

# Policy paper on regional innovation systems and smart specialisation strategies

Welcome!



WBC-RRI.NET

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Responsible Research and Innovation

Artific

Industry 4.0

Machine Learning

# Policy paper outline

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# State of the art and meaning of embedding RRI policies in S3

The European Commission introduced the concept of Smart, Sustainable and Inclusive growth as part of its 'Europe 2020 Strategy'

The three pillars on which the strategy was envisaged to materialise were:

1. Smart growth: developing an economy based on knowledge and innovation;
2. Sustainable growth: promoting a more resource efficient, greener and more competitive Economy;
3. Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion ([EU Commission 2010a](#)).

**The concept of S3** was promoted regionally through the 'Regional Policy contributing to smart growth in Europe 2020', highlighting the central role of the regions in the implementation of the said strategies ([EU Commission 2010b](#)).

# State of the art and meaning of embedding RRI policies in S3

Regional research and innovation strategies for smart specialisation (RIS3) are integrated, place-based economic transformation agendas based on five pillars:

- A focus on policy support and investments on key national/regional priorities, challenges and needs for knowledge-based development, including ICT-related measures;
- Building on each country's/region's strengths, competitive advantages and potential for excellence;
- Support technological as well as practice-based innovation and aim to stimulate private sector investment;
- Involvement of stakeholders and encouragement of innovation and experimentation;
- Evidence-based and inclusion of sound monitoring and evaluation systems ([European Commission 2012](#)).

# State of the art and meaning of embedding RRI policies in S3

## **S3 in the Western Balkans**

The introduction of S3 to the Western Balkans aligns with the EU's enlargement strategy, which provides an accession perspective for these economies and envisions support for various policy areas, including socio-economic development. The EU accession process includes the utilization of outcomes from the smart specialization process to develop or upgrade industrial policies. The S3 approach plays a vital role in the socio-economic development of the Western Balkans, emphasizing the importance of innovation and research in their growth trajectories.

# Setting the scene – The approach towards innovation of WBC-RRI.net

## **WBC-RRI.net in a nutshell**

RRI principles act as enablers to the shared learning and diffusion of R&I governance innovations at territorial level, including S3 in the WBCs. The framework is based on a 'smart directionality' approach. **R&I planning and S3 strategies** have the potential to be characterised by an **RRI-driven** open and inclusive approach, entailing a comprehensive stakeholder involvement and engagement with a focus on citizens' participation.

The guidelines and input papers produced in the task will be **SMART and tailored**. Regional stakeholders often know what to do and policy consultants have provided guidelines, yet there is a lack of implementation capacity.



# Core Challenges of implementing S3

## General

- General support infrastructure is missing
- University/Industry research collaboration needs to be enhanced
- Government expenditure on education needs to be increased
- Innovation linkages are often missing
- Generally insufficient transfer of knowledge and technology from European knowledge centers;
- Link S3 with other key national strategic documents
- Slow process due to lack of capacities and human resources.

## Specific

- Keeping the interest of all stakeholders for active participation in the process
- Lack of “critical mass” within the scientific and research community due to fragmentation and isolation;
- Most enterprises are micro and small.
- CSO-s are very weak representative link because of relatively poor capacities
- Social and gender components are often overlooked

# Main Opportunities

## General

- Willingness from all actors to adopt and implement the Strategy
- Enabled further access to large international research infrastructures (CERN, EMBL, etc.); leading international R&I funds;
- Harmonization of the Strategy with other strategic documents on regional and national level
- Raising levels of digital literacy and digital transformation
- Setting up tech transfer procedures and channels of university/industry collaboration
- Prioritise and focus on development of the key institutions and R&D infrastructure
- Provide a platform for continuous dialogue for innovation and development involving all relevant stakeholders

## Specific

- Clusters playing a more active role in the innovation ecosystem.
- Using the experience of neighbouring countries in preparation of S3 would increase the dynamics.
- Availability of natural resources and technogenic mineral raw materials for new industrial applications;



# Embedding RRI in the S3 phases in the WB

## Design Phase

Emphasize the importance of **public participation**. This includes involving all relevant stakeholders in the S3 design process, employing scientific methodologies comparable to foresight practices, and utilizing a variety of instruments including questionnaires, interviews, and Delphi analysis. Diversity in engagement methods is encouraged to accommodate varying stakeholder preferences and requirements.

**Open dialogues** facilitated by organizations such as the Chamber of Commerce, which encourage women's entrepreneurship, provide a compelling illustration of promoting gender equality within S3 initiatives. In addition, empirical data collected through **interviews, questionnaires,** and seminars should be utilized to inform decision-making, potentially within the working group.

**Multidisciplinarity and inclusivity** should be the governing principles for S3 design. It is crucial to communicate that the selection of S3 priority areas does not detract from the significance of other disciplines, but rather highlights comparative advantages. This congruence increases the likelihood that S3 initiatives will effectively contribute to the national agenda as a whole.

# 5. Embedding RRI in the S3 phases in the WB

## Design Phase

**Transparency and accessibility** are crucial to the success of S3 initiatives. Making data used in the S3 design process available online promotes open science, and the transparency of documents allows for open consultation and feedback from stakeholders, enriching the decision-making process.

Integrating a **gender perspective** is also crucial. Setting targets for gender-balanced participation in workshops and interviews is a proactive step and engaging CSOs focused on gender issues, even outside of specific sectors, can enrich the diversity of perspectives and experiences presented.

To promote inclusiveness, it is essential to convey that S3 initiatives will ultimately benefit all groups. This message can be amplified by launching **promotional campaigns** that clarify the benefits of S3 to the "common people" and by involving CSOs representing vulnerable groups in decision-making processes. Interviews can provide perspectives on the potential for positive change and enhanced prospects for everyone.

# Embedding RRI in the S3 phases in the WB

## Implementation Phase

**Motivating young people** to pursue careers in priority sectors, such as agriculture, while emphasizing the importance of innovation is essential for the long-term success of S3 strategies. This includes undertaking ethics analyses of innovation investments and mapping all stakeholders, including human, non-human, and environmental parties.

Developing a comprehensive **plan for public engagement** is essential for significant investments under S3. This includes engaging with local communities to ensure their perspectives are heard and their concerns are addressed throughout the process of implementation. Furthermore, it is recommended to implement training programs that improve communication between the scientific community and the media.

Aligning the **education system with S3 priorities** is crucial for cultivating a talent pool aligned with the region's innovation objectives. This alignment should encompass all levels of education, including postsecondary education and professional training. Therefore, making S3 a top priority for the Ministry of Education ensures that educational curricula and programs are developed to support the innovation goals of S3.

# Embedding RRI in the S3 phases in the WB

## Implementation Phase

Actions to promote inclusion, empower underrepresented groups, engage stakeholders, and align education with innovation priorities. **Prioritize funding for SMEs** and ventures led by women entrepreneurs. In addition to providing funding opportunities for family enterprises that employ people with disabilities, economic inclusion can be promoted by offering such opportunities.

A multifaceted approach is recommended in order to establish the necessary conditions for **women** to participate actively in innovation. Initiatives should commence at the grassroots level, encouraging young girls to pursue STEM education. In addition, criteria for large-scale investments should include the presentation of a plan for gender equality, ensuring that gender considerations are integral to innovation initiatives.

**Clusters** can serve as forums for discussing and promoting RRI principles. It is vital to promote clusters to incorporate RRI principles into their operations and initiatives, thereby fostering a culture of ethical and responsible innovation within their respective industries.

# Embedding RRI in the S3 phases in the WB

## Monitoring phase

It is crucial to develop a **comprehensive set of indicators** for measuring the progress and impact of S3 initiatives. These indicators cover long-term, medium-term, and short-term objectives, ensuring that principles of RRI are effectively incorporated into the strategic planning process.

It is essential for the success of S3 initiatives to ensure the active participation of key stakeholders. Long-term (5 years), the objective is to attain a participation rate of 80 percent, indicative of a comprehensive engagement of relevant parties.

It is necessary to **educate the general public** about S3 initiatives. Long-term, the objective is to reach 45 percent of the population via numerous online channels. Organizing one to two professional events per year related to S3 domains is an effective medium-term promotional strategy.

It is crucial to evaluate **the economic impact of S3 initiatives**. This includes keeping note of the number of new jobs created, mapping the current employment landscape, and encouraging long-term employability.

# Embedding RRI in the S3 phases in the WB

## Monitoring phase

Indicators pertaining to **patents, newly developed products/services**, and academia-business collaborations are crucial for fostering innovation. Keeping track of the number of contracts between academia and businesses, grants/funds provided for various stages of company development, and funding from venture capitalists or angel investors for start-ups provides a comprehensive view of innovation development.

Innovating responsibly requires an **inclusive approach**. During the monitoring phase, initiatives that include vulnerable groups should receive additional points. This incentive correlates with the S3 framework's broader objective of promoting inclusivity and equity.

The number of events organized to engage the public and the **increase in government funding** allocated to S3 projects demonstrate a commitment to involving the broader community and securing financial support for innovation initiatives.

Integral to responsible research and innovation are the incorporation of **ethical considerations** into S3 implementation and the promotion of open access to knowledge and resources. Extra points should be awarded to initiatives that give these principles priority.

# Specific policy recommendations by country

## Albania

- Alignment with SDG-s
- More proactive involvement of CSO-s in definition of action plan
- anticipative of future trends, like brain **drain/gain**; **digital literacy**; **needs for specialized education**; EU integration, etc.
- responsive to current challenges (both in STI, but also at territorial scale): climate change; lacking research infrastructure; unproductive agricultural sector;
- inclusive in terms of **fostering collaborative milieus** between quintuple helix stakeholders through **better open networks**; **new knowledge hubs**; **establishment of incubators and support to innovative startups**; but also in terms of catering to the needs of the **most vulnerable** (social inclusion). Citizen Science initiatives may be promoted to foster both knowledge transfer, as well as enhanced scientific products.
- reflexive of all other initiatives in Albania and WB that **support innovation, youth development**; **entrepreneurship**; etc, by assessing their success (if possible) and capitalizing on current best practices. In any case the digital twins (innovation and green agenda) need to be fully aligned and transparent.



# Specific policy recommendations by country

## Bosnia and Herzegovina

### **Design Phase Transparency:**

The bodies leading the S3 process must prioritize transparency during the design phase.

Actively engage relevant stakeholders beyond the established working group.

Use an inclusive and bottom-up approach to involve all key players.

This transparency ensures that actions in the Entrepreneurial Discovery Process (EDP) are well-understood and supported.

### **Uncovering Entrepreneurial Knowledge and Potential:**

Engage stakeholders across the quadruple helix (government, industry, academia, and civil society).

By doing so, tap into entrepreneurial knowledge and innovative potential.

Identify new activities and opportunities, especially for open science and open innovation.

### **Stakeholder Involvement and Implementation:**

Relevant stakeholders should actively participate in designing and implementing the S3 strategy.

They are best positioned to execute the strategy effectively.

Educate stakeholders about the entire chain of actions involved in S3 strategy preparation.

# Specific policy recommendations by country

## Montenegro

### Strategic Goal Allocation:

In the period of 2021-2022, the majority of funds were allocated as follows:

**Strategic Goal 4: 65%** for supporting innovative activities in the economic sector.

**Strategic Goal 3: 25%** for enhancing cooperation within the innovation system.

The remaining three Strategic Goals collectively received **10%** of the total realized funds.

### Adapting to Challenges:

Despite challenges posed by the COVID-19 pandemic (referred to as “C19”), Montenegro made significant progress.

Many planned activities were impacted, but crucial steps were taken to develop the innovation framework.

### Montenegrin Innovation Fund:

Established to support innovation ideas and activities aligned with S3 priorities.

Provides a platform for those interested in working within the recognized strategic areas.

# Specific policy recommendations by country

## North Macedonia

It can be noticed that some of the RRI principles are already incorporated in the list of main S3 objectives: (1) Creating foundations for **scientific excellence**; (2) **Improving the innovation ecosystem**; (3) Improving the competitiveness and **environmental sustainability** of the business sector; (4) **Development of human capital and skills for innovation, green and digital transformation**; (5) Digital transformation of the economy and society; and (6) As a cross-functional objective: **Ensuring continuous dialogue** for smart specialization and good governance.

It is important that S3 is fully incorporated in the country umbrella strategy - National Development Strategy 2042-2044, where within the first pillar Sustainable, Innovative and Competitive Economy all activities related to S3 priorities have the prime concern.

<https://www.nrs.mk/>

# Specific policy recommendations by country

## Serbia

### **Entrepreneurial Discovery Process (EDP):**

Emphasize ongoing stakeholder engagement through the EDP.

Ensure active involvement of relevant actors in strategy implementation.

Adapt and refine the strategy based on emerging opportunities and market trends.

### **Inter-Sectoral Collaboration:**

Foster collaboration between academia, industry, and government.

Establish innovation hubs or collaborative research programs.

Create platforms for knowledge exchange and joint technology development.

### **Digital Transformation and Green Technologies:**

Prioritize integration of digital and sustainable technologies.

Align with global trends and EU directives.

Invest in areas like the recent BIO4 Campus initiative.

### **Monitoring and Evaluation:**

Implement robust mechanisms to track progress.

Assess impact on economic growth, job creation, and societal well-being.

# Looking towards the future....

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