Bringing Responsible Research and Innovation (RRI) in territorial innovation policies with a focus on smart cities, transport and energy: the case of Kriti Region in Greece

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Abstract

In this poster we present the first outcomes of the activities implemented in Kriti Region In the context of the European Commission (EC) H2020 SwafS project "RRI2SCALE: *Responsible Research and Innovation Ecosystems at Regional Scale for Intelligent Cities, Transport and Energy* (GA. 872526)". **Through RRI2SCALE, Kriti Region seeks to address the wicked gap of meaningful citizen participation in territorial policy making at regional level, focusing on highly technology-oriented domains where stakes related with Responsible Research and Innovation (RRI) are high: smart cities, transport and energy**. We thus describe the methods that have been used so far, as well as the results that emerged from their implementation in the case of the Region of Kriti, including: (i) co-identification of 'Regional Dilemmas', (ii) analysis of previous good RRI practices in the region, (iii) large-scale survey to map citizens' views and concerns with respect to RRI-driven policy making in their region, and (iv) future scenario building. **The outcomes suggest that despite a plethora of identified regional dilemmas in Kriti, previous good practices and consultation with citizens are a valuable tool in the quest of developing a Research and Innovation Strategy for Smart Specialisation (RIS3) that leverages RRI elements** and thus respects both communities' concerns, the natural environment and regional economic development.

Introduction

Regional authorities in Europe are expected to develop solid Research and Innovation strategies that will highlight their competitive strengths while promoting smart specialization. But this process does not come without effort. Several challenges emerge along the way, including the transition from traditional top-down governance schemes to current policy co-creation and collaborative governance models. In parallel, new questions emerge due to digitalisation, sustainability concerns, privacy and safety, as well as the need for inclusivity.

The participating regional authorities of RRI2SCALE have set out to address the wicked gap of meaningful citizen participation in territorial policy making at regional level. To increase the tangibility of their outcomes, the European regions that participate in RRI2SCALE – including Kriti – narrow down their focus on the specific themes of smart cities, transport and energy. These themes have been selected because **they are highly technology-oriented, as well as of immediate concern for citizens, but they are also a integral element of regional competitiveness.**

Methods

1. **Regional Dilemmas:** Policy-makers are confronted with deciding between policies and measures that emphasise economic growth and others that promote social and environmental prosperity. We term this dilemma as the "Regional Dilemma". Thus, the first endeavour of RRI2SCALE was to **map the Regional Dilemma status in Kriti Region through desk research and insights from semi-structured interviews with local Quadruple Helix stakeholders**.

2. **Good RRI Practices:** Another crucial input to the overall approach of RRI2SCALE had been the **identification of good practices in RRI, societal engagement and co-production of knowledge in Kriti.** This information will eventually feed into the regional dialogues that will take place later in the project lifetime. Moreover, it may facilitate knowledge transfer and replicating well-proven RRI practices to the other consortium regions, or in general regions across Europe.

3. **Views, Concerns and Moral Issues:** Between June 2020 and September 2020, RRI2SCALE rolled out a **large-scale survey to all four pilot regions** to elicit information on the regions' citizens' and stakeholders' views, concerns and moral issues about current and future trajectories of their R&I ecosystem, as well as their opinion on potential trade-offs from R&I developments in the three smart fields.

4. **Techno-Moral Scenarios:** Future scenarios are "carefully constructed snapshots of the future and possible ways a sector might develop". In RRI2SCALE, the outcomes of a Delphi study (i.e., a forecasting technique that solicits experts' views), which was rolled out in November 2020, were synthesised **into a set of six techno-moral scenarios: two scenarios per focus domain** (i.e., smart cities, transport and energy), with the first scenario built on the assumption of "Rigid regional innovation policy & Low level of citizen participation", while the second one on the assumption of "Adaptive regional innovation policy & High level of citizen participation". The scenarios were visualised and then validated online by citizens of Kriti region, who they provided their input.

Kriti Region

Kriti (capital: Heraklion) is a south-eastern region of Europe **located at the crossroads of three continents**. With a total area of 8,336 km² and a population of 634,930 inhabitants (2019) (Eurostat, 2020), it is an important tourism and servi-

ces hub and, despite being an island, is **one of the most important agricultural regions in Greece.** The island is also the home of some inter-

nationally renowned public research centres and higher education institutions creating a vibrant and competitive research community.
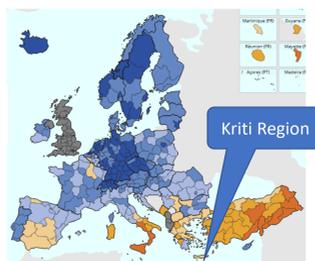
Through RRI2SCALE, **Kriti seeks to embed citizen and quadruple helix interests in its future regional and urban policy discourse** on topics that the citizen themselves are concerned with the most, and understand how regional and urban planning and policy making can become more meaningful and informed in a constantly changing technological environment.

Consortium: APRE, Western Norway University of Applied Sciences, Maastricht University, UNIVERSITY OF TWENTE, Q-PLAN INTERNATIONAL, R∙IM, WHITE RESEARCH, Vestland County Council, provincie Overijssel, Περιφέρεια Κρήτης Region of Crete, XUNTA DE GALICIA | gain

Results

1. **Regional Dilemmas**
- #1 Mass tourism vs. Environment and Cultural heritage
- #2 Innovation in production, distribution and operation vs. Traditional family businesses in the Agro-Food sector
- #3 Extroversion and competitiveness in R&I vs. RRI dimensions
- #4 Smart city & transport initiatives vs. Inter-regional inequalities
- #5 Renewable Energy Sources vs. Natural Environment
- #6 Oil drilling vs. Tourism
- #7 Traditional vs. Smart transport connection with the new central airport

2. **Good RRI Practices**
- #1 Consulting stakeholders before committing to regional environmental policies.
- #2 Implementing smart cities projects with and for local stakeholders.
- #3 Establishment of cross-European synergies, in particular with other maritime regions with similar characteristics.
- #4 Creation of thematic regional Working Groups with regional agendas and high level of local specialisation.
- #5 Mobilisation of young unemployed citizens as a channel to introduce them to R&I policies and re-integrate them into the labour market.

3. **Views, Concerns and Moral Issues**
- #1 Levels of trust in regional institutions remain low, especially towards Non-Governmental Organisations (NGOs), Civil Society Organisations (CSOs) and large companies.
- #2 Smart energy transition is popular across all major regional stakeholder groups: business, civil society, and academia express equal interest in the field.
- #3 Upgrading transport infrastructures to smarter is vital to most citizens and their quality of life.
- #4 The majority of citizens regard the digitalisation of the public sector's services as a regional priority.
- #5 Most citizens disagree that promoting regional research and innovation should be at the expense of citizens' well-being and the preservation of data privacy.
- #6 Looking at the effects of innovation from diverse angles and open communication about innovation are popular policies to increase trust in innovation.
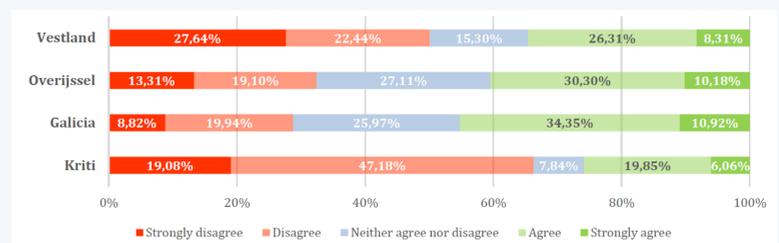

Figure: Trade-offs between promoting innovation in relation to personal data/privacy (Q3_3).

4. **Techno-Moral Scenarios**

- **Techno-moral scenario #1: Intelligent Transport**

It is 2031. The pandemic is over, and people are commuting between their homes and workplaces daily. In the city centres, there is a lot of traffic congestion, and many accidents happen. Budget cuts in public transport led to the suspension of several bus and train services, while the bus fleet is ageing. Private companies offer fast and convenient transportation services through electric self-driving vehicles, but at a high cost. There is also a lack of connectivity between urban and suburban areas due to the limited number of bus lines and the outdated local road network. As a result, commuting has become a real challenge for middle-class workers. The uneven access to services and jobs enhanced social disparities among social groups. It all started ten years ago. Then, local policy-makers decided to prioritise technological and economic development in the region without considering the social and environmental repercussions of this decision. Most of the decisions were made without consulting or even informing citizens. Today citizens often express their unease via protests. However, their voices are rarely being heard.

- **Techno-moral scenario #2: Intelligent Transport**

It is 2031. The public transport fleet has been renewed, offering safe and affordable mobility services. The use of public transport has been increased after the introduction of tax incentives. Several people opt for walking or cycling on the newly created bicycle routes. For longer distances, car-sharing platforms are often used. The cases of traffic congestion have been reduced through monitoring and optimising traffic conditions and the use of smart road systems. The connection between the urban and suburban areas of the region has improved. It all started ten years ago. Then, the regional policy-makers created a permanent committee that assesses and allocates funding for innovative ideas in transport. Citizens contributed with ideas, such as developing digital applications for tailored travel choices and real-time transport information. These applications proved to be successful and are used widely. Altogether, transportation in the region has become greener, safer and more inclusive.

Discussion

The combination of different methods has produced rich insights about the potential future R&I trajectories in the three smart fields in the region of Kriti. At the same time, results indicate that there are specific moral concerns and daily needs from the side of citizens that local policy makers should carefully understand and take into account in the development of regional R&I agendas. **Previously deployed RRI practices exist in Kriti, and can inform the policy toolkit towards the creation of more inclusive and sustainable RIS3 strategies**. In doing so, innovators and civil servants should consult individuals who have been in charge of those practices, while filtering and updating the practices to meet current and future needs of citizens. **The process should be complemented with horizontal collaboration with regions that face similar characteristics**, as a way to exchange practical tips in R&I policy making. Finally, policy makers must **start considering deploying popular tools to increase trust in local institutions and participation in R&I processes** in the three smart development fields, while paying attention to citizens' priority areas.

Bringing RRI into regional planning: From theory to SeeRRI