric. The identification of these risks and challenges can be understood as an attempt which issues are at stakes with territory, i.e., issues to manage which it is necessary to mobilise specific energies and resources, on the basis of territorial belonging.

All initiatives framed within the Eindhoven Living Lab (The Netherlands) are related to a challenge in the City. There are several area coordinators who form the link between the municipality and the citizens in a specific area and who have knowledge about social, economic, environmental and physical-spatial characteristics of the area. (Practice #11)

The Land Exchange project (Portugal) was born to cope with: the need to bring young people to live in the territory; the problem of unemployment; the need to stem the rural exodus and the desertification of the interior. (Practice #2)

The public co-working space “La Colaboradora” (Spain) was created to address difficult challenges faced by Zaragoza’s people, unemployment the most pressing one of all. (Practice #14)

The project “Bridging the gap” in Cascais (Portugal), aimed at introducing a participatory budget mechanism, was launched to face the high electoral abstention rate, and fill the distance between citizens, politicians and policies. (Practice #19)

2.2. Symbols and visions

A second element of “territorial awareness” is the identification and use of symbols and visions referring to the territory, which contribute to attract the interest of local actors, aggregating and mobilising them to pursue common goals.

As the examples given below, these symbols and visions tends to put the local dimension and the territory in the forefront (through ideas like “self-reliance”, “local community”, “tradition” or “autarchy”, up to create a local currency.



The responsible of the project about renewable energy and energy efficiency in the District of Murau (Austria), to facilitate the involvement of different local stakeholders, utilised the ideas of “self-reliance” and “energy autarchy”, well rooted in the local culture. (Practice #27)

Within the Samsø project (Denmark) about renewable energies, this island was symbolically represented by wind-farms, that were present also in the farming tradition of inhabitants ancestors. (Practice #7)

The Sutton Community Farm (United Kingdom), born to increase access to fresh, healthy, sustainable food, has the aim to be transparent, professional, democratic, inclusive, passionate, collaborative, innovative, inspiring, fun, pragmatic, promote equality and demonstrate leadership. 5 pillars are part of the vision: space and community; local food supply, enterprise and diversification business activity, leadership, membership. The farm take inspiration from the three ethics of permaculture (care for people, care for the planet and fair shares), and 10 principles of One Planet Living (zero carbon, zero waste, sustainable transport, sustainable materials, local and sustainable food, sustainable water, land use and wildlife, culture and community, equity and local economy, health and happiness). (Practice #5)

To symbolise the new economic process fostered by the Totnes REconomy project (United Kingdom), a new local currency was created: the Totnes pound. (Practice #1)

2.3. New public interpretation

A third element of “territorial awareness” is the elaboration of a new public – and communicable – interpretation of the characteristics, limits, possibilities and opportunities existing in a given territory.

In other words, there is an attempt to “re-define” the territory as something to be built or as an objective to be attained through the coordinated participation of different actors, and the application of new social and technological solutions.

The two cases reported below exemplify this tendency, where territory is re-define respectively as a “transition town” and a “smart city”.

Totnes REconomy project (United Kingdom) experiments how a town can respond to the global challenges and face in this way the local ongoing negative economic trends: within this frameworks, Totnes was re-interpreted as a real “Transition town”. (Practice #1)

The Eindhoven Living Lab (The Netherlands) is used as a label for various collaborative initiatives focusing on social challenges and the use of technology and data in the city. In an important formal policy document, the city is described as a “smart city”, focusing on pioneering, innovation, sustainability, cooperation and dealing with societal challenges. (Practice #11)



3. Territorial mobilisation

A second feature of the territory-making, which is indispensable in light of the practices examined, is the conception and implementation, on the part of the involved players, of a “territorial mobilisation”, that is the ability to face the risks together with other actors, in an attitude of openness, connection and involvement.

In this regard, at least three aspects can be identified:

- Identification of social actors and resources
- Recognition of the actors’ commitment
- Design and implementation of a territorial “project”.

For each aspect a box is presented containing some example emerging from the analysed practices.

3.1. *Identification of social actors and resources*

A first aspect of the implementation of a “territorial mobilisation” concerns the identification of social actors who can be mobilised and the resources available in a given territory. This identification can take place following different pathways. For example, in some cases, the process can be initiated by single actors (public, private, non-profit or research) to then involve other actors. In other cases, the re-territorialisation process takes place according to more traditional logics of a political, economic, social or technological nature thus involving already established networks or associations. In other cases, a mixture of these pathways may be observed.

Within the framework of the project CO-Bologna (Italy), a “polytechnic of common goods” was established by the municipality, to accompany the process of mapping the available civic energies, through 12 meetings in the six districts of Bologna. (Practice #17)

In preparation of Totnes REconomy project (United Kingdom), a preliminary one year research on local economy and opportunities for people was carried out by members of the Town Council, some local colleges and other actors. Based on the research, a “Local Economic Blueprint” was published, containing information on opportunities for local businesses and new jobs (in sectors like food, renewable energy, residential energy efficiency, health and care services), as well as ways in which the community can work together to realise some of these opportunities. (Practice #1)

La Colaboradora (Spain) is a public co-working space of collective intelligence where people exchange services and know-how using a “time bank”. The lack of resources made the promoters think of a public space where people could use their talents to build new opportunities together, according the principles of the “collaborative economy”. (Practice #14)

3.2. Recognition of the actors' commitment

A second aspect concerns the recognition of the actors' commitment. In other words, territory-making processes can take place when the different actors involved are able to put into play their interests, mission, aspirations and even worldviews, and at the same time be available to go beyond their traditional competences.

This aspect is particularly important when new bonds are established among actors who are usually not involved in the traditional partnerships, i.e., partnerships which are extremely focused on specific objectives and connect actors mainly for the institutional role they play. On the contrary, territory-making processes (in the meaning we are detecting) seem to favour the establishment of "territorial coalitions" (see Chapter Two), i.e., forms of partnerships more intense in terms of relations, where actors are more involved in terms of resources, interests, emotions and identity and are more engaged in finding effective ways of cooperation, in the light of higher goals, shared with all the others, related to territory.

The District of Vauban project (Germany) has been a collaborative project of the City of Freiburg, intending to plan a new district to meet the high demand on living space in Freiburg, and the Forum Vauban, formed by engaged citizens who had the vision of an ecological, socially just and self-organised city quarter with lots of green space and affordable housing. The Vauban district was created through cooperative decision-making, through self-organised housing initiatives of cooperatives and privately organised building groups, while the overall planning of infrastructure, the selling of land property, and the ecological building laws were set-up and coordinated by the government of the City of Freiburg including participatory planning processes with the future residents. (Practice #21)

The Innovation Platform Gothenburg (Sweden) bring different actors together to co-create knowledge and understanding that promotes sustainable urban futures. People from a wide range of research fields and expertise work participate, from: business, sociology, political science, architecture, biology, physical resource theory, law, human ecology, engineering sciences to design. (Practice #10)

3.3. Design and implementation of a territorial "project"

The third element characterising a "territorial mobilisation" is the presence of a shared territorial project, i.e., a concrete perspective for action based on and aimed to the territory, able to harnessing and channelling the social energy mobilised through the territorial awareness and the territorial coalition.

As emerged from the examined practices, territorial "projects" have an open character, i.e., are largely flexible in terms of, e.g., actions, actors involved, or phases, and tend progressively to assume the form of social process, characterised by internal evolutionary dynamics.

This is probably due to the same complexity of territorial processes, which cannot be designed and implemented, but activated through territorial projects and driven as far as possible towards desirable objectives.

The responsible of the Eindhoven living lab (The Netherlands) describe the project in this way: “The Eindhoven living lab is strongly connected to narratives and discourse around doing things together as is expressed by many words that are used in documentation and conversation concerning the living lab starting with ‘co’: co-creation, co-design, co-development, collaborate, co-operate, etc. But is also about experimentation and words like laboratory, testing and prototyping (in the context of design) are commonly used. Living labs are also part of a trend and discourse focusing on ICT and the use of data and often associated with smart cities, internet of things and open source developments”. (Practice #11)

Taking into consideration the low rates of participation, the participative budget process in Agueda (PT) was thought as a mechanism of education for citizenship and the establishment of a relationship of trust between the elected and the citizens, using ad hoc technological solutions. The PB takes also into consideration the diversity of its citizens and the different social and ethnical minorities on the town territory. (Practice #18)

4. Territorial change for governance

Finally, a third indispensable condition for the start-up of territory-making processes, for the purposes of our project, is the production of a territorial change, or better real “institutional changes”, having to do with a local shared governance.

In this case we mean profound and generally irreversible modifications in the relationships between the key players engaged in the political, economic and social fabric of the territory. This entails fostering cooperation frameworks not crystallised in the usual participative and consultative channels, and able to maintain a constant tension between territorial strategies and local actors.

In this regard, the cases examined allow identifying at least three features:

- Continuous involvement of territorial actors
- Recognizable reconfiguration of relationships between actors
- Redefinition of the identity structures of the actors.

For each aspect a box is presented containing some example emerging from the analysed practices.



4.1. Continuous involvement of territorial actors

A first type of territorial change consists in the capacity of keeping constantly involved the several territorial actors (including individual citizens) necessary for the resolution of territorial problems.

As shown in the examples below, this capacity is often connected with the establishment of networks, platforms and other technical solutions facilitating the cooperation to last and keep vital over time.

The Malmö Innovation Platform (Sweden) focuses on the renovation of existing apartment buildings in low-medium income areas. The Platform is a network of government-business-university partners, which brings together diverse actors, creates permanent space for discussion on urban (re)development, and supports the creation and implementation of urban experiments. (Practice #12)

Within the framework of the Totnes project (United Kingdom), the so-called local “Community of Dragons” was created, including community members supporting over time the new entrepreneurs through money and non-financial assets (funds, help for business plans, place to work, land, expert advice, moral support, furniture and equipment, child care, meals, etc.). (Practice #1)

4.2. Recognizable reconfiguration of relationships between actors

A second type of territorial change consists of the establishment of stable, recognizable and public reconfigurations of the relationships between the actors involved. In the territory-making processes we are considering, these relationships are profoundly transformed and take concrete forms in the implementation of innovative actions from the technological, economic and social point of view.

As shown in the examples below, reconfiguration processes quite always entail for the actors involved to face challenging changes such as, e.g., modifying consolidated relations, assuming new tasks and roles or adopting new communication and working styles or procedures (for example, adopting co-creation procedures).

Several initiatives of Malmö Innovation Platform (Sweden) aim to break away from the “business as usual” paradigm, and are designed to reorganise and restructure relationships inside the city and between the key actors in the platform. The platform does not carry out projects or innovations itself, but instead supports their initiation and implementation by bringing together individuals from different organisations and providing starter funds for idea development. Participants share experiences and knowledge gained from the supported projects via the platform, where those experiences are evaluated and, ideally, utilised in new projects. Platform participants are also

attempting to embed technical experiments in a broader discussion about the social organisation of the city and the flows of authority and resources. (Practice #12)

As the responsible of Eindhoven living lab (The Netherlands) states “The living lab is an approach that fits the definition of change in social relationships and new ways of doing, organising, knowing and framing: Doing: doing things in an experimental manner, where things can go wrong; Organising: it aims to link citizens, the public and the private sector and research and education institutions as a new and experimental governance model; Knowing: its main aim is to do and organise differently in order to generate new knowledge; Framing: the living labs is also a label that in itself is part of process of new framing.” (Practice #11)

The co-working space La Colaboradora (Spain) is co-governed by the local public administration and other members, promoting self-employment and public space ownership. (Practice #14)

4.3. Redefinition of the identity structures of the actors

Hand in hand with the other territorial changes, a further and profound transformation consists in a redefinition of the identity structures of the actors involved. This means that aspects such as the respective missions and internal rules can be modified, but above all the ways in which actors reorganise themselves, to collaborating and interacting differently with the other actors present in the territory.

In general, we can say that all partnerships implying intense and co-creative relations inevitably produce profound changes in the actors involved; and this is surely common when territorial coalitions are established.

The adoption of a participatory budgeting process in Agueda (Portugal) has profoundly changed the functioning of the Municipality. The process runs across all the activities of the Municipality, embedded in the administrative modernisation and bottom-up approach. The methodology of “action-reflection-action” is adopted, and blended tools are used to collect suggestions from citizens (both internet and participatory sessions). (Practice #18)

The project CO-Bologna (Italy) is based on the idea of a “collaborative city”, where municipalities and citizens can co-manage public and private spaces and assets. The key is to transform the entire city or some parts of it into a laboratory, by creating the proper legal and political ecosystem for the installation of shared, collaborative, polycentric urban governance schemes. Among others, a “technical unit for civic imagination”, and a web site with a section dedicated to the mapping of common goods were created. (Practice #17)

CHAPTER FOUR

The territorial policies

1. The vectoriality of change

In the previous chapter, we discussed of the particular processes of territory-making related to the governance innovation practices considered by our project. At this point, we need to deal with a further issue, i.e., if it is possible to “give a direction” and to ensure some effective stabilisation of these processes, and if so, how.

In this way we enter the dimension of territory-making policies, i.e., an explicit and organised set of measures, rules, actions and guidelines adopted in order to attain one or more collective objectives, in this case connected to the regeneration, revitalisation or reinforcement of a given territory.

On the basis of what emerged from the analysis of the 30 bottom-up governance innovation practices, allowed it was possible to identify two necessary components of territory-making policies, at least for the purposes of TeRRItoria project:

- The “territorial orientation”, which refers to what is intended to be done for and to be changed in the territory
- The “governance frameworks”, which refer to the structured and recurring operating methods through which the territory-making process takes place.

Both components seem necessary for activating territory-making policies. The territorial orientation is simply ineffective (remaining a mere ideological stance) if new governance frameworks are not developed. Similarly, new governance frameworks which are not based on a territorial orientation are unlikely to lead towards a territory-making process.

Moreover, both components are essential for defining and implementing innovative solutions and practical devices to face with the complexity characterising any territory-making process which, by definition, requires the establishment and maintenance of new articulated relationships among many local actors as well as strong scientific and technological inputs.

In the following pages, some information and insights are given on both components and on the way in which their intersection can be used as a tool to set up territory-making intervention, as are, for example, the 5 territorial experiments envisaged by the TeRRItoria project.



At the end of the chapter, some “policy tips” are provided, about a set of methodologies to start, implement and support the mentioned policies.

2. Territorial orientations

The examination of the various governance innovation practices allows identifying at least 6 “territorial orientations”, i.e., orientations of the promoters of these practices about “what to do”, or rather about “what to change” in the territory to respond to the challenges of the de-territorialisation. These territorial orientations are as follows:

- Re-rooting economic and social activities
- Re-shaping territorial infrastructure
- Establishing a new local regulatory framework
- Empowering territorial actors
- Strengthening local decision making
- Territorial risk management.

2.1. Re-rooting economic and social activities

A first territorial orientation aims at establishing or re-implanting an activity of production of goods and services on the basis of an interpretation or reinterpretation of territory and with the objective to revive it. This orientation aims, therefore, to contrast, in a direct and targeted way, any risks of disintegration, social abandonment, and economic impoverishment.

In the cases examined, this orientation manifests itself, for example, through:

- The analysis of the physical, economic and social characteristics of the territory (Practices #1, #2, #4, #27)
- The activation of initiatives coping with local dynamics, such as unemployment, emigration or the de-localisation of productive activities (Practices #1, #2, #7)
- The identification of the opportunities available in the territory, in terms of natural (Practices #2, #5, #6, #7) and human (Practices #1, #2, #3, #4, #5, #6) resources.

2.2. Re-shaping territorial infrastructure

A second Territorial orientation concerns the re-shaping of the infrastructures existing in the territory. This orientation is usually present in the cases in which it is intended to reconvert or



introduce from scratch a key technological system for the life and development of the territory, or to carry out interventions on urban planning.

This orientation is recorded in the practices considered and practically implemented, for example, through:

The reorganisation of the spaces and the mobility to foster a re-appropriation of the urban space (Practices #12, #20)

The development of “physical” accommodations intended as an engine for the socio-economic development and the regeneration of the territory (e.g., the installation of new infrastructures for renewable energy, the establishment of Internet connections to isolated rural areas, etc.) (Practices #7, #8).

2.3. Establishing a new local regulatory framework

This third Territorial orientation has at its centre the creation of new regulatory frameworks, in particular the establishment of new rules, regulations and procedures to exercise forms of economic and social innovation in the territory.

In the examined practices, this orientation manifests itself, for example through:

- The decision to create regulations about the involvement of citizens and stakeholders in taking care of urban commons (Practice #17)
- The decision to establish public policies about the re-use of land in abandoned territories (Practice #2)
- The arrangement of new ways of distributing mobility in the urban space (Practice #20).

2.4. Empowering territorial actors

A fourth Territorial orientation has at its core the empowerment of local actors, providing training, services and other kind of support, aimed at their social integration or at improving their capacities to give a contribution in the economic and social development of the territory.

Examples of this orientation were found in some examined practices in which the promoters devised and then implemented:

- Multifunctional services for supporting the people living in deprived urban areas (Practice #22)



- Structured training programs in information technologies, and related support services, to young immigrants (Practices #15, #16)
- Facilitating structures and services for innovators (Practices #9, #10, #11).

2.5. Strengthening local decision making

This fifth Territorial orientation concerns the strengthening of local decision making mechanisms, with a particular focus to bridging the gap between decision makers, stakeholders and citizens.

This orientation manifests itself in some examined practices, for example where it has been pointed to:

- Set up new decision-making systems, f.i., to restore the citizens' trust towards decision makers, to ensure consent to important infrastructural policies, etc. (Practices #18, #19, #27)
- Search for new technological tools (related to the Internet) to consult citizens around relevant public policies (Practices #18, #19).

2.6. Territorial risk management

The sixth Territorial orientation that has been identified has at its core the prevention of the environmental risks, economic and social recognised at the local level, and the way in which this prevention is realised.

This orientation occurs, for example, in cases where:

- Structured forms of collaboration between public authorities, research bodies and citizens' organisations have been established to manage natural risks (for example, floods) at the local level (Practices #23, #24)
- The aim was to involve, on a large scale, groups of citizens (for example, poor farmers and women) who are usually excluded or marginalised from territorial management (Practice #25).

3. The governance frameworks

As mentioned above, the “governance frameworks” are the second component of the territory-making policies. As highlighted above, a governance framework can be understood as a set of structured and recurring operating methods, to manage and stabilise the territory-making processes. At the heart of a governance framework there are always new social configurations and therefore the definition of new ways (new roles, structures, communication channels, tasks, responsibilities, etc.) for the actors in a given territory to cooperate with each other.

The analysis of the different governance innovation practices, in particular, has allowed to identify 6 operational governance frameworks. Each of these frameworks, as we shall see, can intersect with one or more of the territorial orientations presented in paragraph 2. The “governance frameworks”, or at least those identified in the context of this work, are the following:

- Establishment of a participatory agenda setting system
- Establishment of a community-based support structure
- Development of a territorial exchange system
- Development of a community-led participative project
- Establishment of a knowledge co-creation platform
- Development of a collaborative framework between local authorities and civil society.

3.1. Establishment of a participatory agenda setting system

A first governance framework lies in the establishment of a participatory agenda setting system. This framework has at its centre the aptitude to identify, build and make accept by local actors, through negotiation and deliberation, certain strategies and actions functional to the solution of the problems of territory, in various fields. This includes, in some cases, even the shared definition of important aspects of the scientific research agenda.

This governance framework was found in the Practices #27, #28, #29 and #30. The box provides some examples.

In the district of Murau (Austria) a broader process of participation was fostered, in order to kick-off, facilitate and coordinate the implementation of various projects for renewable energy and energy efficiency in the region, starting from identifying some shared priorities. Some steps of this process were:

- Establish a “guiding vision” for the region about energy
- Involvement of actors such as Politics/Government, Enterprises, Citizens/energy consumers, Media, R&D experts

Delimitation of scope, together with the avoidance of contentious issues which did not promise to yield consensual win-win solutions
 Build new heterogeneous actor-networks
 Elaborate socially robust and operational solutions that reflect some sort of 'public good', rather than 'partial interests'
 Making reference to storylines and specific ideas related to 'energy autarky' or 'self-reliance' that are very attractive to Austrian farmers.
 (Practice #27)

A "Dialogue Model" for health research agenda-setting process was tested in the Netherlands, and seems relevant more for the approach than for the strictly territorial dimension. The aim was to compose a health research agenda on burns, launch research covering the entire field and highlight priorities by involving all the relevant stakeholders. The "Dialogue Model" is based on the methodology of Responsive Evaluation and the Interactive Learning and Action (ILA) approach, which enables end-users to have a role in decision-making on innovation processes in various societal domains. The model is grounded in participatory and interactive approaches. The local stakeholders involved included 37 patients and relatives (parents and spouses), researchers and health professionals, as well as the Dutch Association of Burn Survivors and Association of Dutch Burn Centres. The Dialogue Model was applied, having 5 phases: Exploration; Consultation; Prioritisation of the topic and problems; Integration into a single broadly supported research agenda; Programming and implementation. Athena Institute (VU Amsterdam) worked as a facilitator of the whole process. (Practice #30)

3.2. Establishment of a community-based support structure

A second governance framework consists of the establishment of a community-based support structure to help actors who promote innovation and local development programs (for example, start-ups of young people). This framework foresees the activation of a great variety of local actors (from public authorities to individual citizens, from research bodies to companies), each of them offering its own specific support, of a material or immaterial nature, to the actors who carry out innovation and development programmes on a territorial basis.

Examples of such a governance framework have been found in Practices #1 and #12 (see box).

The Totnes REconomy project (United Kingdom) aimed at creating the conditions for new economic actors, relationships and models to emerge and thrive, through: catalysing a new entrepreneurial culture, mobilising local social and financial capital, building an 'enterprising ecosystem', weaving networks of 'new economy' organisations and activists. All this is based on the idea that anyone can be a successful entrepreneur with a supportive community behind them, including different kinds of actors (public, private, university, and ordinary people). The project succeeded in mobilising many entities and individuals in supporting new entrepreneurs, also through simple actions of moral and material support. Within this framework the REconomy Centre was created (as an incubator for start-up enterprises and community projects). A Local Entrepreneur Forum (LEF) was also created, to bring together people interested in starting businesses, local investors and business experts. Within the LEF, the so-called "Community of

Dragons” was established, supporting the new entrepreneurs through money and non-financial assets. (Practice #1)

Recently, the City of Malmö (Sweden) has worked to address major local societal challenges and to increase the sustainability of the city by supporting a diverse range of innovative projects initiated by the city, citizens, businesses, associations, and academia. The Malmö Innovation Platform is a network of government-business-university partners, led by the Environment Department of Malmö City, in close cooperation with Lund University, Malmö University, the Swedish University for Agricultural Sciences in Alnarp, Media Evolution, EoN (Utility Company) MKB (Housing construction), the administration of the adjacent Skåne Region, and another thirteen partners from industry. The platform brings together diverse actors, creates space for discussion on urban (re)development, and supports the creation and implementation of urban experiments, which aim to break away from the “business as usual” paradigm. Participation encompasses also residents and local organisations, together with schools, community groups, and housing associations. (Practice #12)

3.3. Development of a territorial exchange system

The third governance framework that has been identified concerns the development of a territorial exchange system, through which different local actors are able to offer and exchange goods, services and useful information with a view to territorial development.

This governance framework emerged from an examination of the #2 (see box) and #14 practices.

The Land Exchange (Bolsa de terras) project (Portugal) is based on putting abandoned land to good use, in a territory with high depopulation and aging population, with the purpose of giving opportunity to those with interest in farming to undertake a business for cultivation of small berries, contributing thereby to the natural vocation of the territory. The project establishes a policy network, creating stable links with different economic and social stakeholders and decision makers. A public bank/stock market of land was created, together with a support service for land exchange and entrepreneurial start-up, through the development of a regulatory and investment related framework. Support services for commercialisation and market placing of blueberries were provided. Training and research development for blueberries cultivation were also granted. (Practice #2)

3.4. Development of a community-led participative project

The fourth governance framework focuses on the development of a participatory community-led project, i.e., an initiative conceived, initiated and managed mainly by citizens’ organisations to cope with certain collective risks at the local level (from social exclusion to natural risks), with the progressive involvement of other types of social, public, private and research actors.



Examples of such governance framework have been found in Practices #15, #23, #25 and #26 (for some aspects, see the following box).

Hola Code (Mexico) is a particular mix of little firm and grassroots initiative. It aims at supporting the new generation of migrants arriving in Mexico, and taking advantage of their skills: refugees, and also young adults who were born in Mexico raised in the United States and are now returning. With the support of Hack Reactor (a software engineering Coding Bootcamp education program – San Francisco, US), the project helps to bring out the technological talent of migrants through a five-month program designed around the needs of the market and the needs of the students. A people-centred approach is adopted, to turn talented individuals into software engineers, drawing on both the growing technology sector of Mexico and the global demand for bilingual and bicultural engineers. At Hola Code, migrants also build community, create new social links and networks, and integrate into Mexico. (Practice #15)

A project in Midlothian (USA) aims at managing the risks related to frequent flooding. A residents' association (Floodlothian 5), with a strong women's leadership, was created and worked together with other local civic initiatives and the municipality. All these actors founded the RainReady Community, that began working in Midlothian in early 2015 in partnership with the U.S. Army Corps of Engineers. The Chicago Metropolitan Agency for Planning (CMAP) is working closely with village leaders and community members to determine the best mix of improvements for the community, which could include bike lanes, crosswalks, tree plantings, and pedestrian-scale lighting. (Practice #23)

3.5. Establishment of a knowledge co-creation platform

A fifth governance framework consists of the establishment of a knowledge co-creation platform. The implementation of this framework makes it possible to relate, in an easy and structured way, the actors carrying knowledge and innovative ideas in a given territory, to face local problems.

This governance framework has been identified, for example, in the Practices #9, #10 and #11 (see box).

The Pomeranian Science and Technology Park (PSTP) in Gdynia (Poland) concentrates multiple factors related to companies' development, facilitating running business activities, transfer and implementation of technology in a relatively small space, hosting and offering also social services and activities for the population. For instance, the park started working with the city's social sector, bringing design into disadvantaged neighbourhoods to renovate school playgrounds. Following this success, it turned its attention to redesigning prefabricated social housing estates. Other projects were also started as a result. (Practice #9)

The Innovation Platform Gothenburg (Sweden) is an arena where innovative solutions for sustainable urban development are tested and demonstrated. The project is related to the 11th sustainable development goal (Sustainable cities and communities), aimed at facing the new complex challenges for the cities in the current global framework. The MISTRA approach is applied, which bring different actors together to co-create knowledge and understanding that

promotes sustainable urban futures. The four basic principles for the projects carried out in Gothenburg are that they should be transdisciplinary, based on co-creation, have broad funding and involve international cooperation or anchoring. The overall justice perspective also means systematically addressing gender and intersectional issues. (Practice #10)

The Eindhoven Living Lab (Netherlands) is a collection of initiatives and also a philosophy and an approach to facilitate learning and collaboration in the development of the city. The main stakeholders of Eindhoven Living Lab are: City Administration (as the promoter), University, Brainport (as an accelerator for innovation), Philips (as a provider of light and health care technology), Hospital, Social Housing agency support neighbourhood development initiatives, Residents support local community initiatives. A centrality is attributed to the role of citizens, through co-decision, empowerment, transparency and openness, mutual learning. (Practice #11)

3.6. Development of a collaborative framework between local authorities and civil society

A sixth governance framework consists of the development of a collaborative framework between local authorities and civil society (or individual citizens). This can happen through a range, more or less formalised, of agreements and regulations at the local level, or even of ad hoc created bodies.

In the Practices #1, #17, #18, #19 and #22, examples of this governance framework have been identified (some are described in the following box).

The project Co-Bologna (Italy) provides a regulatory framework that outlines how municipality and citizens can co-manage public and private spaces and assets. CO-Bologna applies the method of “co-city protocol”, which is articulated in three main phases: mapping, experimenting and prototyping. The main pillar is the regulation on civic collaboration for the urban commons, empowering residents, and others actors (i.e., social innovators, local entrepreneurs, civil society organisations, and knowledge institutions willing to work in the general interest), to co-design and collaborate with the city to undertake the “care and regeneration” of the “urban commons” across the city. The “urban commons” are defined as tangible, intangible and digital goods that are recognised as important and “functional for the individual and collective well-being” (public spaces, urban green spaces, and abandoned buildings and other infrastructure). The regulation is called “Bologna Regulation on Collaboration between Citizens and the City for the Care and Regeneration of Urban Commons”. Municipal administrators and citizens share responsibility for taking care of or regenerating the urban commons by adhering to a series of principles such as mutual trust, publicity and transparency, responsibility, proportionality and civic autonomy. The regulation also serves as a sort of handbook for civic and public collaboration through the introduction of a new urban governance model. (Practice #17)

The project Bridging the gap in Cascais (Portugal), aimed at introducing a participatory budget (PB) mechanism, to bring citizens closer to decision-makers and promoting social inclusion, gender equality, and integration of all social groups. PB is a low-cost, legally binding methodology, with two cycles (decision and implementation), involving citizens from the presentation and discussion of ideas, through to the project’s opening. PB is deliberative and emerges as a decision-making

power based on and by people. The citizens have a continuous interaction in the whole process: Communication; Public Sessions; Technical analysis; Voting; Implementation of the projects. (Practice #19)

4. A matrix for the territorial policies

The territorial orientations and the governance frameworks can cross each other, to give life to a 6x6 matrix, which envisages different forms of structured management of the territory-making processes. As an example, we can try to fill the matrix, considering the 30 bottom-up governance innovation practices. The boxes have been filled with a cross where at least one of the 30 practices, as it seems *prima facie*, corresponds to the intersection of the corresponding territorial guidelines and governance frameworks. Obviously, this matrix should not be considered as the result of an in-depth analysis, but as a not systematic example-type exercise.

Territorial policies

Governance frameworks Territorial orientations	Participative agenda setting system	Community based support structure	Territorial based exchange system	Community-led participative project	Knowledge co-creation platform	Collaborative framework between local authorities and civil society
Re-rooting economic and social activities		✓	✓			
Re-shaping territorial infrastructure	✓	✓				
Establishing a new local regulatory framework			✓			✓
Empowering territorial actors				✓	✓	
Strengthening local decision making	✓					✓
Territorial risk management				✓		✓

5. Some policy tips

After presenting the main features of the policies that can give orientation and stabilise the territorial-making processes, we present now some methodological elements to approach, start, implement and support in several ways the mentioned policies.

These methodological elements are presented here in form of “policy tips”. In fact, they are examples of specific ways of managing the policies illustrated in the previous pages, which appear to be recurrent within the governance innovation practices examined. They are therefore “available” tools for local actors who promote or coordinate initiatives to orient and stabilise the processes of the territory-making, and which can therefore be used to promote and support the territorial RRI.

These “policy tips” are not specifically related to particular policies, and therefore are to be considered cross-cutting. They are presented here as a sort of checklist to keep in mind when designing and planning experiments or interventions in this field. While some have a “cognitive” component (related to knowledge, interpretation, vision, etc.), others have a more operational component (related to resources, powers, organisation, regulation, etc.). The implementation of both kind of methodological elements, as can be guessed, is always linked to the application of sophisticated knowledge systems and skills to the solution of challenges in the territory, and requires the intervention of personnel from the world of research and innovation in various fields, from that of social sciences and education to that of economics, engineering, geology, health and others.

Below is a list of the methodological elements identified within the considered practices, conventionally divided, broadly, into “cognitive” and “operational” policy tips. For each tip the title and a brief description are given, also indicating examples of practices in which it was found.

Policy tips – cognitive aspects

Identifying a shared vision on local priorities

To govern a process of territory-making at the local level, it is indispensable identifying a shared vision on local priorities among all the actors involved, based on an examination of the challenges existing on the territory. This shared vision can cover the main strategies to be adopted, as well as the main problems to be addressed.

(see for example the Practices #1, #2, #12, #21)

Leveraging on territorial cultural heritage

Rediscovering and enhancing the cultural heritage of a territory is a crucial element for the territory-making. In this case, cultural heritage is to be understood in a broad sense, including history, local knowledge, productive activities and traditional crops, etc.

(see for example the Practices #2, #5, #7, #13)

Leveraging on territorial human resources

Each territory has its own human capital, which risks dispersing or fleeing, and which must be identified and mobilised for local development. At the same time, such capital can be enriched with new contributions, for example by virtue of the various kinds of migratory phenomena (including those related to the return in the territory of expatriates or their descendants).

(see for example the Practices #1, #2, #15, #16, #25, #26)

Putting gender perspective in designing, implementing, disseminating and evaluating the activities

In the governance of the territory-making, adopting a gender perspective represents a great opportunity and wealth. This perspective can be implemented at various levels of activity, from that of vision and analysis of problems to that of operations, and therefore in designing, implementing, disseminating and evaluating these activities.

(see for example the Practices #10, #19, #25, #26, #28)

Adopting a gradual/exploratory/experimental strategy

A recurring feature of the governance innovation practices examined is the refusal of a top-down approach and the rejection of the application to the local reality of already defined and closed models. What emerges as particularly indicated is the option of a gradual, exploratory and experimental strategy, in which the action continuously alternates with analysis and strategic reflection.

(see for example the Practices #2, #8, #17, #24, #26)

Leveraging on experts and researchers as facilitators

In the practices examined, the presence of experts and researchers as facilitators of the territory-making processes is particularly evident. This presence can be constant, or instead accompany some crucial phases of the programs and activities carried out, for

example: engineers for environmental impact design and analysis activities, consultants and trainers to manage participation mechanisms, etc.

(see for example the Practices #7, #18, #20, #21, #23, #27, #30)

Accompanying the action with social research

With respect to the previous approach, a particular role is related to social sciences, which are often involved in accompanying the actions of the territory-making for research activities, e.g., on the dynamics of power and participation, on the culture and on the orientation of the citizens, on gender aspects, etc.

(see for example the Practices #8, #18, #27, #28)

Orienting action through anticipatory awareness exercise

An approach of great interest, found in various practices examined, is that of orienting the programs through forms of anticipatory awareness exercise, in the form of reflection and preventive consultation of stakeholders, preliminary research, elaboration of scenarios, etc.

(see for example the Practices #7, #27, #29, #30)

Keeping tracks, organising and representing the knowledge produced

Guiding the territory-making processes, which have often a strong scientific and technological component, the aspect of knowledge management is fundamental, which consists in keeping tracks, organising and representing the knowledge produced locally within the framework of the action done (through archives, data banks, reports, etc.).

(see for example the Practices #2, #13, #14, #17, #18)

Representing and spreading success stories

The ability to elaborate and disseminate an adequate public representation of the activities carried out, of the underlying vision, of their successful impacts is a fundamental aspect of almost all the examined practices, and is an important component at the base of their notoriety and availability in the global archives, especially those related to the Internet.

(see for example the Practices #1, #7, #13, #18, #19, #20, #21, #22, #26)

Policy tips – operational aspects

Fostering a participative decision making

It is important to foster a participative decision making, ensuring a constant interaction and consultation among local actors. To this end, a mix between forms of direct consultation, in presence (e.g., assemblies, meetings and work tables) and forms of online consultation on a large scale (as happens, for example in cases of participatory budgeting) is particularly indicated.

(see for example the Practices #3, #4, #18, #19, #30)

Leveraging on both formal and informal leadership and authorities

Especially in cases where it is necessary to operate in small territorial areas (e.g., neighbourhoods or rural areas), it is essential to leveraging on both formal leadership and authorities that are present on the ground and informal ones (for example, intellectuals, people bearer of historical knowledge, people recognised as authoritative or competent, religious leaders, etc.).

(see for example the Practices #7, #13, #21, #23)

Relying on personal and economic commitment of involved actors

The governance of territory-making has among its recurring features the personal and economic commitment of the involved actors at local level who have special resources and means, or even the availability of skills and time to offer.

(see for example the Practices #1, #3, #4, #5, #7, #9, #14, #25, #27)

Taking into consideration the needs of conciliation of family life and participation

In the conception and implementation of participatory and collaborative mechanisms between different actors of the territory, it is fundamental (also through the use of tools linked to the Internet) to take into consideration the needs of reconciliation between family life and active citizenship.

(see for example the Practice #18)

Leveraging on territorial natural and infrastructural resources

An asset for the territory-making processes is often represented by the leveraging on territorial natural and infrastructural resources, for example, particular agricultural vocations, or meteorological characteristics such as the presence of wind for programs related to alternative energies.

(see for example the Practices #2, #3, #4, #5, #6, #7)

Adopting transparency in decision making

At times, in the experiences that involve a stakeholder participation in local development programs, the risk is that of a loss of transparency in some decision-making steps. In

several examined practices, this risk is managed adopting a particular attention to the transparency and publicity of information related to decision making.

(see for example the Practices #7, #18, #19)

Monitoring and evaluating the ongoing actions

Another approach, certainly not specific to the practices linked to the territory-making, but obviously fundamental, is that linked to monitoring and evaluating the ongoing actions. In the case of the examined practices, this approach is the expression of the attempt to ensure a constant observation of the progress of the changes activated and managed by the promoters of these practices and of the other actors involved.

(see for example the Practices #4, #8, #12, #18, #21, #22, #23, #25, #30)

Creating links with national and international experiences and policies

An important approach that can be detected in many examined practices is that of creating links with national and international experiences and policies. This approach allows a substantial consolidation of the programs implemented, their greater visibility and above all the putting into circulation of useful theories, methods and experiences.

(see for example the Practices #2, #7, #10, #11, #12, #13, #17, #22, #25, #26)

CHAPTER FIVE

THINKING TERRITORIAL RRI

In this chapter we will use the information collected in the mapping process – especially those coming from the Inventory of RRI governance innovations (Zaharis et al., 2019) – to explore how the RRI approach can be developed up to encompass the territorial dimension in view of the implementation of the experiments. Rather than developing a systemic articulation of Territorial RRI – which goes beyond the scope of this map – the chapter will provide some insights that may be useful for developing the planned experiments or other pilot projects in this field. Three different sets of ideas will be provided: for interpreting Territorial RRI (Par. 1.); for putting Territorial RRI into practice (approaches) (Par. 2.); for designing Territorial RRI experiments or projects (Par. 3.).

1. Interpreting Territorial RRI

1.1. The pivotal role of R&I in territory-making

In the TeRRItoria view, territorial RRI is a framework for shaping research and innovation to support territory-making processes. A first consideration in this regard concerns the knowledge connected with territory-making. As we have seen territory-making policies are oriented both at changing the territory and at developing new governance frameworks. The presence in the territory of relationship within the community and between the community and the environment (both natural and built) implies that a territorial change is a specific kind of socio-technical innovation affecting different spheres (the material sphere, the social sphere and the cognitive and emotional sphere) generally involving different branches of knowledge and a high rate of multidisciplinary. In this respect, it is evident how research, science and technology play a pivotal role in this process. Without a strong input in research and innovation it would be impossible to elaborate new socio-technical responses to the challenges connected with de-territorialisation processes.

1.2. A territorial alignment of research and innovation

A second consideration is about what kind of research should be undertaken for supporting the above mentioned territorial processes. As we have seen, territory-making is not mainly oriented to increase the territorial competitiveness on the market, but to strengthen the ties between a community and the place where it is settled. This means

that territory-making action should deal with those phenomena of social fragmentation and social/economic exclusion that generally come along with de-territorialisation dynamics. For this reason, the research and innovation processes developed through territory-making should align contents, agenda and methods to the different societal needs present at the local level, so as to avoid that the innovation carried out may create new conflicts or new forms of exclusion.

1.3. Involvement of R&I actors in territory-making dynamics

In Chapter Three, we have seen that territory-making is a process of socio-technical change recognizable by at least three recurring features: the development of a territorial awareness, the mobilisation of territorial actors, and the production of a territorial change. A third consideration concerns the involvement of R&I actors in these dynamics.

Firstly, R&I actors should contribute to develop a territorial awareness about risks and stakes in different ways, especially by providing reliable technological, social and economic visions for developing a new interpretation of the territory.

Secondly, in territory-making a wide set of actors are mobilised. Among them there are inevitably the R&I actors. As for the other players involved, territory-making implies for R&I actors to commit their time and resources for participating – together with others actors – to a territorial project.

Thirdly, as highlighted in Chapter Three, one of the features of territory-making is the establishment of new configuration of actors and new governance relations among territorial actors. Taking part to these changes means, for R&I actors, to be open to modify to a certain extent their procedures, rules, mission and culture.

1.4. Territorial response-ability of research and innovation

All the considerations done so far suggest that the traditional understanding of responsibility (= having a duty to deal with something or someone) does not fit well with the complex and highly relational dynamics characterising territory-making. Indeed, the common background of the three features described above is the participatory nature of the proposed visions, actions and changes. It is difficult for the involved actors to identify a set of stable spheres of exclusive responsibility. In this respect, the concept of response-ability should be adopted. As stressed in Chapter Two, response-ability focuses not on “being responsible” for something or someone but on how to respond, and be open to different kinds of responses which are not pre-defined once and for all. Response-ability

differs from responsibility since the former refers to an imperative to take charge of something or someone, while the latter refers to an ability to respond to others. For its dynamic and relational feature, the concept of response-ability seems more fitted to describe the role of the actors – included those of research and innovation – participating in territory-making dynamics.

1.5. Institutional RRI and Territorial RRI

This led us to identify commonalities and differences between “Institutional RRI” and “Territorial RRI”. Before looking at the differences, it is important to stress that the two types of RRI have the same core message/mission, i.e., the promotion of a better alignment between science and society. The table below tentatively summarises some of the possible differences on the way in which this common mission is interpreted in the two types of RRI.

Table 1 – Main differences between Institutional RRI and Territorial RRI

	Institutional RRI	Territorial RRI
Focus	Governance of R&I institution	Governance of territorial-making processes
Locus of control	R&I institutions themselves (RPFO, Industries)	Distributed between different actors engaged with socio-technical changes addressing the territory
Expected change	Needs and expectations of other societal actors are embedded in R&I agenda, methods and outputs	Continuous establishment of new mutually transformative relationships at the territorial level implying knowledge and innovation
Logic of responsibility	Broadening of R&I actors’ responsibility towards societal actors/sectors	Cultivating R&I actors’ response-ability, i.e., develop with other actors/sectors responses to the territorial challenges

A *first* difference relates to their focus. Institutional RRI is aimed at promoting new forms of governance of R&I institutions. This means that the promoted alignment between science and society consists of new functions/structures/rules within the R&I organisations. Territorial RRI is focused on developing territorial-making processes (or contributing to them). In the latter case, the alignment of the actors is based on a common territorial stake.

Secondly, as for the “locus of control”, institutional RRI is supposed to be an action promoted and controlled by the R&I institutions themselves. Conversely, Territorial RRI

does not depend only on R&I actors, but it is part of a broad and multi-agent territorial project. In this sense, the locus of control can be considered shared with the other territorial actors involved.

Thirdly, the two RRI versions differ in the type of change they activate. While institutional RRI aims at embedding the views of other societal actors in the R&I agenda methods and outputs, Territorial RRI opens up to a new horizon of action (composed of agenda, methods and outputs) related to the territory-making process. In the latter, changes within R&I institutions are not self-managed but are somehow the output of the re-territorialisation process and the mutually transformative relationship it implies.

Finally, as for the logic of responsibility, institutional RRI can be interpreted as an attempt to broaden the sphere of responsibility of research actors. Through RRI, research actors are requested to be responsible for taking care of a broader set of tasks ranging from innovation processes to science education. As we have seen, Territorial RRI can be interpreted as cultivating the territorial response-ability of research, intended as the capacity of taking part to territory-making processes and to develop – together with other actors – adequate responses.

1.6. Working hypothesis on Territorial RRI

Putting together the four elements presented, it is possible to draft the following working hypothesis on territorial RRI.

Territorial RRI can be understood as the response-ability of R&I actors to the challenges of de/re-territorialisation. Through Territorial RRI, R&I actors takes part – they themselves as territorial actors and together with others – to territory-making, an ongoing and open-ended process of establishing and cultivating new transformative relationship for territorial governance. As this process is a social and technological innovation, territorial RRI is a key element of the process as it allows the access to research, science and technology.

2. Putting Territorial RRI into practice (possible approaches)

2.1. Exploring and exploiting RRI related knowledge and practices

As it has been stated before, notwithstanding their differences, institutional RRI and territorial RRI are based on the same idea: promoting a better alignment of R&I and other

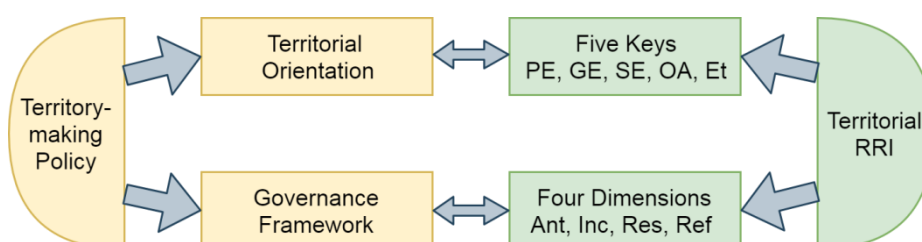
social aspects, needs and sectors. In this paragraph we will explore how the knowledge produced within RRI policy and research framework can be translated and adapted to territorial RRI. The knowledge produced so far, a portion of which has been mapped with the RRI governance innovation inventory (Zaharis et al., 2019), can be useful in the development of a more detailed idea of the role that territorial RRI may have in the re-territorialisation processes. In this respect, two elements of the body of knowledge related to RRI will be considered: the *five keys* and the *four dimensions* of RRI (see Chapter Two Par. 3.).

RRI keys. As we have seen in Chapter Two, *five RRI keys* have been developed in Institutional RRI" for opening R&I institutions to society: Public Engagement, Gender Equality, Science Education, Open Access and Ethics. By analogy, such keys may be used to open research and innovation to the territory-making process. In this respect the *Territorial RRI keys* may be imagined as a way to enhance the "territorial orientation" component of territory-making.

RRI dimensions. RRI has been interpreted as a way of strengthening the governance of scientific processes under conditions of uncertainty. In this regard four dimensions of governance have been identified as characterising the RRI approach: anticipation, inclusiveness, responsiveness and reflexivity. These dimensions have been related so far mainly to R&I itself, e.g.: anticipating the impacts of a research or a technology; including other stakeholders in the definition of research agenda, methods or contents; preventing and managing the risks connected with the development of new discoveries or technologies; allowing R&I actors to reflect about their own activities and to understand the limits of the knowledge produced. In the case of Territorial RRI such dimensions may be interpreted as a way of using R&I for strengthening the territory-making processes. In this sense, RRI dimensions can be directly connected with the second component of territory-making politics, i.e., governance framework.

The picture below summarises the way in which the five keys and the four dimensions of RRI could be applied to territory-making policies.

Picture 1 – Keys and dimensions of RRI related to territory-making policy components



The picture above, together with the Table 1 showing the differences between institutional RRI and territorial RRI, may be used to develop RRI practices identified in the mapping process into possible approaches to Territorial RRI.

To favour this process, in the following paragraphs we will provide some examples, drawn out of the Inventory of RRI governance innovation, about how the RRI keys and the RRI dimensions can be used in the context of Territorial RRI.

2.2. Public Engagement

Public Engagement (PE) has been understood so far as the development of new means of systematically engaging citizens and other stakeholders in research and innovation activities such as agenda setting, foresight and public outreach. In territorial RRI, where the focus is on a common territorial stake rather than as an engagement with science, is possible to interpret this key as a co-operation between R&I actors and other key players, including individual citizens. In this regard, PE may be re-thought in terms of *territory-based co-creation*. In fact, for achieving the objectives of *territorial orientation* of the policy (e.g., re-shaping infrastructure, re-rooting social and economic activities, etc.) scientific knowledge should be combined with the knowledge of the territory distributed among people and organisations acting in the territorial milieu. This will be a way to bridge possible gaps and unexpected effects of intervention based on science and technology that do not take into account the views and needs of local community and the territory. In this sense *territory-based co-creation* is a key to make available R&I for the territory-making process as it makes possible to strengthen the ties between the community and the territory in-the-making.

The following approaches have been identified as relevant for *territorial knowledge co-creation* in the inventory of RRI governance innovation practices.

Participatory design (Co-design)	
Description	Participatory design is generally based on a consultation with individuals and/or community organisations that is followed by an interactive design process engaging users of the developed technologies and devices.
Examples	A “co-creation navigator” has been developed in BigPicnic project (◊34). This tool have supported two other projects in co-design activity. Through co-design, the Mobility Urban Values (MUV) project will develop a set of innovation and solution for promoting healthy mobility choices in six European neighbourhoods. Cities-4-People uses participatory design approach to develop innovative mobility solutions.

Potential application to territorial RRI	This approach can be potentially applied to design any territorial policy, so as to combine territorial knowledge with scientific knowledge since the beginning. Co-design may guarantee to anchor the intervention on the territory (e.g., re-shaping territorial infrastructure) to the local needs.
Related tools	Co-creation navigator (T16 ³)

Science-shops	
Description	Science Shops are small entities that carry out scientific research in a wide range of disciplines and sectors to respond to civil society's needs for expertise and knowledge.
Examples	Within the EnRICH project (◊B43), the incorporation of RRI in higher education curricula was supported and facilitated by Science Shops (and other similar community knowledge exchange mechanisms). In general terms, Science Shops promote the RRI key of Public Engagement and manage relationships with CSOs and academic staff. During the EnRICH Project, new Science Shops were set-up and mentored, while already established ones were supported.
Potential application to territorial RRI	Science shops can be very helpful in a territory-making action as they can support the identification of territorial needs and translate them in terms of scientific and technological research and/or innovation. Is possible to hypothesise that the presence of science shops can be particularly helpful for facilitating the initial involvement of R&I players in the process.
Related tools	Living Knowledge Toolbox (T15)

Living Lab	
Description	A Living Lab is a real test bed and an experimentation environment where users and producers can co-create innovations. Its main objective is to create new products, services and appropriate infrastructure to the real needs of society. These processes involve both public and private groups.
Examples	Within the framework of FoTTRIS project, six transition experiments were carried out in five countries for putting the concept of co-RRI into practice (◊B17). One of the experiments was related to the area of Madonie, in the centre of Northern Sicily. An 'energy transition arena' in the Madonie mountains was to be promoted, within the drafting process of the National Strategy of Inner Areas (SNAI). As a result of the transition experiment the Madonie Living Lab project concept was created, and was seen as a catalyser of innovative sustainable processes (e.g., energy services, technologies through an interaction with local authorities, local companies, professionals, trainers, technology provider etc.).

³ The Tools, presented in Chapter Six, are coded with the letter "T" and their reference number.

Potential application to territorial RRI	Living labs can be particularly useful for the development of products, services or infrastructure – basically for all the territorial orientation – in the framework of the territory-making policy. In the case of Territorial RRI, the overall societal needs to be addressed consist of the territorial stake at the basis of the territory-making policy.
Related tools	How to Set Up a Competence Cell (T05)

Citizen science	
Description	Citizen Science is the inclusion of lay persons in scientific research by asking questions and/or collecting or analysing data as part of a scientific project. Citizen Science projects are carried out for research that affords a great number of spatially dispersed contributions (such as for weather or environmental observations), or involves a great amount of work that does not necessarily involve expert knowledge.
Examples	Within a practice quote in the previous chapters (#30), a Dialogue Model was utilised in the field of health research about burns. The project aimed at creating an equal partnership among patients (burn survivors) and other stakeholders (e.g., health care professionals and researchers) during the agenda-setting process, to improve the relevance of the research.
Potential application to territorial RRI	Citizen science approach seems appropriate for developing a knowledge-based territory-making policy. Since the intimate knowledge of the territory is generally distributed among citizens, citizen science represents therefore a good way to coordinate and put scientific and “indigenous” knowledge under the same framework.
Related tools	Engage 2020 Action Catalogue (T11)

2.3. Gender Equality

Under this key, a lot of practices have been developed on the promotion of gender equality measures and plans in R&I related institutions. Moreover, a set of actions aimed at promoting gender in contents and gendered innovation have been developed so far. This experience is valuable in the context of territory-making policies. A re-shaping of the territorial dimension that does not take into account gender differences – as well as other diversities (e.g., ethnicity, age, religion, etc.) – present in the territorial milieu risks to be unable to address some of the main problems faced at the local level, to alienate a good portion of the population and to create new forms of inequality or discrimination. In the development of Territorial RRI, this key could be interpreted as using research and innovation-related knowledge to feed a *territorial diversity awareness*, meaning that the territory-making policies should take into account gender, as well as other types of diversity, in the production of new knowledge, so to orient in a more inclusive way the development of social and technological innovation promoted.

The following approaches have been identified as relevant for *territorial diversity awareness* in the inventory of RRI governance innovation practices.

Participatory Gender Audit	
Description	A participatory gender audit (PGA) is a participatory methodology to promote organisational learning at the on how to practically and effectively mainstream gender. PGA considers whether internal practices and systems from a gender perspective and identify strengths and weaknesses in promoting gender equality. It establishes a baseline; identifies critical gaps and challenges; and recommends ways of addressing them, suggesting possible improvements and innovations.
Examples	Within the context of the EQUAL-IST project (◊02), 6 RPOs proceeded to implement Participatory Gender Audits at their organisations. The gender audits were conducted to get a complete picture based on existing available data of the internal situation of gender (in)equality in each IST/ICT Department Faculty, using both quantitative and qualitative approaches.
Potential application to territorial RRI	This approach can be used in support of the design of the territory-making policy, so as to identify the main gender gap existing in the territorial aspect that is in-the-making. For example, if the territorial orientation is "re-shaping territorial infrastructure" (e.g., streets) it's possible to assess with this methodology points of strength and weakness related to gender in the current system so as to address the pending issues with the territory-making policy under development.
Related tools	ILO Manual For Gender Audit Facilitators (T08)

Gender Equality Plan (GEP)	
Description	Gender Equality Plan can be considered as a set of actions aiming at: 1. Conducting impact assessment / audits of procedures and practices to identify gender bias; 2. Identifying and implementing innovative strategies to correct any bias; 3. Setting targets and monitoring progress via indicators.
Examples	Within the EQUAL-IST project 6 GEPs – Gender Equality Plans were developed in RPOs IST-ICT institutions, after carrying out extensive research activities, in order to: enhance gender equality in the departments; influence IST-ICT institutions outside the consortium at a later stage; support ERA objectives in relation to gender equality in research (long-term objective) (◊04 - See also ◊10, ◊39).

Potential application to territorial RRI	The GEP is a tool that consider many different aspects related to gender equality under the same plan. At the territorial level GEP should not be considered as plan for assessing and fostering gender equality for all the territory (this goes beyond the scope of Territorial RRI). Rather is possible to think that Territory-making Policies can accompanied by a Gender Equality Plan that can implement actions for gender equality all along the policy lifespan (from inception to completion). In this way, a Territorial Diversity Awareness should be raised not only with reference to the final outcomes (e.g., new services, or infrastructures), but also in the policy development (e.g., equality in project staff, public events, policy representations, etc).
Related tools	Structural Transformation to Achieve Gender Equality in Science (T04) Gender Equality in Academia and Research (GEAR) toolbox (T14)

Gender sensitive research & innovation	
Description	Gender-sensitive research takes into account the differences between men and women in all aspects of the research, from an initial idea, formulating research questions, objectives and methodologies to the outcomes and presentation of results https://eige.europa.eu
Examples	Within the framework of STAGES project, the development of action plans for introducing gender-aware management at all levels in five participating organisations was foreseen. Among others, actions on developing gender-disaggregated statistics and gender-sensitive indicators, gendering the content of master and PhD courses and gendering the contents and methods of scientific research were implemented (◊10).
Potential application to territorial RRI	The tools and methods developed in gender sensitive research & innovation can be used for inserting the needs and the perspective of women – as well as those of other diversities – in the territorial orientations of the policy (e.g., Re-rooting economic and social activities; Territorial risk management, etc.).
Related tools	Yellow Window: Gender in EU funded research (T13)

Gender impact assessment	
Description	Gender impact assessment has been defined as an ex ante evaluation, analysis or assessment of a law, policy or programme that makes it possible to identify, in a preventative way, the likelihood of a given decision having negative consequences for the state of equality between women and men.

Examples	The project GENERA brought together 13 important research organisations and higher education institutes with the scientific focus on physics in Europe to help foster gender equality through customised and evidence-based Gender Equality Plans – GEPs (defined as policy tools for furthering gender equality within an organisation). The GEPs aimed to: conduct impact assessment/audits of procedures and practices to identify gender bias; implement innovative strategies to correct any bias; Set targets and monitor progress via indicators. For the assessment of long term benefits and impacts a monitoring tool was developed, which allowed each organization to measure its progress towards structural and organizational change. (◊40).
Potential application to territorial RRI	Gender impact assessment methodology can be adapted to territorial dimension and used for assessing the possible impact in respect to gender (or other diversities, such as age) of the territory-making policies. For example, the re-shaping of territorial infrastructures may have different impacts on man and women given their behavioural, social and physical differences.
Related tools	Gender Equality in Academia and Research (GEAR) toolbox (T14)

2.4. Science Education

In the framework of institutional RRI, Science Education is aimed at cultivating new generations of scientists (attracting them, avoiding the loss of talents, taking care of science students, etc.). Also in this case, the focus of the original message is on science itself. In the context of territory-making a different use of science education can be imagined. Science education activities should be focused on cultivating a scientific culture tailored on the territorial challenges. As we have seen before, territory-making implies the mobilisation of a broad set of actors, belonging to different cultural, social and professional backgrounds, all of them actively involved in a processes of social and technical transformation. In this respect, the development of a common scientific culture⁴ – shared by all the people involved and focused on the knowledge used in the process of transformation (e.g., water management, mobility, etc.) – can be an important key for connecting R&I to territorial dimension, to allow a broader and more equal participation of the people involved, and to create a common “cultural” background among them. Despite the different focus, the approaches developed for science education so far can be very useful for imagining Territorial RRI approaches related to cultivating a *territory-based scientific culture*.

⁴ Someone refers to this concept also as “Scientific Citizenship” or in specific sectors “Energy Citizenship” (Ryghaug et al., 2018) or “Biological Citizenship” (Árnason, 2013).

Science café	
Description	Science cafés offer a place for information and discussion for all who are interested in science and its broader implications for society. The aim of science cafes is to encourage citizens to dialogue with scientist, by bringing science into the everyday life of citizens. It is a way of democratising science by engaging citizens in the making and interpreting of science.
Examples	Within the context of Big Picnic project (◇33), science cafés were run in all Partner countries to engage the public with a dialogue on the topic of food security, involving a broad target (people living in deprived areas, African diaspora people, teenagers and adults, policy makers, researchers, etc.).
Potential application to territorial RRI	Science café may be an important approach for cultivating a territorial scientific culture. In the case of territorial RRI, it's possible to imagine that science café – rather than promoting an overall scientific literacy – should be focused on those aspects more connected with the territorial stake. For example in a territory-making policy oriented to Territorial risk management, science café can provide elements about a broad set of related scientific issues.
Related tools	How to run science cafés (T17)

Science demonstrations	
Description	Scientific demonstration are procedures carried out for the purposes of demonstrating scientific principles, carried out in schools and universities, and sometimes in public demonstrations in popular science lectures and TV programs aimed at the general public.
Examples	Within the framework of CREATION project, Demonstrators were developed, and were detailed examples of activities introducing learners to the world of science. The Demonstrators were developed so as to: introduce learners to various aspects of the scientific world, and function as guidelines for anyone who would wish to implement the CREATIONS features into their own setting; facilitate the development of the CREATIONS pedagogical framework (◇06).
Potential application to territorial RRI	Is possible to imagine that this method can be used for demonstrating scientific dynamics or innovations directly related to the territory-making policy, rather than for showing general scientific principles. Some examples can be: demonstration of dynamics/effects of natural/human risks that affects the territory; demonstration of new technology to be adopted at the territorial level; social behaviours simulations, etc. This approach can be useful to raise the attention on the knowledge-bases of the promoted territorial policy, thus contributing to create a common scientific culture.
Related tools	EnRRIch tools for educators (T07)

Outreach exhibition	
Description	Outreach exhibitions are flexible approaches to involve a wide range of targets around scientific topics, through stands and panels, and also workshops and other activities with a given local community.
Examples	Among the partners within the Big Picnic project, 15 of them – which are Botanic Gardens – hosted low-cost, co-creation sessions on a food security topic by using the metaphor of a picnic basket. The exhibitions included information, activities and participatory events that engaged a broad range of target audiences (adults, schoolchildren and families). From these sessions BigPicnic exhibitions content was developed. (◇32)
Potential application to territorial RRI	Outreach exhibition in Territorial RRI approach can be very useful not for educating citizens and cultivating a local scientific literacy, but also to give public visibility to science behind the related territory-making process. In this sense, through outreach exhibition is possible to think also at a common scientific culture as a factor of social cohesion and local identity. Also for this reason, outreach exhibition can be very useful also for giving visibility to the results achieved.
Related tools	PE2020 Toolkit on Public Engagement With Science (T10) ENGAGE2020 Action Catalogue (T11)

2.5. Open Access

Open access refers to making research findings available free of charge for readers. In this regard, open access aims to improve knowledge circulation and innovation. In Territorial RRI, Open Access may play an important role in at least two different levels. At a first level, in a territory-making framework open access may respond to a need of transparency within the territorial milieu. Indeed, in the case of Territorial RRI, knowledge produced is useful for orienting the complex negotiation mechanisms needed for territory-making, and consequently it is pivotal for determining public choices and decisions. Given the complex participatory mechanisms characterising this process, research data and results should be made accessible to all the actors involved. At a second level, open access can be interpreted as a means to make accessible beyond the local community the knowledge developed. In fact, territory-making practices – if an adequate attention is paid to this key – can inspire others and also scale up to regional and national level.

For guaranteeing an *open access within and beyond the territory*, a set of useful approaches have been selected among those present in the inventory of RRI governance innovation.

OA Policy guidelines	
Description	Guidelines, that in some cases are drafted, identify, promote and disseminate good practice solutions for the sharing of scientific data across the open access and data dissemination landscape.
Examples	RECODE project provides a space for European stakeholders in the open access and data dissemination and preservation sector to work together and provides recommendations for a policy framework to support open access to European research data. Some policy guidelines/recommendations were published, targeted key stakeholders in promoting open access: research funders; data managers; research institutions; and publishers (◇23).
Potential application to territorial RRI	The development of guidelines for making data and research results available during the implementation of territory-making policies can be imagined as a tool for creating trust in the action promoted, through transparency and accountability.
Related tools	RECODE Policy guidelines for open access and data dissemination and prevention (T06)

2.6. Ethics and research integrity

This RRI key includes two aspects. The first concerns the ethical limits of (and related conditions for) R&I, touching issues like: the involvement of children, the use of human embryonic stem cells, privacy and data protection, research on animals, etc. The second meaning refers to research integrity, touching issues like falsification, plagiarism or other forms of misconduct related to the production and use of scientific knowledge. Both aspects could be applied also to Territorial RRI. For what concerns research ethics, in territorial RRI the emphasis could be placed in the contextualisation of the ethical standards in the concerned territory. On the basis of its history, rules, conventions, natural environment, cultural heritage, etc., territory-making process may raise ethical issues specific to the place where the action is taking place. So Territorial RRI should try to identify ethical principles and codes tailored on the local context. As far as research integrity is concerned, this aspect plays a pivotal role also in the case of Territorial RRI. It is possible that the researchers involved in territory-making policies, may be exposed to sensible situations, since they participate in the double role of researchers and involved citizen in a process where different interests can be at stake.



Code of conduct	
Description	A code of conduct usually outlines the ethical principles that govern decisions and behavior at a given organisation. It give general outlines of how staff member should behave, and guidance for handling specific issues like research ethics, harassment, safety, conflicts of interest, etc.
Examples	Within the EQUAL-IST project a code of conduct for diversity and gender equality was foreseen by a Portuguese university. It was among the approaches aimed at achieve the periodic integration of considerations of diversity and gender equality in decision-making processes at all levels of University management, and in particular in the field of HR management (◇04).
Potential application to territorial RRI	In the case of territorial RRI, we can imagine that code of conducts tailored on the territorial context may be useful tools for keeping research and innovation anchored to local values.
Related tools	-

2.7. The four RRI dimensions

The four dimensions of RRI can be considered as a way to support the governance of research and innovation organisation in a context characterised by uncertainty and complexity. This definition can be easily applied to territory-making instead of the scientific enterprise. For each of these four dimensions is possible to imagine a specific role for R&I. As for *anticipation*, R&I may provide methods, evidences and interpretations of the risks run at the territorial level as well as of the impacts of possible solutions developed. *Inclusiveness* may be interpreted in different ways. Firstly, it can be interpreted as the need of R&I actors to be included in the territory-making process. Secondly, it also shows the need for including in this process a broad set of formal and informal actors, since each of them bears a bit of territorial intimate knowledge. Finally, *inclusiveness* may be extended to non-material aspects of the territory (places, cultural heritage, ecosystems, etc.) that should be considered and included in territory-making. *Responsiveness* may be interpreted as the capacity to manage the reactions and impacts to the change promoted in territory-making process. As for *reflexivity*, it obviously permeates all the aspects of the territorial dynamic.

Some approaches concerning the RRI dimensions have been identified and selected for their possible applicability at the territorial level.

Scenario building (Anticipation)	
Description	Scenario building is a strategic planning and decision-making process that involves the construction of methodologically researched future-oriented scenarios.
Examples	<p>Within INHERIT project a practice was developed about the creation of future scenarios about the relations between health and environment. The scenario building process had some steps: setting of the scenarios; identifying and analysing the drivers; ranking by perceived impact and unexpected uncertainties (◇20).</p> <p>A Delphi Study of RRI in industry was carried out within the RESPONSIBLE INDUSTRY project, in order to gather opinions and achieve a high degree of convergence on selected themes of exploratory, predictive and even normative nature (◇25).</p>
Related tools	<p>Co-creation navigator (T16)</p> <p>INHERIT Reaching the Triple Win (Chapter Two) (T25)</p> <p>Living Knowledge Toolbox (T15)</p>

Vision co-creation (Anticipation)	
Description	Vision co-creation is a process of defining relevant and forward-looking research and innovation agendas, involving a broad range of actors at any level.
Examples	<p>The project PLACES facilitated a three-way conversation between science, policy makers and society in Europe. It resulted in a vision for science policy at city level and hundreds of interconnected local networks (quoted in ◇33). https://www.ecsite.eu/activities-and-services/resources/places-declaration-european-city-scientific-culture</p>
Related tools	Co-creation navigator (T16)

Agenda setting (Inclusiveness)	
Description	Agenda setting aims to define the list of the most important issues to decide on, in a given area and in a given time. If an issue is particularly relevant, it is essential to ensure that the agenda is decided by a large number of actors.

Examples	<p>The project VOICES was a ground-breaking consultation, using the opinions of people across the EU to shape the agenda of European research. 1,000 citizens participated in focus groups run by Ecsite members, expressing their hopes, fears, concerns and ideas on the theme of urban waste. The results of this consultation have directly informed policy, as they were fed into several research calls for the EU Horizon 2020 funding programme (quoted in ◊33).</p> <p>https://www.ecsite.eu/activities-and-services/projects/voices</p>
Related tools	Patient participation as dialogue: setting research agenda (T20)

Crowd wise (Responsiveness)	
Description	Crowd Wise is a community participation method for making shared decisions such as responding to a consultation, setting priorities, allocating budgets. It foresees the adoption of users' feedback for a bottom-up monitoring of the decision implementation.
Examples	Within EQUAL-IST the crowdsourcing platform "CrowdEquality" was created, to collect ideas and trigger interesting discussions about the emerging challenges that were identified at each partner RPO during the internal audits (◊03).
Related tools	Engage 2020 Action Catalogue (T11)

Monitoring and evaluation (Reflexivity)	
Description	Monitoring and evaluation are particularly important activities from the reflexivity point of view, as they involve a collection, an examination and a shared discussion of information and opinions useful for outlining the status of a project's activities, identifying elements to pay attention to and deciding how to move on. Under RRI framework a great work has been done to develop advanced approach to monitoring and evaluation focused not only on assessing the outcomes but also on fostering learning and institutional transformations.
Examples	Within GENERA project, for the assessment of long term benefits and impacts a monitoring tool was developed, which allowed each organisation to measure its progress (in relation to the RRI key of gender equality) towards structural and organisational change (◊40).
Related tools	Participatory Evaluation Toolkit (T09)

Mutual learning (Reflexivity)	
Description	Mutual learning is a method of human interaction in general and in research in particular that maximises learning and promote the mutual knowledge and understanding among the involved actors.
Examples	Within JERRI project a mutual learning process was set up between the consortium, further European RTOs, stakeholders, and two international associated partners. Some in-depth case studies were carried out in order to: analyse RRI-related practice in two international organisations and to learn from international experiences in order to gain inputs for sharing the RRI goals and RRI action plans of Fraunhofer and TNO; exchange expertise and experiences with the international partners in the whole project process, that could facilitate the realisation of mutual learning effects (◇37).
Related tools	-

2.8. Territorial RRI keys and dimensions in territory-making policies

The considerations carried out so far can be summarised through a set of tables that provide an overview of the working hypothesis on territorial RRI and its relation with territory-making policies as they have been described in Chapter Four.

Firstly, Table 2 summarises the possible interpretations of the 5 RRI keys at the territorial level. As we have seen, each key may be interpreted as a way for R&I to support territory-making policies.

Table 2 – Summary of how RRI keys may be projected on territory-making

RRI Key	Interpretation	Affects territory-making policies
Public Engagement in science	Territory-based co-creation	Combining scientific knowledge with the intimate knowledge of the territory of local actors
Gender equality in Science	Territorial diversity awareness	Taking into account gender and other diversities in the production of new knowledge and related innovations
Science Education	Territory-based scientific culture	Developing a shared scientific culture so that everybody is included and has conceptual tools to contribute to territory-making. Promoting science as a cohesion factor
Open Access	Open access within and beyond	Making research products and data produced – not only available – but also accessible to territorial actors and beyond the local community
Ethical issues	Place-sensitive ethics	Dealing with the specific ethical issues of the place where the territory-making action is taking place and addressing research integrity issue

Secondly, we can figure out how such RRI keys revised can be combined with the policy orientations discussed in Chapter Four. Indeed the RRI keys may be considered as mean

to guarantee that the knowledge and the innovation produced facilitate and strengthen the territorial orientation of the policy. In example **a**, the re-shaping of territorial infrastructures may be discussed and co-created with local actors. In example **b**, an action for risk management should be based on the common and broad understanding of disaster scientific aspects (e.g., earthquake). In example **c**, a new local regulatory framework should take into account the local system of values. Obviously these are just examples and suggestions on how the different keys may provide practical insights on how to adopt Territorial RRI approaches.

Table 3 – RRI keys and Territory-making Policy Orientations

	Territory based co-creation	Territorial diversity awareness	Territory-based scientific culture	Open access within and beyond	Place-sensitive ethics
Re-rooting economic and social activities					
Re-shaping territorial infrastructure	a				
Establishing a new local regulatory framework					c
Empowering territorial actors					
Strengthening local decision making					
Territorial risk management			b		

Finally, Table 4 shows how the different types of governance framework promoted in territory-making policies (see Chapter Four) can be combined with the four RRI dimensions. As we have seen, such dimensions should be taken into account as they are as a way to address and manage different aspects of the social complexity. For example the establishment of a participatory agenda setting system, should: anticipate changes, include different types of actors, set up a system of feedback-based arrangements and reactions, and open a space of internal reflection. In this respect the RRI dimensions highlight the key role of R&I for qualify the territory-making policies through.

Table 4 – RRI dimensions and Territory-making Governance Framework

	Anticipation	Inclusiveness	Responsiveness	Reflexivity
Establishment of a participatory agenda setting system				
Establishment of a community-based support structure				
Development of a territorial exchange system				
Development of a community-led participative project				
Establishment of a knowledge co-creation platform				
Development of a collaborative framework between local authorities and civil society.				

3. Ideas for designing Territorial RRI experiments or pilot projects (how to use this map)

How to use this map? At the end of this chapter, retracing the main steps of the entire document, we can provide some ideas and practical indications for designing the 5 territorial experiments foreseen by the TeRRItoria project, as well as other possible actions in this area (i.e., pilot projects, or else). Of course, these ideas and practical indications will be transposed, integrated and adapted by the individual partners who will design, then implement and/or will support the experiments.

The features of territory-making

When you begin to reflect on how to set up a territorial experiment, it may be useful, first of all, to ask yourself about the specific characteristics that territory-making can have in your area of intervention, considering:

- *The development of a “territorial awareness”*

Which are the risks and issues at stake for the territory? Which can be the aggregating symbols and visions for the territorial actors? Which new public interpretation of the territory is advisable?

- *The activation of a “territorial mobilisation”*

Which social actors and resources have to be mobilised? How to full recognise and put in value the actors’ commitment? What territorial “project” is to be designed and implemented?

- *The production of a territorial change for governance*

How to assure a stable and continuous involvement of territorial actors? How to reconfigure the relations between these actors? How to redefine the identity structures, the internal visions and rules of these actors?

The territorial policies

Another step has at its core the territorial policies, that is an explicit and organised set of measures, rules, actions and guidelines to attain one or more collective objectives, connected to the regeneration, revitalisation or reinforcement of a given territory. At this point, at least two elements have to be considered:

- The “territorial orientations”

What is intended to be done for and to be changed in the territory? Some possible orientations are described in the map:

- Re-rooting economic and social activities
- Re-shaping territorial infrastructure
- Establishing a new local regulatory framework
- Empowering territorial actors
- Strengthening local decision making
- Territorial risk management.

- The “governance frameworks”

Which structured and recurring operating methods one can adopt, through which the territory-making process takes place? Some possible options from this side are provided in the map:

- Establishment of a participatory agenda setting system
- Establishment of a community-based support structure
- Development of a territorial exchange system
- Development of a community-led participative project
- Establishment of a knowledge co-creation platform
- Development of a collaborative framework between local authorities and civil society.

Some possible methodological elements to approach, start, implement and support in several ways the mentioned policies can also be take into account, and hare provided in the map as “policy tips”. These methodological elements can be cognitive in nature (e.g., identifying a shared vision on local priorities, accompanying the action with social research, etc.), or operational ones (fostering a participative decision making, leveraging on both formal and informal leadership and authorities, etc.).

The Territorial RRI

Finally, it is important to consider the necessity to assure an adequate involvement of R&I, to manage these complex processes and policies. So the TeRRItorial RRI, as shown in this Chapter can play a pivotal role, considering approaches related to:

- The RRI keys

How to use the RRI keys developed in Institutional RRI (Public Engagement, Gender Equality, Science Education, Open Access and Ethics) to open research and innovation to territory-making process within a given experiment?

- The RRI dimensions

Four dimensions of governance have been identified as characterising RRI approach: anticipation, inclusiveness, responsiveness and reflexivity. How these dimensions can be taken into account while using R&I for strengthening the territorial governance through a given experiment?

The Tools

Some practical reference tools (guides, toolkits, scientific books, articles, etc.) are also available (see Chapter Six), which can be helpful for the design and development of the five transformative experiments and, more in general, for setting up and carrying out projects related to the Territory-making of various types.

CHAPTER SIX

Tools

This chapter presents some practical reference tools (guides, toolkits, regulations, books, articles, etc.) which can be helpful for the design and development of the five transformative experiments and, more in general, for setting up and carrying out projects related to the Territory-making of various types.

These tools have been selected among those mentioned in the documentation related to the examined practices, presented in the previous chapters, even if they do not systematically concern all the policies or approaches discussed so far. The contents of the tools are different, including, e.g.: the community-based economy; the innovation in the urban environment; the methods of citizen participation (in various areas, e.g., health); the participatory evaluation; the sustainable development; the digital social innovation; or aspects of “institutional RRI”, such as the Public Engagement with science modalities, the evaluation of gender equality, etc.

In any case, these tools can be used for a wide range of fields, beyond the original context in which they were produced.

The selected tools are proposed in the following order:

- Guides
- Manuals
- Toolkits
- Scientific books/articles
- Reports/Regulations.

For each tool the following information is provided:

- Title (with reference number)
- Content (a little summary is provided)
- Author(s)
- Year of publication
- Project(s) considered by WP3 which are directly or indirectly related to the tool (as used in projects, as used by actors who have carried out similar projects, etc.)
- Link to a web site where the tool is available.

Kind of tool: Guides

T01: “How to do a Local Economic Blueprint”

Content: A Local Economic Blueprint is a project that aims to evaluate the economic potential of different sectors within a given local economy and identify opportunities for new, community-based economic activity. This guide provide a support for those groups pursuing the Economic Blueprint process in their own communities, following 5 stages: 1. assess and develop the team readiness to take this work forward; 2. forming a stakeholder group and planning the economic analysis; 3. creating a shared vision and working the research plan; 4. Economic Blueprint Summary and Plan, turning economic insights and stakeholder inputs into an actionable plan; Implementing the Economic Blueprint.

Author(s): Jay Tompt

Year: 2015

Project(s) considered by WP3 related to the tool: Totnes REconomy project (UK)

Link: <http://www.reconomy.org/wp-content/uploads/2017/06/How-to-Do-a-Local-Economic-Blueprint-Final.pdf>

T02: “Public Participation Principles Guide”

Content: The text describes the participatory budget (PB) mechanisms adopted in Cascais to bring citizens closer to decision-makers and promoting social inclusion, gender equality, and integration of all social groups. In the section “Who and how”, the 2 cycles of Decision and Implementation are described, while some “Principles of Public Participation in Fiscal Policy” are also provided.

Author(s): GIFT – Global Initiative for Fiscal Transparency

Year: 2015

Project(s) considered by WP3 related to the tool: Bridging the gap (Cascais – PT)

Link: <http://guide.fiscaltransparency.net/case-study/cascais-participatory-budgeting-portugal/>

T03: “A guide for local pioneer communities”

Content: Since 1997, the Island of Samsø in Denmark has been implementing a community-based transition from fossil fuels to renewable energy. Samsø’s current focus is on sustainable development. This guide is an anthology of experiences, advice, tools, methods, stories, scientific perspectives and videos that represents what Samsø islanders have learned through becoming self-sufficient in renewable energy – and fossil-free by 2030.

Author(s): Energi Akademiet

Year: 2016

Project(s) considered by WP3 related to the tool: Local owned integrated energy management system (Samsø)

Link: <http://www.pioneerguide.com/>



T04: “Structural Transformation to Achieve Gender Equality in Science”

Content: The guidelines aim at providing new insights about the actual implementation process of gender equality-oriented projects in scientific institutions, within the framework of STAGES project. Practice-based, they look at implementation issues based on experience in five different institutional settings. The STAGES Guidelines are aimed at people working in a scientific organisation who, be it in the framework of a funded project or independently, are willing to launch a programme for gender equality

Author(s): Marina Cacace et al. (edited by)

Year: 2015

Project(s) considered by WP3 related to the tool: STAGES

Link: http://www.stages.unimi.it/upload/documents/Guidelines_STAGES_new.pdf

T05: “How to Set Up a Competence Cell”

Content: This short guide provides information on how to set up a “competence cell”, i.e., an organisational unit, either new, or part of an existing organisation, which ultimate mission is to foster the transition toward a co-RRI. co-RRI is an approach developed under FoTTRIS project to bring together all actors from the quadruple helix, to collectively reinvent new ways of doing R&I. Competence cells represent a good example of how to set-up a living lab involving all the representatives of the quadruple helix.

Author(s): FoTTRIS project

Year: 2018

Project(s) considered by WP3 related to the tool: FoTTRIS

Link: <http://fottrris-h2020.eu/wp-content/uploads/2018/08/FOTRRIS-Score-Competence-Cell-RRI.pdf>

T06: “RECODE Policy guidelines for open access and data dissemination and prevention”

Content: This guide provides policy recommendations on open access to research data targeted at key stakeholders: research funders; data managers; research institutions; and publishers. These recommendations are aimed at assisting such stakeholders to support the development and the broadening of open access in their organizations and networks. The guidelines include both overall recommendations and targeted recommendations. The document includes also practical guides for developing policies and collect a set of useful resources.

Author(s): Victoria Tsoukala et al.

Year: 2015

Project(s) considered by WP3 related to the tool: RECODE

Link: https://trilateralresearch.co.uk/wp-content/uploads/2018/09/RECODE-D5.1-POLICY-RECOMMENDATIONS-_FINAL.pdf

Kind of tool: Manuals

T07: “The EnRRICH tool for educators”

Content: The tool provides insights about what RRI in higher education entails, about principles to take into account when (re-)designing curricula, about specific RRI competencies to be acquired by higher education students, about concrete steps for setting RRI-driven learning outcomes and for choosing consistent assessment, teaching and learning methods, with a focus on higher education modules (a module in higher education is a single course, often part of a wider program).

Author(s): Valentina Tassone and Hansje Eppink (Wageningen University)

Year: 2016

Project(s) considered by WP3 related to the tool: EnRRICH

Link: https://www.livingknowledge.org/fileadmin/Dateien-Living-Knowledge/Dokumente/Dateien/EnRRICH/D2.3_The_EnRRICH_Tool_for_Educators.pdf

T08: “ILO Manual For Gender Audit Facilitators”

Content: In this manual all the steps of the process of Participatory Gender Audit (PGA) are described, from set-up to writing PGA report. A broad and detailed set of guidelines, tools and annexes are provided in the Manual. ILO PGA is a tool that supports an organization’s commitment to gender equality by examining the extent to which equality is being institutionalized; helps to identify good practices in technical work; and points to effective and efficient ways of moving forward in mainstreaming gender in all work activities. The ILO PGA inspired the use of this approach in different other context both inside the UN system and in research sector.

Author(s): ILO

Year: 2012

Project(s) considered by WP3 related to the tool: EQUAL-IST

Link: https://www.ilo.org/gender/Informationresources/WCMS_187411/lang--en/index.htm

Kind of tool: Toolkits

T09: “Participatory Evaluation Toolkit”

Content: The toolkit defines and explains the evaluation process, identifies what makes participatory evaluation unique, and provides some considerations for any evaluation. It describes key qualities to make sure the participatory evaluation activities are both empowering and effective and outlines steps for coordinating evaluation activities. There are also descriptions of seven participatory evaluation techniques to help the projects responsible (re)inform, (re)align, and (re)energise their collaborative efforts.

Author(s): Gillian Kranias, Health Nexus

Year: 2017

Project(s) considered by WP3 related to the tool: Several

Link:

<https://en.healthnexus.ca/sites/en.healthnexus.ca/files/resources/participatoryevaltoolkit.pdf>

T10: “PE2020. Toolkit on Public Engagement with Science”

Content: The aim of this toolkit is to identify, evaluate and transfer innovative PE practices among European countries. The web tool presents an easy, rapid and guided access to the practical and theoretical knowledge as well as resources and tools developed on public engagement with science. The four session of the toolkit are: Strategic Framework, PE Methods & Tools, Institutional Anchorage, Societal Anchorage.

Author(s): Luciano d’Andrea and Giovanni Caiati for PE2020 Project

Year: 2017

Project(s) considered by WP3 related to the tool: PE2020

Link: <https://toolkit.pe2020.eu/>

T11: “Engage2020 Action Catalogue”

Content: The Action catalogue is an online decision support tool that is intended to enable researchers, policy-makers and others wanting to conduct inclusive research, to find the method best suited for their specific project needs. The catalogue consists of 57 methods with the common denominator that their focus is research driven by involvement and inclusion. For each of these methods the catalogue provides a short description, a long description and a set of external sources. The catalogue is organised through a set of filters that support the user to find the more appropriate method.

Author(s): Engage2020

Year: 2015

Project(s) considered by WP3 related to the tool: PE2020

Link: <http://actioncatalogue.eu/>

T12: “Digital social innovation toolkit”

Content: The Toolkit is a collection of case studies, tools, and resources to develop digital social innovation projects. The toolkit aim to answer questions such as: how to support the sustainable scalability of projects that are initiated by groups of citizens, makers and associations that do not usually follow established organisational models, but are inventing new ones? What kind of approaches can facilitate growth, where the concept of scaling does not correspond merely to financial sustainability or business opportunities?

Author(s): DSI4EWU Project

Year: 2017

Project(s) considered by WP3 related to the tool: Several

Link: <https://digitalsocial.eu/uploads/digital-social-toolkit.pdf>

T13: “Yellow Window: Gender in EU funded research”

Content: The toolkit comprises an overall introduction into gender and research and provides a set of suggestions on how to make research gender-sensitive. The toolkit examines in pragmatic terms how the gender dimension of research content contributes to excellence in research. It also analyses case studies based on concrete examples drawn from nine specific research fields: health; food, agriculture and biotechnology; nanosciences, materials and new production technologies; energy; environment; transport; socio-economic sciences and humanities; science in society and specific activities of international cooperation.

Author(s): Yellow Window

Year: 2009

Project(s) considered by WP3 related to the tool: Several

Link: https://www.yellowwindow.com/genderinresearch/index_downloads.html

T14: “Gender Equality in Academia and Research (GEAR) toolbox”

Content: The Gender Equality in Academia and Research (GEAR) tool provides universities and research organisations with practical advice and tools through all stages of institutional change, from analysing and assessing the state of play in the institution to setting up a gender equality plan, from the implementation of the plan to evaluating its real impact. The toolbox collects and systematise knowledge coming from many EC funded projects based on the development of gender equality plans.

Author(s): European Institute for Gender Equality (EIGE)

Year: 2016

Project(s) considered by WP3 related to the tool: PE2020

Link: <https://eige.europa.eu/gender-mainstreaming/toolkits/gear>

T15: “Living knowledge toolbox”

Content: This toolbox service aims at empowering new Science Shops and people working in community based research in developing professional standards and enable existing Science Shops, to refine and improve their practice through professional know-how. The database brings together relevant documentation on Science Shop procedures, processes and guidelines.

Author(s): Living knowledge

Year: n.a.

Project(s) considered by WP3 related to the tool: EnRRICH

Link: <https://www.livingknowledge.org/resources/toolbox/>

T16: “Co-creation navigator”

Content: The co-creation navigator helps people who wish to work with a diverse group of citizens, users and/or stakeholders to develop new products, experiences and/or services. First timers can learn about co-creation (methods and mindsets) and people more experienced in co-creation can explore new methods (and in the future, add and share their own preferred methods).

Author(s): Waag Co-creation Lab

Year: n.a.

Project(s) considered by WP3 related to the tool: BigPicnic

Link: <https://ccn.waag.org/>

T17: “How to run science cafés”

Content: The toolkit highlights the variety of options explored and the main findings of the experience done within the framework of the BigPicnic project, about science cafés. BigPicnic science cafés involve two key elements: 1.Science café topics are selected as part of a co-creation process; 2.Science cafés are evaluated via a Team-Based Inquiry (TBI)

Author(s): Suzanne Kapelari, Elisabeth Carli & Konstantin Sagmeister

Year: 2019

Project(s) considered by WP3 related to the tool: BigPicnic

Link: <https://www.uibk.ac.at/projects/bigpicnic/science-cafe-tool-kit/dateien-reports/bigpicnic-toolkit.pdf>

Kind of tool: Scientific books/articles

T18: “SEiSMiC: Enabling social innovation in European cities”

Content: This book details the systematic work and manifold outcomes of a project (SEiSMiC) on urban social innovation that was supported with EU funding and designed in line with the principles of responsible research and innovation (RRI). By fostering multi-level dialogue, mutual learning processes and wide-ranging participation, SEiSMiC was able to build national and transnational bridges between citizens, scientists, policy makers and urban innovators in 10 European countries. The book, among other things, contains insights about how to define urban and social innovation and implement related actions, how to plan and carry out co-creation programs, how to build forums, how to detect and overcome obstacles in this field.

Author(s): Paul Erian et al.

Year: 2016

Project(s) considered by WP3 related to the tool: CO-Bologna

Link: http://documents.rec.org/publications/Seismic_EnablingSocialInnovation_Oct2016.pdf

T19: “Case Study: Agueda sets the wheels in motion for its Participatory Budget”

Content: This article summarises the methodology and steps of the Participatory Budgeting (PB) experience in Agueda (PT). The Management Model is described, including the following priorities: administrative modernisation, municipal simplex, quality certification to ISO 9001 and 27001 and a cost accounting system. The two cycles of PB - The Budget Definition Cycle and the Budget Execution Cycle – are also described, with particular references to aspects such as consensus building mechanisms, and the “action-reflection-action” methodology, to introduce improvement actions during the implementation of the participatory process.

Author(s): Change Tomorrow team

Year: 2016

Project(s) considered by WP3 related to the tool: Participatory budgeting (PB) Agueda

Link: <https://changetomorrowblog.wordpress.com/2016/06/05/case-study-agueda-sets-the-wheels-in-motion-for-its-participatory-budget/>

T20: “Patient participation as dialogue: setting research agendas”

Content: The article contains key principles and guidelines for health research agenda setting processes grounded in the notion of participation as dialogue, and provide the description of a specific Dialogue Model, having six phases: exploration; consultation; prioritisation; integration; programming; and implementation.

Author(s): Tineke A. Abma, Jacqueline E.W. Broerse

Year: 2010

Project(s) considered by WP3 related to the tool: Application of the Dialogue Model for health research agenda setting process (Amsterdam)

Link: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5060528/>



T21: “Community Centre Gellerup. From Library to Community Centre which Provides Social Services under Scandinavian Regime”

Content: The text describes the main strategies and approaches of the Community Centre Gellerup (CCG). Besides a general overview, information is provided about: Development (Idea & Problem Addressed, Motivation & Core Solution), Implementation (Resources & Business Strategy, Governance, Support & Obstacles related to the network) and the Social Innovation Effects (Outcomes & Impact, Measurement).

Author(s): Liisa Perjo & Anna Berlina

Year: 2016

Project(s) considered by WP3 related to the tool: Community Centre Gellerup (CCG)

Link: <http://simpact-project.eu/evidence/sicases/pdf/SIB34.pdf>



Kind of tool: Reports/Regulations/Others

T22: “Waste Concern: A Decentralised Community-based composting through public-private-community partnership”

Content: The test provide information about a decentralised community-private-public partnership model for waste recycling to transform the solid waste into organic compost using low-cost, low-tech and labour-intensive method, piloted in Dhaka (Bangladesh) since 1995. Some general and particular aspects of the model are described, such as the innovative social business model, the composting model, and the partnership arrangements.

Author(s): M. Habibur Rahman

Year: 2011

Project(s) considered by WP3 related to the tool: Decentralised community-private-public partnership model for waste recycling (Dhaka)

Link: http://growinginclusivemarkets.com/media/cases/Bangladesh_WasteConcern_2011.pdf

T23: “Sustainable urban transitions. A model for understanding the emergence of innovation in sustainable urban development”

Content: This report presents a model for understanding the emergence of innovation in sustainable urban development. The report addresses the need to understand how to induce and support the emergence of innovations for sustainable transitions of cities, to recognise the actors that must be involved, and to identify prerequisites for a successful realisation.

Author(s): Elin Lindahl, Hanna Rydehell, Eugenia Perez Vico (SP)

Year: 2014

Project(s) considered by WP3 related to the tool: Innovation Platform for Sustainable Urban Development (Gothenburg)

Link:

https://www.mistraurbanfutures.org/sites/mistraurbanfutures.org/files/sustainable_urban_transition_-_a_model_for_understanding_the_emergence_of_innovation_in_sustainable_urban_development.pdf

T24: “Bologna Regulation on Collaboration between Citizens and the City for the Care and Regeneration of Urban Commons”

Content: The Regulation governs the forms of collaboration among citizens and the City of Bologna for the care and regeneration of urban commons (mainly public spaces, urban green spaces, and abandoned buildings and other infrastructure). Municipal administrators and citizens share responsibility for taking care of or regenerating the urban commons by adhering to a series of principles such as mutual trust, publicity and transparency, responsibility, proportionality and civic autonomy. The regulation also serves as a sort of handbook for civic and public collaboration

through the introduction of a new urban governance model. The regulation includes: General provisions; Procedural provisions; Interventions of care and regeneration of urban commons; Interventions of care and regeneration of buildings; Training; Forms of support; Communication, transparency and evaluation; Liability and surveillance; Final and transitional provisions.

Author(s): working group appointed by the City of Bologna within the project “The city as a Commons”

Year: 2014

Project(s) considered by WP3 related to the tool: CO-Bologna

Link: <http://www.comune.bologna.it/media/files/bolognaregulation.pdf>

T25: “INHERIT Reaching the Triple Win (Chapter 2)”

Content: In the second chapter of this report the procedure on how to develop scenarios is described in a synthetic and practical way. Scenario building is described as the output of a set of subsequent steps: Step 1: The setting of the scenarios; Step 2: Identifying and analysing the drivers; Step 3: Ranking by perceived impact and expected uncertainties; Step 4: Setting the parameters; Step 5: Elaborating the scenarios; Step 6: Categorising the implications of the scenarios; Step 7: Developing strategies for today.

Author(s): Georgina Guillen-Hanson, Rosa Strube & Arlind Xhelili

Year: 2018

Project(s) considered by WP3 related to the tool: INHERIT

Link: <https://www.inherit.eu/wp-content/uploads/2018/07/INHERIT-Reaching-the-Triple-Win.pdf>



ANNEX 1

List of the 30 selected Bottom-up Governance Innovation Practices

No.	Practices	Location	Country
1	Community supported entrepreneurship	Totnes	UK
2	Networked social innovation system in agriculture	Sever do Vouga	P
3	Cooperative to buy and built renewable energy	Rotselaar	B
4	Energy cooperative co-steered by the citizens	Mouscron	B
5	Community-owned farm for sustainable food	Near Sutton	UK
6	Renovable energies in remote island	Eigg island	UK
7	Local owned integrated energy management system	Samsø	DK
8	Telecommunication platform for marginalised communities	Mbashe Municipality	ZA
9	Science and Technology Park offering social services	Gdynia	PL
10	Innovation Platform for Sustainable Urban Development	Gothenburg	S
11	Living Lab to facilitate learning and collaboration	Eindhoven	NL
12	Utilising Living Laboratories for social innovation	Malmö	S
13	Supporting grassroots innovators and traditional knowledge	Many places of India	IND
14	Co-working space to build new economic and work opportunities	Zaragoza	E
15	Technological education to migrants	Mexico City	MEX
16	Technological education to migrants	West Virginia	USA
17	Urban commons regulatory framework	Bologna	I
18	Participatory budgeting for a small-size city	Agueda	P
19	Participative budget for sustainable city development	Cascais	P
20	Urban mobility with Superblocks	Barcelona	E
21	Eco and co-housing district	Vauban	D
22	Cooperation among public services around a local library	Gellerup (Aarhus)	DK
23	Joint flood risk management	Midlothian (Illinois)	USA
24	Climate-proof management planning	Ylivieska, Alavieska	SF
25	Rural development to manage environmental risks	Odisha State	IND
26	Partnership for waste management	Dhaka	BD
27	Guiding vision to change Energy system	District of Murau	A
28	Gender impact assessment for new urban spaces	Madrid	E
29	Joint definition of research agenda on water	Bordeaux	F
30	Application of the Dialogue Model for health research agenda setting process	Amsterdam	NL



ANNEX 2

List of the 43 selected RRI Governance Innovation Practices

No	Practice	Corresponding project
1.	Creation of National Mini reports	EQUAL-IST
2.	Gender Audit in RPOs	EQUAL-IST
3.	Creation of the crowdsourcing platform “CrowdEquality”	EQUAL-IST
4.	GEPs – Gender Equality Plans in IST- ICT Institutions	EQUAL-ST
5.	Utilising existing research infrastructures of frontier research institutions enriched with online tools	CREATIONS
6.	Development of the CREATIONS Demonstrators	CREATIONS
7.	Extensive literature review and analysis of RRI (Responsible Research and Innovation) and OS (Open Science)	FIT4RRI
8.	4 co-creation experiments	FIT4RRI
9.	Development of training tools and strategies on RRI and OS	FIT4RRI
10.	Action plans for introducing gender-aware management in RFPOs	STAGES
11.	Ongoing and final evaluation of the Action Plans	STAGES
12.	Development of Guidelines for Gender Equality Transformations in RPOs	STAGES
13.	Topicals (ADOPT) - inquiry-based teaching through science-in-the-news contexts and open curriculum materials	ENGAGE
14.	Sequences (ADAPT) - Open Online and just-in-time learning	ENGAGE
15.	Projects (TRANSFORM) - Partnerships system for school-scientist projects	ENGAGE
16.	Development of an online co-RRI platform	FoTRRIS
17.	Co-RRI Transition experiments (TEs)	FoTRRIS
18.	Creation of competence cells	FoTRRIS
19.	Online Database of Promising Practices related to “living moving, consuming” (INHERIT Database)	INHERIT
20.	Visioning and scenario planning (Future 2040 scenarios)	INHERIT
21.	Transformation of best practices into 15 case studies related to “living, moving and consuming”	INHERIT
22.	Case studies for the examination of open access and data preservation issues (related to four dimensions) through stakeholder engagement mechanisms	RECODE
23.	Policy guidelines for open access and data dissemination and prevention	RECODE
24.	Synthesis of current discourses on RRI in the industrial context (based on a literature review, stakeholder interviews, case studies and Horizon scanning reports)	RESPONSIBLE INDUSTRY
25.	International Delphi Study of RRI in industry (along with an international multi-stakeholder workshop)	RESPONSIBLE INDUSTRY
26.	Pilot case-studies related to the domain of information and communication technologies (ICT) for health, demographic change and wellbeing	RESPONSIBLE INDUSTRY



No	Practice	Corresponding project
27.	Testing-Industry evaluation (and development of the final framework)	RESPONSIBLE INDUSTRY
28.	An updated inventory and a catalogue of current and prospective European PE innovations	PE2020
29.	Context-tailoring and piloting of best practice PE processes	PE2020
30.	Development of an accessible net-based PE design toolkit for science policy actors (PE2020 toolkit)	PE2020
31.	Action plans based on Quadruple Helix, Open Innovation, Information & Tools for RRI application in S3	MARIE
32.	Big Picnic Basket: Development of outreach exhibitions	BigPicnic
33.	Science cafés on the topic of food security	BigPicnic
34.	A co-creation navigator	BigPicnic
35.	RRI Transformation Plans in Fraunhofer (including a long-term vision)	JERRI
36.	RRI Transformation Plan in TNO (including a long-term vision)	JERRI
37.	International mutual learning process	JERRI
38.	GEPs for the field of physics (potential of application in other research fields)	GENERA
39.	A toolbox for tailored GEPs – the GENERA toolbox	GENERA
40.	Development of the PAM tool (Planning – Action – Monitoring tool)	GENERA
41.	The EnRICH tool for educators	EnRICH
42.	Piloting of RRI teaching practices (based on multi stakeholder input)	EnRICH
43.	Science Shops for integrating RRI in academic curricula	EnRICH

ANNEX 3

References

- Alfonsi, A., Costantini, G. (2004). *Constructing WASH Coalitions for Improving the Provision of Services for the Urban Poor*. Global WASH Forum 2004, Dakar.
- Árnason, V. (2013). Scientific citizenship in a democratic society. *Public understanding of Science*, 22(8), 927-940.
- Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*, Durham, Duke University Press.
- Bauman, Z., (2000). *Liquid Society*, Cambridge, Polity Press.
- Beck, U. (1992). *Risk Society: Towards a New Modernity*, London, Sage Publications.
- Bijker, W.E., Caiati, G., & d'Andrea, L. (2012). *Knowledge Brokerage for Environmentally Sustainable Sanitation*.
- Caiati, G., d'Andrea, L., & Zeiss, R. (2017). BESSE: Knowledge brokerage and innovation for a sustainable sanitation. In *Knowledge Brokerage for Sustainable Development* (pp. 114-135). Routledge.
- d'Andrea, L., Marta, F., Khama, N., Vase, S. (2017), *Report on Literature Review*, Deliverable D1.1., FIT4RRI Project.
- d'Andrea, L., Caiati, G. (2017). *PE2020: Toolkit on Public Engagement with Science*. <https://toolkit.pe2020.eu/>
- Dorstewitz, P. (2016). Imagining Social Transformations: Territory-making and the Project of Radical Pragmatism: Response to Review. *Contemporary pragmatism*, 13(4), 361-381.
- Elden, S. (2005). Missing the point: globalisation, deterritorialisation and the space of the world. *Transactions of the Institute of British Geographers*, 30(1), 8-19.
- Engage2020 (2015). *Action Catalogue*. <http://actioncatalogue.eu/>
- Giddens, A. (1991). *Modernity and Self-Identity: Self and Society in the Late Modern Age*, Stanford, Stanford University Press.
- Haraway, D. (2016). *Staying with the trouble: Making kin in the Chthulucene*. Durham: Duke University Press.
- International Labour Organisation (2012). *A manual for gender audit facilitators: The ILO participatory gender audit methodology*.
- Kallis, A. (2018). Populism, sovereigntism, and the unlikely re-emergence of the territorial nation-state. *Fudan Journal of the Humanities and Social Sciences*, 11(3), 285-302.
- Latour, B. (2015). *Re-thinking territory*. Lecture presented at the University of Koln, July 2015.
- Latour, B. (2018). *Down to Earth: Politics in the new climatic regime*. John Wiley & Sons.
- Living Knowledge. (2019). *Living knowledge toolbox*. <https://www.livingknowledge.org/resources/toolbox/>
- Lyotard J-F. (1984). *The Postmodern Condition*, Manchester, Manchester University Press.
- Meissner, H. (2014). Politics as encounter and response-ability Learning to converse with enigmatic others. *Artnodes*, No 14
- Mezzana, D., Caiati G., Berliri, M., Signore, P. (2019). *Inventory of bottom-up governance innovation practices*. Deliverable D.3.1. TeRRItoria Project.
- November, V., Camacho-Hübner, E., & Latour, B. (2010). Entering a risky territory: Space in the age of digital navigation. *Environment and planning D: Society and space*, 28(4), 581-599.

- Paasi, A. (1998). Boundaries as social processes: Territoriality in the world of flows. *Geopolitics*, 3(1), 69-88.
- Peralta, P.O., & Hollenstein, P. (2015). Territorial Coalitions and Rural Dynamics in Ecuador. Why History Matters. *World Development*, 73, 85-95.
- Rip, A. (2018). The past and future of RRI. In *Futures of Science and Technology in Society* (pp. 115-133). Wiesbaden, Springer VS.
- Ryghaug, M., Skjølsvold, T.M., & Heidenreich, S. (2018). Creating energy citizenship through material participation. *Social studies of science*, 48(2), 283-303.
- Sassen, S. (2013). When territory deborders territoriality. *Territory, politics, governance*, 1(1), 21-45.
- Schaper-Rinkel, P. (2013). The role of future-oriented technology analysis in the governance of emerging technologies: The example of nanotechnology. *Technological Forecasting and Social Change*, 80(3), 444-452.
- Schrader, A. (2010). Responding to *pfisteria piscicida* (the fish killer) phantomatic ontologies, indeterminacy, and responsibility in toxic microbiology. *Social Studies of Science*, 40(2), 275-306.
- Stilgoe, J., Owen, R., & Macnaghten, P. (2013). Developing a framework for responsible innovation. *Research Policy*, 42(9).
- Von Schomberg, R. (2007). *From the ethics of technology towards an ethics of knowledge policy & knowledge assessment*. <https://op.europa.eu/en/publication-detail/-/publication/aa44eb61-5be2-43d6-b528-07688fb5bd5a>
- Von Schomberg, R. (2013). A Vision of Responsible Research and Innovation. In R. Owen, Hents, M., & Bessant, J. (eds) *Responsible Innovation*. Wiley.
- Zaharis, N., Eleftherakis, G., Michali, M. (2019). *Inventory of RRI governance innovation practices*. Deliverable 3.2. TeRRItoria project.