



Јакнење на капацитетите и механизмите за поддршка
на реформскиот процес на Поглавје 20
YESNetwork+

DESIGNING SMART SPECIALIZATION STRATEGIES



Проектот е финансиран од
Европската Унија

Проектот е имплементиран од:



CONTENT

Part 1 - INTRODUCTION: Smart specialization: what, why, when?

- Concepts and terms. Relevance and policy context of smart specialization.

Part 2 - RIS3 DESIGN I: How do we begin?

- Analyses of regional context and potential for innovation. Setting up the governance structure.

Part 3- RIS3 DESIGN II: From analyses to definition of priorities and of policy mix

- Definition of vision, priorities and policy mix. *Horizontal aspects and societal challenges*. Entrepreneurial Discovery Process.

Part 4 - RIS3 DESIGN III: Preparing strategy implementation

- Setting up monitoring, and evaluation mechanisms. Elaboration of action plan and project portfolio.



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INTRODUCTION

SMART SPECIALIZATION: WHAT, WHY, WHEN?



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Smart specialization

- An innovative approach that aims to boost growth and jobs in Europe, by enabling each region to **identify** and **develop** its own **competitive advantages**.



SMART: relies on region's own strengths and comparative assets



INCLUSIVE: involves all relevant stakeholders from quadruple helix



SPECIALIZED: prioritizes research and innovation investment in competitive areas (**EXCLUSIVE**)



STRATEGIC: defines a shared vision for regional innovation



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Smart specialization strategy (RIS3)

- National or regional **innovation strategy** that sets priorities in order to build competitive advantage by developing and matching research and innovation own strengths to business needs in order to address emerging opportunities and market developments in a coherent manner, while avoiding duplication and fragmentation of efforts.
- Is an integrated, place-based economic transformation agenda.
- May take the form of, or be included in, a national or regional research and innovation (**R&I**) **strategic policy framework**.



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Characteristics of RIS3:

- They focus policy support and investments on key national/regional priorities, challenges and needs for knowledge-based development, including ICT-related measures;
- They build on each country's/region's strengths, competitive advantages and potential for excellence;
- They support technological as well as practice-based innovation and aim to stimulate private sector investment;
- They get stakeholders fully involved and encourage innovation and experimentation;
- They are evidence-based and include sound monitoring and evaluation systems.



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<https://www.youtube.com/watch?v=hbTIVOBv8IU>



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Difference from previous approaches



RIS3s

Boosting competitiveness by linking knowledge and RD resources to a limited number of priority areas that show economic concentration

Strengthening innovation capacity through cooperation and based on market/business needs

Effective, efficient and synergetic use of public investments in few competitive economic areas/sectors and in line with European and global trends

PREVIOUS RISs

Lack of European, global perspective, economies considered in isolation

Not efficient in identifying priorities and forms of practical cooperation between regions

R&D not business driven, or in tune with the economic fabric

Sound analyses of the regional assets missing

Copying other regions without taking into consideration the local context



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Innovation

□ Is related to a process connecting knowledge and technology with the exploitation of market opportunities compared to what is available on the internal market - **new** or **significantly improved products** (goods or services), or **processes**, new marketing **methods**, or new organizational methods in business practices, workplace organization or external relations (*OECD, Oslo Manual*).

□ Dimensions: **technology, market**.

MARKET INNOVATION

sustaining: does not significantly affect existing markets

evolutionary: *improves a product in an existing market in ways that customers are expecting*

revolutionary: *is unexpected, but does not affect existing markets*

disruptive: creates a *new* market by providing a different set of values, which ultimately (and unexpectedly) overtakes an existing market



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Regional Innovation Scoreboard 2017

- Modest innovators
- Moderate innovators
- Strong Innovators
- Innovation Leaders

Regional Innovation Scoreboard 2017

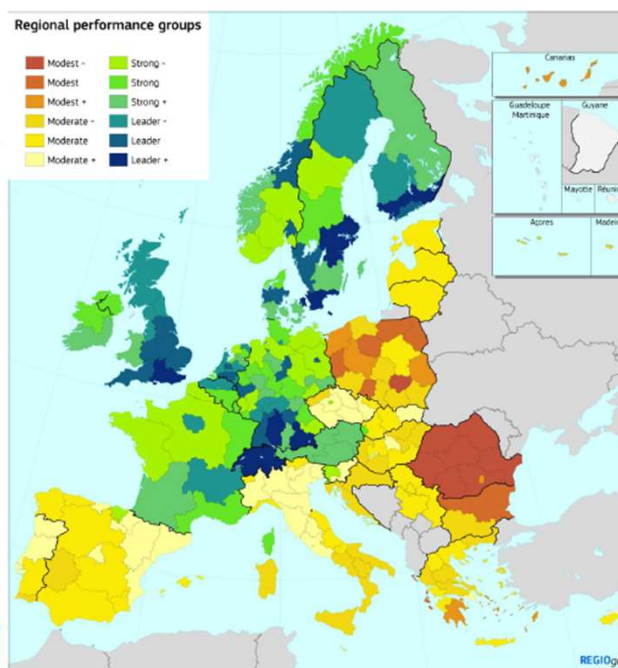
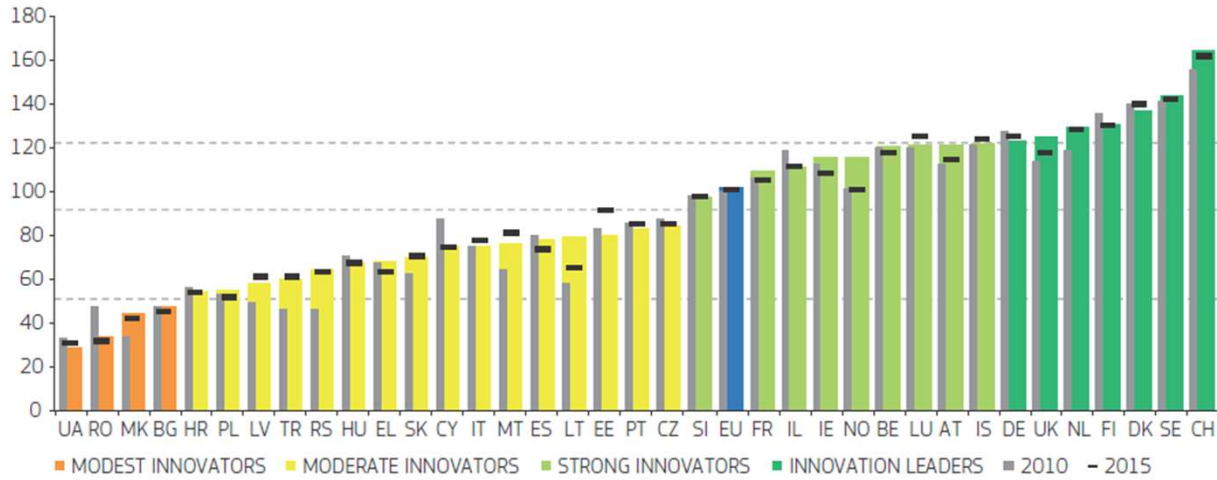


Figure 12: Performance of European and neighbouring countries' systems of innovation



Source: European Innovation Scoreboard 2017



The Former Yugoslav Republic of Macedonia (FYROM) is a Modest Innovator. Over time, performance has increased by 10.4% relative to that of the EU in 2010.

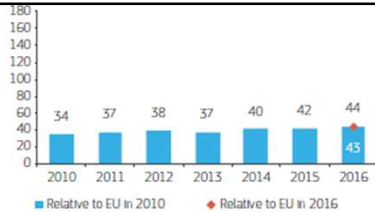
Innovation system

Relative strengths of the innovation system are in Sales impacts, Firm investment, and Innovation-friendly environment. Relative weaknesses are in Finance and support, Employment impacts, and Intellectual assets.

Structural differences

Notable differences are a larger share of employment in industry, a smaller share of employment in Services, lower buyer sophistication, lower GDP per capita, a higher growth rate of GDP, a lower growth rate of population, and lower population density.

	MK	EU
Structure of the economy		
Share of employment in Agriculture, avg 2011-15	18.2	4.8
Share of employment in Industry, avg 2011-15	30.2	24.4
Share of employment in Services, avg 2011-15	53.6	70.2
Business indicators		
Top R&D spending enterprises		
- average number per 10 mln population, 2011-15	none	29.9
- average R&D spending, mln Euros, 2011-15	none	165.8
Buyer sophistication 1-7 (best), 2013-14	2.8	3.6
Ease of starting a business, Doing Business 2017	81.7	76.5
Socio-demographic indicators		
GDP per capita, PPS, avg 2011-13	3600	25,400
Change in GDP between 2010 and 2015, (%)	12.5	5.4
Population size, avg 2011-15 (millions)	2.1	505.5
Change in population between 2010 and 2015 (%)	0.8	1.1
Population aged 15-64, avg 2011-2015 (%)	70.8	66.1
Population density, average 2011-15	82.2	116.4
Degree of urbanisation, average 2011-15 (%)	57.0	74.4



Former Yugoslav Republic of Macedonia (FYROM)	Performance relative to EU 2010 in		Change 2010-2016
	2010	2016	
SUMMARY INNOVATION INDEX	33.8	44.2	10.4
Human resources	21.1	49.3	28.2
New doctorate graduates	15.4	33.3	17.7
Population with tertiary education	24.3	92.8	68.4
Lifelong learning	24.2	17.9	-6.3
Attractive research systems	14.7	25.3	10.6
International scientific co-publications	12.6	35.5	22.9
Most cited publications	22.0	27.7	5.7
Foreign doctorate students	4.7	18.1	13.4
Innovation-friendly environment	34.7	61.7	27.0
Broadband penetration	77.8		44.4
Opportunity-driven entrepreneurship	4.2	18.3	14.7
Finance and support	0.0	2.8	2.8
R&D expenditure in the public sector	0.1	5.1	5.0
Venture capital expenditures	0.0	0.0	0.0
Firm investments	60.7	67.9	7.2
R&D expenditure in the business sector	1.5	0.8	-0.7
Non-R&D innovation expenditures			0.0
Enterprises providing ICT training	64.3	85.7	21.4
Innovators	66.2	66.2	0.0
SMEs product/process innovations	117.5	117.5	0.0
SMEs marketing/organizational innovations	68.2	68.2	0.0
SMEs innovating in-house	13.5	13.5	0.0
Linkages &	38.6	41.2	2.5

Source: European Innovation Scoreboard 2017

Policy context

- ❑ **EU 2020 Strategy** priorities: smart, sustainable, inclusive growth
- ❑ **EU Flagship Initiatives:** Innovation Union, Digital Agenda (ICT)
- ❑ **Ex-ante conditionality** for ESIF and a means to deliver a **targeted** support, directly linked to Thematic Objective (TO) 1: strengthening research, technological development and innovation
- ❑ Indirectly linked to:
 - ❑ **TO2 - digitalization**, TO3 - enhancing the competitiveness of SMEs
 - ❑ TO4 - supporting the shift towards a low-carbon economy, TO5 – climate adaptation, TO6 - preserving and protecting the environment and promoting resource efficiency
 - ❑ TO8 – human resources, skills, TO11 – administrative capacity



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Link to the Community acquis

- ❑ **Chapter 20: Enterprise and industrial policy:**
 - promotes industrial strategies enhancing **competitiveness** by speeding up adjustment to **structural change**, encouraging an environment favorable to **business creation** and growth throughout the EU, as well as, domestic and foreign investments. It also aims to improve the **overall business environment** in which small and medium sized enterprises (SMEs) operate.
- ❑ **Chapter 22: Regional policy and coordination of structural instruments:**
 - assures that institutional framework is in place and adequate administrative capacity exists to **ensure programming, implementation, monitoring and evaluation** in a sound and cost-effective manner from the point of view of management and financial control.
- ❑ **Chapter 25: Science and research:**
 - ensures full and successful association with the Framework Programmes, as well as, the necessary implementing capacities in the field of **research and technological development** including adequate staffing.



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Relevance of RIS3

- **RIS3s** are sound, participatory and evidence-based innovation policies and as such are of interest not only to EU member states, but also to non-EU countries willing to improve their innovation ecosystems, since innovation:
 - makes countries and regions become/remain competitive by increasing productivity of companies, helping them to access new, higher value added markets,
 - improves labour efficiency and leads to attraction of skills, ideas and capital,
 - leads to sustainable employment creation in a context of fierce global competition,
 - is a cost-efficient way to improve service delivery in order to tackle social needs and societal challenges.
- Contributes in ensuring that once the country is admitted as a Member State it is able to take on the obligations of EU membership



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Multi-annual Action Plan for a Regional Economic Area in the Western Balkans

- Has a set of measures in Investment, Mobility and Digital Agenda, which **address the R&D and innovation systems** in the Western Balkans.
- Actions for **smart growth** constitute a comprehensive agenda on RDI in order to move forward from the current economic model to one that can successfully compete in, and integrate into, the EU **innovation-driven economies**
 - focus is on the development of smart specialization strategies.
- MB IPA **support** for the smart specialization strategies will be **available** for all economies in the region already at the beginning of **2019**
 - 2018 is a crucial year to prepare for the full use of the support in 2019.



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Supporting an Innovation Agenda for the Western Balkans (EC – JRC)

- ❑ The Joint Research Centre of the European Commission is committed to support a shift in innovation policies and improvement of R&I efforts and governance in the Western Balkan economies.
- Proposes **four specific lines of activity**:
 - the application of the smart specialization methodology;
 - capacity-building activities for technology transfer;
 - support to transnational collaboration and linkages in the context of EU macro-regional strategies;
 - data quality enhancement.



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Other reasons

- ❑ **EU Regulation No 231/2014 (IPA II) – thematic priorities**:
 - ❑ Improving the private-sector environment and competitiveness of enterprises, including **smart specialization**, as key drivers of growth, job creation and cohesion. Priority shall be given to projects which improve the business environment.
 - ❑ Strengthening **research, technological development and innovation**, in particular through improving the research infrastructure, an enabling **environment** and promotion of networking and **collaboration**.
- More efficient use of funds, bigger impact.
- More effective participation in Horizon 2020 applications as well as Interreg projects.
- ❑ Better opportunities and access to knowledge and R&I networks/partnerships with organizations from MSs.



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Additional arguments RIS3 helps:

- Streamlining existing initiatives in a more coordinated and effective manner,
- Developing a system of cooperation, through systematic interaction of stakeholders (industry, education and research institutions, and government and civil society) – recognized as the most valuable result of the process in MSs and necessary for accession (institutional capacity building, good governance),
- Modernizing the main sectors by adding scientific knowledge and inter-sectorial innovation to traditional industries,
- Promoting economic opportunities in emerging sectors based on technological capabilities and synergies between related sectors,
- Creating transnational linkages and connections to global value chains,
- Mobilizing private capital that can help overcome lack of public investments in RDI.



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RIS 3 DESIGN – PART I

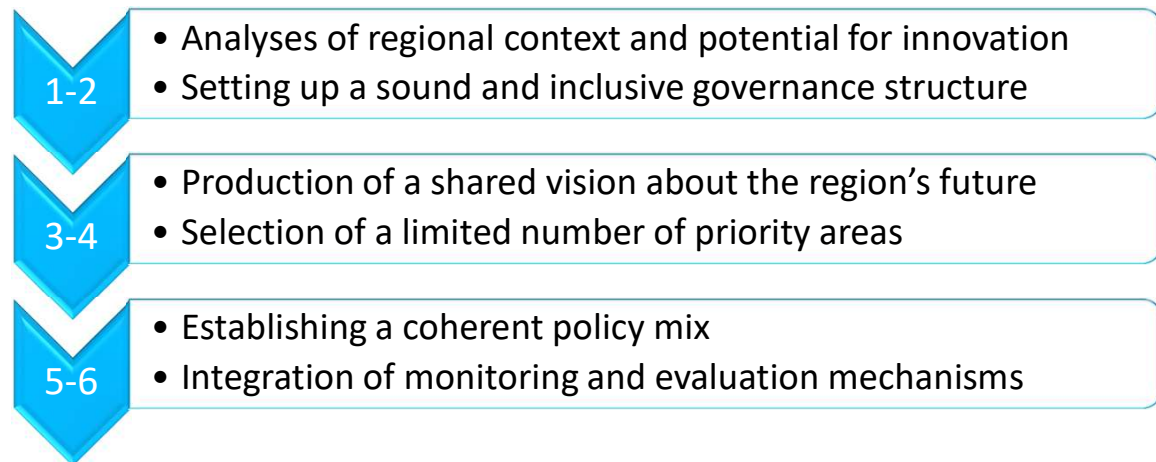
*FROM ANALYSES TO THE DEFINITION OF PRIORITIES AND SUITABLE
POLICY MIX*



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Steps of RIS3 design



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Analyses of the regional context and potential for innovation

Main parts:

- 1) Analyses of (*socio-*) economic context
- 2) Analyses of research-development capacity

Aim is to gather evidence for selection of priority areas.

Methods used: desk research, comparative studies, expert panels, large scale questionnaires, personal interviews, working groups, SWOT analyses, etc.



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1) Analyses of (socio-) economic context

- Gathering information about EU and national/regional context should precede the analyses
- It can cover:**
 - Analyses of regional assets:
 - business, transport, ITC, education infrastructure,*
 - natural resources, human resources (employment by sectors, higher education, STEM or HRST, VET, digital skills), etc.*
 - Analyses of linkages with the rest of the world: benchmarking, positioning in value chains:
 - based on benchmarking method chosen.*
 - Analyses of dynamics of the entrepreneurial environment:
 - economic structure, share of types of companies, sectors, clusters and potential for clusters,*
 - start-ups, main exporters, productivity, etc.*



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Look for:

- Differentiation patterns: *what are the activities that are emerging at the interception of well established ones?*
- Regional benchmarking: *what are the examples we can learn from or mark a difference with?*
- Integration in value chains: *where do businesses position themselves in international value chains?*
- Economic specialization: *what are the sectors where a concentration can be measured in terms of employment, number of companies, value-added, exports, productivity? Where did clusters form?*
- Matching with skills and infrastructure: *what can educational, business, transport, ITC infrastructure support? Where can HR and skills be found?*



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2) Analyses of research and development capacity

- Analyses of European/Regional Innovation Scoreboard results is a good introductory.
- It can cover:**
 - Analyses of RD infrastructure
 - public and private research organizations, RD activity in universities, science and technology parks, technological transfer infrastructure, etc.*
 - Analyses of RD results
 - Patents at national and European level, publications and citations, etc.*
 - Analyses of HR involved in RD
 - Analyses of financing
 - public and private funds in RD, projects, technology transfer services, etc.*



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Look for:

- Scientific specialization: *in what scientific field is the region strong compared to other regions? (above-average concentration compared to the country or other regions)*
 - Specialization trends: *how do indexes change over time? What is the evolution in the region's specialization?*
 - Commercial value of RD: *do the results of RD activity have an impact on the market?*
- How can you relate scientific fields or technological domains to the production sectors?



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Setting up a governance structure

- Governance structure ensures participation and secures ownership of the strategy; fosters an interactive, regionally-driven, consensus-based approach; helps in absorbing, generating and exchanging knowledge in timely and cost effective manner.
- Offers the possibility for large categories and various types of stakeholders/key actors to be represented and be involved in:
 - assuring support for RIS3 design and further on in implementation and monitoring, helping to mobilize and involve of further stakeholders, collaboration and management of potential conflicts, liaison with EC, other regions, national stakeholders, etc.



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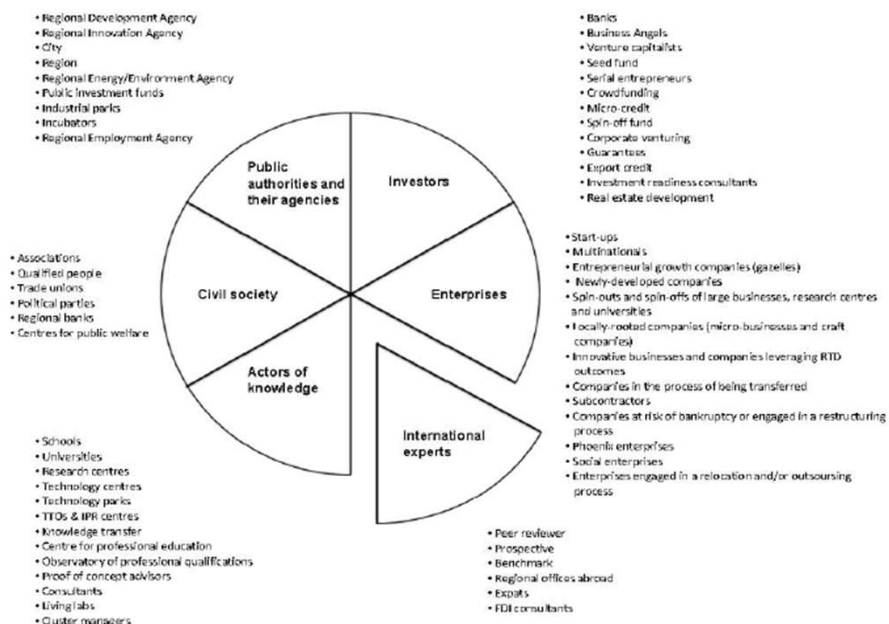
✓ involvement of *quadruple helix* actors depending on the regional context

✓ need for multi-level dimension (local/regional/national), for ex. to assure connection with other strategies

! prevent capture by specific interest groups

! assure FLEXIBILITY

Figure 1 - The regional knowledge ecology



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Source: EURADA

Special roles

- ❑ **CSOs:** can foster a culture of constructive challenge to the regional status quo, can introduce demand-side perspectives, can drive attention to challenges linked to poverty, health, climate change -> leads to an open, user-friendly innovation perspective -> social innovation, ecological innovation.
- ❑ **Boundary spanners** (actors with interdisciplinary knowledge/experience or with experience in different types of organizations): can facilitate new connections between sectors, new cooperation between disciplines -> bring in novelty to the process.
- ❑ **External experts:** can help in parts of analyses, benchmarking, peer-review services or connection with specialized networks.
- ❑ **Sector champions:** can mobilize, engage local businesses in both traditional and emerging sectors.
- ❑ **Collective leaders** (political, managerial, intellectual): should moderate the process and be involved in communication, mobilization.



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A typical governance system includes:

- ❑ **Steering Group:** responsible for the overall performance, setting objectives, monitoring activities, supervising work, agreeing on results, offering political and institutional support and link with national and EU level,
 - aprox. 15 members from administration, business community, academia/RDI, etc.; is working based on a *Rules of procedures*.
- ❑ **Management Team:** responsible for implementing RIS3 under the guidance of the SG, providing secretariat to SG, networking with other regions, etc.
- ❑ **Working Groups:** gives support in building a regional consensus around the project and in engaging the business community,
 - can be sector-based or representing lower levels of territorial and administrative organization; is working based on *Terms of reference*.

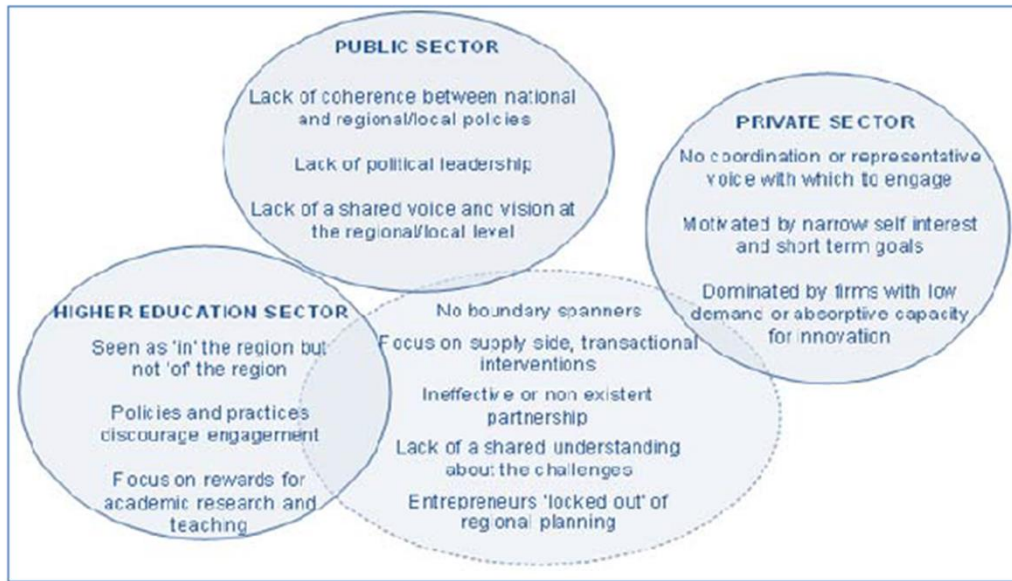
OTHER: Scientific Committee, Knowledge Leadership Group from inside and outside of region, etc.



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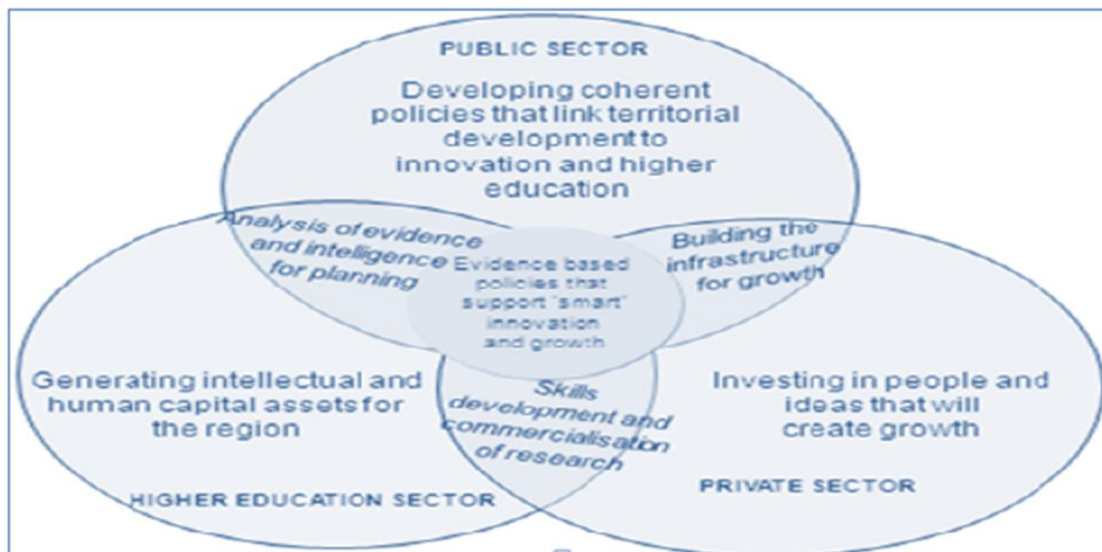
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Figure 3 - The Disconnected Region



SOURCE: RIS3 Guide, EC

Figure 4 - The connected region



SOURCE: RIS3 Guide, EC

RIS 3 DESIGN – PART II

FROM ANALYSES TO DEFINITION OF PRIORITIES AND OF POLICY MIX



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Definition of a shared vision

COMMUNICATION!

□ **Vision** - long term goal, that:

- ✓ takes into consideration the regional, national, European context (strategic objectives)
- ✓ points towards economic *transformation* and *renewal*
- ✓ ambitious but credible; a 'dream *based on reality*', bold and wide enough to accommodate realistic priorities and specific objectives
- ✓ integrates expectations of various stakeholders and attracts new ones -> *mobilizing power*
- ✓ informs and creates an *attractive image* for the targeted stakeholders, but also the general public
- ✓ takes into consideration most important social challenges

POLITICAL
ENDORSEMENT!



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Table 3 - Innovation strategies for different types of region according to knowledge intensity of productive fabric

Type of region	Main strategy		
	Building on current advantages (science push/technology-led or a mix)	Supporting socio-economic transformation	Catching-up: Towards the creation of knowledge-based capabilities
Knowledge hubs			
Knowledge and technology hubs	●	○	○
Knowledge-intensive city/capital districts	●	○	○
Industrial production zones			
S&T intensive production regions	●	○	○
Skill intensive regions	●	●	○
Medium-tech manufacturing and service providers	○	●	○
Traditional manufacturing regions	○	○	●
Non-S&T-driven regional systems			
Service-led and natural resource-based regions	○	○	●
Structural inertia or de-industrialising regions	○	●	○
Primary sector intensive regions	○	○	●

Legend: ● main priority; ○ strategic choice; ○ low priority.
Source: OECD 2011

SOURCE: RIS3 Guide, EC

work.org

Identification of priority areas



Concrete and achievable
Based on present and future competitive advantage and potential for excellence
Derived from the analyses of regional potential
Taking into consideration international, EU and national context

Limited in number
Both vertical and horizontal
Focus on existing strengths and emerging opportunities
Reflect SMART CHOICES!

Focused, precise expression of priorities

ENTREPRENEURIAL DISCOVERY PROCESS:
➤ Validate priorities ✓ Define niches



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Strategic objectives

- ❑ Should connect vision with priorities, as well as policy mix.
- ❑ Structural change is triggered through:
 - ❑ **Transition**: from an existing sector to a new one = new activities emerging from a solid bases founded on RD results,
 - ❑ **Modernization**: technological upgrading of an existing industry = improving efficiency and quality based on specific application of Key Enabling Technologies,
 - ❑ **Diversification**: potential synergies between an existing activity and a new one = making it more attractive and profitable,
 - ❑ **Radical foundation of a new domain**: co-emerge RD/innovation and related entrepreneurial activity = previously low growth activities suddenly become attractive.



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Priorities

- ❑ They catalyze structural change, economic transformation and the emergence of critical clusters, as well as:
 - ✓ Reflect smart choices;
 - ✓ Are limited in number to channel all resources towards the areas where the highest impact on the regional economy can be achieved;
 - ✓ Rely on both qualitative and quantitative data;
 - ✓ Focus both on existing strengths and opportunities that can emerge;
 - ✓ Are a result of a bottom-up and a top-down approach.
- ❑ **Types**:
 - ❑ *Vertical*: sectoral (economic sector or area), cross-sectoral, technological.
 - ❑ *Horizontal*: key enabling technologies, ICT (Digital Agenda), social innovation, etc.



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Selection should take into consideration:

- ✓ Critical mass and/or critical potential within each sector
- ✓ Existence of key assets and capabilities (incl. specialized skills and labour force),
- ✓ Diversification potential of these sectors, cross-sectors or domains,
- ✓ International position of the region as a local node in global value chains
- ✓ *Other*: international and European trends, societal challenges, unique resources, national and EU framework/context (incl. 4th Industrial Revolution), opportunities to use KET's, etc.

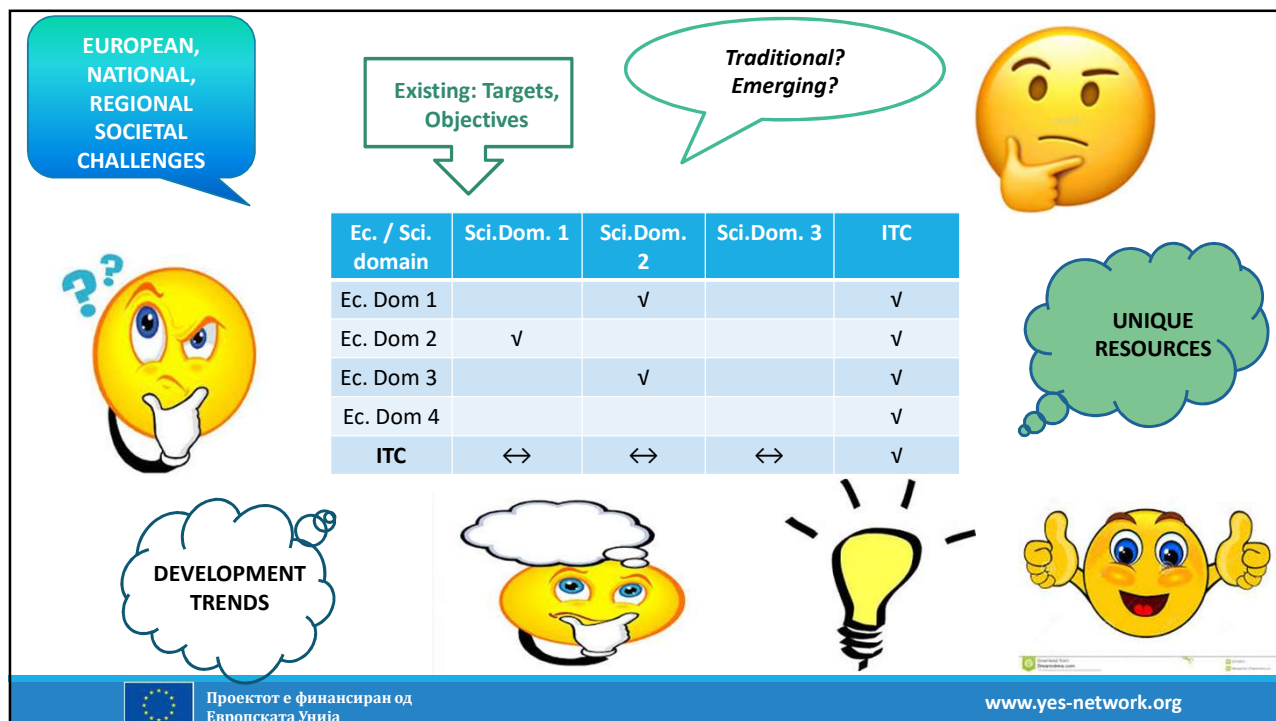
! Do not imitate other regions; prevent/manage interest groups' lobby for including too many priorities or maintaining status quo.

! Each priority should be expressed precisely, for ex. ICT for smart cities, wood-based solutions for eco-construction, etc. - EDPs are a good information source.



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Horizontal aspects

- Clusters
- Innovation friendly business environment for SMEs
- Research infrastructures, competence centers, scientific and technological parks
- Intermediaries: technology transfer centers,
- Universities-enterprise cooperation, entrepreneurial universities
- Key Enabling Technologies**
- Digital Agenda**
- Cultural and creative industries
- Internationalization
- Financial engineering instruments
- Innovative public procurement
- Green growth (eco-innovation)**
- Social innovation**



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Key Enabling Technologies

- Are a group of **6 technologies**: micro/nano-electronics, photonics, nanotechnology, industrial biotechnology, advanced materials, and, advanced manufacturing .
- They are:
 - Knowledge-intensive or R&D intensive (rapid innovation cycles, high capital expenditure, highly-skilled employment),
 - Enabling process, good, service innovation,
 - Multidisciplinary, cutting across many technology areas (convergence and integration).



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Digital Agenda

- ❑ Information and Communication Technologies are a powerful driver of innovation,
- ❑ The general purpose technology (4th Industrial Revolution), can be used to:
 - increase productivity and foster economic growth,
 - contribute to social inclusion, as well,
- ❑ **Digital Agenda for Europe** (flagship initiative) aims to contribute to the digital single market (e.g. networks, digital skills, e-health, e-education, e-content, efficient transport solutions and energy networks, sustainable (smart) cities, etc.).



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Green growth

- ❑ Innovation is essential in the transition towards a climate resilient, green economy, as well as, for environmental sustainability.
- ❑ Green growth targets:
 - **Sustainable energy:** 20-20-20 objectives on greenhouse gas emissions, energy efficiency and renewables
 - **Eco-innovation:** addresses resource scarcity, air/water/soil pollution, water efficiency; is promoted through technologies, business/process/organizational changes
 - **Nature:** targets sustainable management of resources as well as use of unique resources, bio-economy



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Social innovation

- ❑ A type of innovation that is **social in its end and through its means**; i.e. products, services, models that both meet social needs and create new social relationships or collaborations (good for society and enhances its capacity to act), and:
 - addresses a social demand or need or a societal challenge,
 - contributes to re-shaping the society: participation, empowerment, co-creation, etc.
 - promotes inclusive growth,
 - contributes to the reduction of the innovation divide by involving end users.



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Societal challenges 1

- ❑ **Health, Demographic Change and Wellbeing:** aims to keep older people active and independent for longer and supports the development of new, safer and more effective interventions (better health for all).
- ❑ **Food Security, Sustainable Agriculture and Forestry, Marine, Maritime and Inland Water Research and the Bioeconomy:** aims to support transition towards an optimal and renewable use of biological resources and towards sustainable primary production and processing systems. These systems will need to produce more food, fibre and other bio-based products with minimised inputs, environmental impact and greenhouse gas emissions, and with enhanced ecosystem services, zero waste and adequate societal value.
- ❑ **Secure, Clean and Efficient Energy:** aims to support the transition to a reliable, sustainable and competitive energy system.



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Societal challenges 2

- ❑ **Smart, Green and Integrated Transport:** aims to boost the competitiveness of the European transport industries and achieve a European transport system that is resource-efficient, climate-and-environmentally-friendly, safe and seamless for the benefit of all citizens, the economy and society.
- ❑ **Climate Action, Environment, Resource Efficiency and Raw Materials:** aims to increase EU competitiveness, raw materials security and improve wellbeing, as well as assure environmental integrity, resilience and sustainability (keeping average global warming below 2° C and enabling ecosystems and society to adapt to climate change and other environmental changes).
- ❑ **Europe in a changing world - Inclusive, innovative and reflective societies:** aims to face challenges linked to reducing inequality and social exclusion (NEETs, risk of poverty, unemployment).
- ❑ **Secure societies – Protecting freedom and security of Europe and its citizens:** aims to protect citizens, society and economy as well as infrastructures and services, prosperity, political stability and wellbeing.



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Entrepreneurial discovery process

- ❑ **Entrepreneurial discovery** is at the **core** of smart specialization process (is its key feature):
 - ✓ is a way to validate identified priority areas (opportunities in existing or new sectors),
 - ✓ it helps in identifying development niches (distinctive and original specializations),
 - ✓ leads to the definition of specific challenges and bottlenecks, linked to priority areas and the innovation ecosystem, as a whole,
 - ✓ supports the identification of delivery mechanisms,
 - ✓ leads to the generation of new project ideas,
 - ✓ promotes interaction and partnership creation between various types of stakeholders.



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B = know the market, know what they can produce
PA = support
RD = provides knowledge
NGOs/CSOs = reflect demand-side

EDP

BUSINESS
 manufacturing and services, primary sectors, financial sector, creative industries, social sector, large firms, SMEs, young entrepreneurs, students with business ideas, cluster and business organisations, etc.

RESEARCH
 public and private research bodies, universities, science and technology parks, Technology transfer offices, etc.

PUBLIC ADMINISTRATION
 Different departments, if relevant at different government levels, agencies e.g. for regional development, business advice, public procurement offices, incubators, etc.

CIVIL SOCIETY/USERS
 NGOs and citizens' initiatives related to societal challenges for which innovative solutions would be helpful, consumers associations, Talents! etc.

Entrepreneurial in composition and spirit

- is a regionally and business-driven, inclusive and open prioritization process,
- mobilizes talent by matching RTD + I capacities and business needs,
- to be place-based and to generate intensive experimentation and discoveries, it has to reflect *demand-side, market-facing* perspectives (innovation-user, interest groups of consumers, intermediaries).

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Establishing a coherent policy mix

- Involves the definition of **actions**, measures corresponding to the priorities.
- Includes actions/measures that be grouped under “operational” priorities.
- When defining the policy mix, attention should be paid to:
 - ✓ Identified challenges and needs in the smart specialization priority areas,
 - ✓ Identified bottlenecks of the innovation ecosystem,
 - ✓ Ways in which national-level policies can be embedded (if the case), or complementarities created with other policies,
 - ✓ Objectives, attributes and range of activities of the organization/institution responsible for the implementation,
 - ✓ Inclusion of both “Hard” (i.e. infrastructure) and “soft” measures,
 - ✓ Needs of actors and needs in terms of incentives,
 - ✓ Etc.



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Possible actions (examples OECD)

Regional innovation delivery instruments:

- **Knowledge generation:** e.g. research and development infrastructure support, human capital in science and technology, RD project support, networks and forms of cooperation, etc.
- **Knowledge diffusion:** e.g. support for technology transfer offices or science and technological parks, innovation awards or vouchers, mobility schemes, etc.
- **Knowledge exploitation:** e.g. support for incubators and hubs, innovative start-up and spin-off creation, innovation training, etc.

Instruments targeting SMEs:

- **Reactive tools** (input for innovation): e.g. funding for international R+D projects, incubators and technology centers, seed and venture capital funds, etc.
- **Proactive tools** (learning to innovate): e.g. cluster development, innovation vouchers, networking of companies and companies and R+D organizations, innovation management trainings, etc.



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Example of associated policy mix

Type of OECD region by economic profile	Degree of regional STI policy competences		
	High	Medium	Low
Medium-tech manufacturing and service providers Industrial production regions with relatively high knowledge absorptive capacities	Strategy: modernising productive activities towards value-added niches: 'Innovation ecosystem strategy'		
	<ul style="list-style-type: none"> • Supporting science-industry linkages (personnel exchange and placement schemes, technology advisory services, technology diffusion) • Regional agencies for innovation promotion, combining technology transfer with other services • Promote innovation start-ups (business angel networks, mentoring schemes, regional seed and venture capital funds) • Densification and internationalisation of regional production clusters • Regional public procurement oriented towards innovation 	<ul style="list-style-type: none"> • Technology platforms (linking technical schools and SMEs) • Technology transfer centres in relevant sectors, co-funded by national government • Regional advisory network, networks fostering synergies and complementarity between national agencies in the region and regional agencies • Innovation vouchers for SMEs • Support for young graduate recruitment in firms 	<ul style="list-style-type: none"> • Concentration of regional action on non-traded sectors • Support innovation in service or cultural industries • Small-scale cluster support with an orientation towards connection to global networks • Innovation vouchers, targeting 'innovation beginners'

Source: OECD 2011



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Possible actions (other examples)

- Research-development-innovation:** public and private RD organizations, technology transfer offices, etc.
 - use of key enabling technologies
 - eco-innovation
- Cooperation in innovation ecosystem:** e.g. clusters, entrepreneurial universities (university-enterprise), science and technology parks, etc.
- Innovative companies:** e.g. start-up and spin-off support, hubs and incubators, support for internationalization (scale-up), innovative public procurement, etc.
 - non-reimbursable funds
 - financial instruments
- Human resources:** e.g. STEM, mobility, PhD programmes, VET, etc.
- Digital Agenda:** digitalization, networks, digital skills, etc.
- Social innovation and Green Growth**



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RIS 3 DESIGN – PART III

PREPARING STRATEGY IMPLEMENTATION



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Preparing strategy implementation

- During the **last phase** of strategy elaboration:
 - Main steps of implementation, necessary for reaching targets and meeting objectives should be planned (**action plan**),
 - As means of implementation a project portfolio should be constructed, including also pilot projects as tools for policy experimentation and testing actions/measures from the policy mix, before transferring them to a larger scale (**project portfolio**),
 - Mechanisms should be defined based on which:
 - the evolution of strategy implementation could be periodically observed and, if necessary, adjustments could be made, in order to achieve planned results (**monitoring**),
 - the effects and impact of actions and results can be measured (**evaluation**).

Delivery mechanisms and projects

- **Action plan:**
 - sets rules, tools, actions that need to be taken in order to reach goals,
 - provides information about objectives, timeframes for implementation, funding sources, budget allocation, target groups, responsible actors.
- **Project portfolio:**
 - main tool for implementation,
 - projects generated at EDPs should be part of the portfolio,
 - other projects can be feed in through open announcements,
 - projects should be prioritized,
 - pilot projects and/or strategic projects should be defined.



Monitoring and evaluation

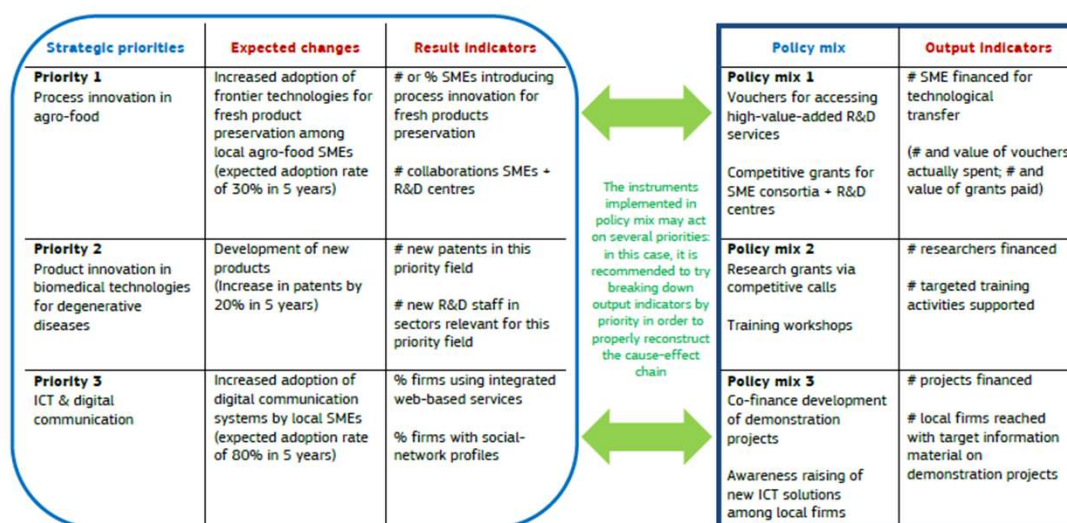
- **Monitoring** (performed by experts responsible for implementation):
 - to collect and process information about the degree of implementation and achievement of expected results,
 - monitoring mechanism should be able to capture and follow the expected changes that are foreseen.
 - **Evaluation** (performed by independent experts):
 - provides an ex-post validation of the intervention logic by assessing how and why policies, programmes and projects have actually had the desired effects,
 - is interlinked with and builds on monitoring data.
- ✓ definition of measurable targets is necessary to assess results of implementation and impact of implemented actions (**output** and **outcome/result** indicators reflecting clearly the intervention logic) – context indicators can also be used (comparing region to other similar regions).



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Figure 4: Dashboard for a monitoring system and its connection with RIS3 with illustrative examples



The instruments implemented in policy mix may act on several priorities: in this case, it is recommended to try breaking down output indicators by priority in order to properly reconstruct the cause-effect chain

- Baseline values (e.g. from survey launched with the support of key stakeholders)
 - Target values (determined in consultation with key stakeholders)
 - Timeframes

- Target values
 - Timeframes

SOURCE: RIS3 Monitoring Mechanisms, EC-JRC

Indicators

□ Already used indicator systems should be taken into consideration, for ex.:

- indicators from Innovation Scoreboard,
- indicators from EU Regulations,
- indicators from national strategies (if the case).

➤ Obtaining sector specific data and in some cases regional data can be a problem/challenge.

OUTPUT INDICATOR	RESULT INDICATOR
number of (<i>sector x</i>) enterprises supported	SMEs introducing product or process innovations as percentage of SMEs
number of (<i>sector x</i>) enterprises cooperating with research entities	Innovative SMEs collaborating with others as percentage of SMEs (%)
number of (<i>sector x</i>) researchers working in improved research facilities in FTE	



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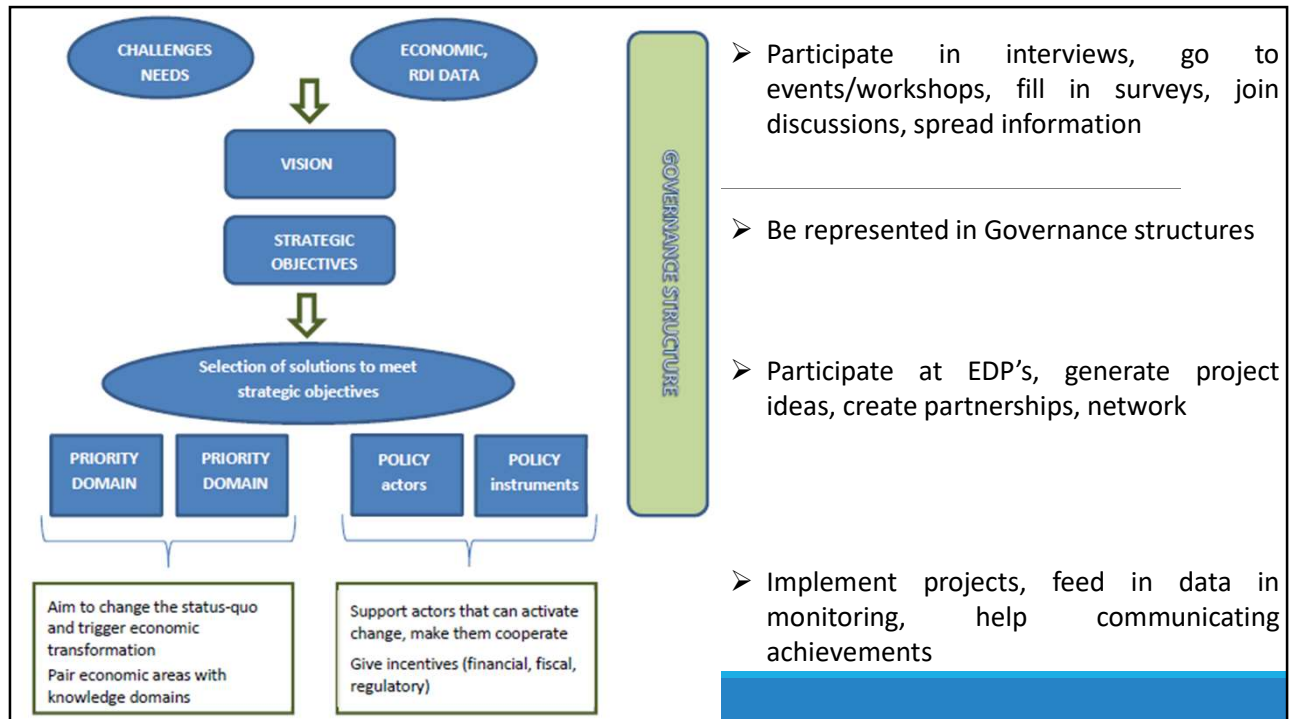
WRAP UP

ROLE OF CSOS IN SMART SPECIALIZATION: OPPORTUNITIES AND NEXT STEPS



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Selected BIBLIOGRAPHY and useful LINKS

- ❑ DG Regional Policy, Guide to Research and Innovation Strategies for Smart Specialisation (RIS3)

http://ec.europa.eu/regional_policy/sources/docgener/presenta/smart_specialisation/smart_ris3_2012.pdf

- ❑ C. Gianelle and A. Kleibrink, Monitoring Mechanisms for Smart Specialisation Strategies, S3 Policy Brief Series No. 13/2015

http://s3platform.jrc.ec.europa.eu/documents/20182/114948/JRC95458_Monitoring_Mechanisms_S3_Policy_Brief.pdf/ce74fd68-cd17-4574-950d-4551582655d2

- ❑ JRC, Supporting an Innovation Agenda for the Western Balkans - Tools and Methodologies

<https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/supporting-innovation-agenda-western-balkans-tools-and-methodologies>

- ❑ EU level Societal Challenges:

<https://ec.europa.eu/programmes/horizon2020/en/h2020-section/secure-societies-%E2%80%93-protecting-freedom-and-security-europe-and-its-citizens>



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Online training

□ Dr Elisabetta Marinelli, Dr Carlo Gianelle, Dr Fabrizio Guzzo, Ken Guy,

MOOC Monitoring Smart Specialisation Strategies

<https://iversity.org/en/courses/monitoring-smart-Specialisation-strategies>

Useful resources

□ Smart specialization platform

<http://s3platform.jrc.ec.europa.eu/>



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