



S3 - Smart Specialisation Strategies

# Getting started with the RIS3 KEY

JOANNEUM  
RESEARCH



BMWF<sup>a</sup>

Austrian Federal Ministry of Science  
and Research



The RIS3 KEY for self-assessment was developed by Joanneum Research Graz, in co-operation with and funded by BMWF, in the context of project “Drafting and Implementing Smart Specialisation Strategies” (2011-12) launched by the OECD Working Group on Innovation and Technology Policy (TIP). The authors wish to thank the European Commission, the OECD and our international expert partners in all three dimensions of the triple helix – government, business and academia – for their precious comments and feedback.

The RIS3 KEY is committed to practical use. Please contact the authors for other language versions or should you wish to translate the RIS3 KEY for local use.

Vienna and Graz, June 2012

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# 1. Getting started

## 1.1 What is Smart Specialisation?

The concept of smart specialisation can be defined as “an entrepreneurial process of discovery, identifying where a region can benefit from specialising in a particular area of science and technology”. The European Commission suggests that the development of smart specialisation strategies should aim at concentrating resources on the most promising areas of regional comparative advantage, e.g. on clusters, existing sectors and cross-sectoral activities, eco-innovation, high value-added markets or specific research areas. Thus, the concept calls for focusing on resources, singling out competitive advantages and aligning regional stakeholders and resources around a sound vision for the future.

## 1.2 What is a RIS3 Strategy?

A RIS3 Strategy puts the concept of smart specialisation into practice. As the RIS3 GUIDE (<http://s3platform.jrc.ec.europa.eu>) highlights, designing a research and innovation strategy for smart specialisation – a RIS3 – starts with the adoption of a shared vision for the transformation of the regional economy towards a more competitive and more sustainable one in a long-term perspective. The core of this design process lies in the definition of priorities for knowledge-based economic development, identified on the basis of the region’s unique strengths and potentials.

## 1.3 How can the RIS3 KEY for Self-Assessment help you to prepare your RIS3 Strategy?

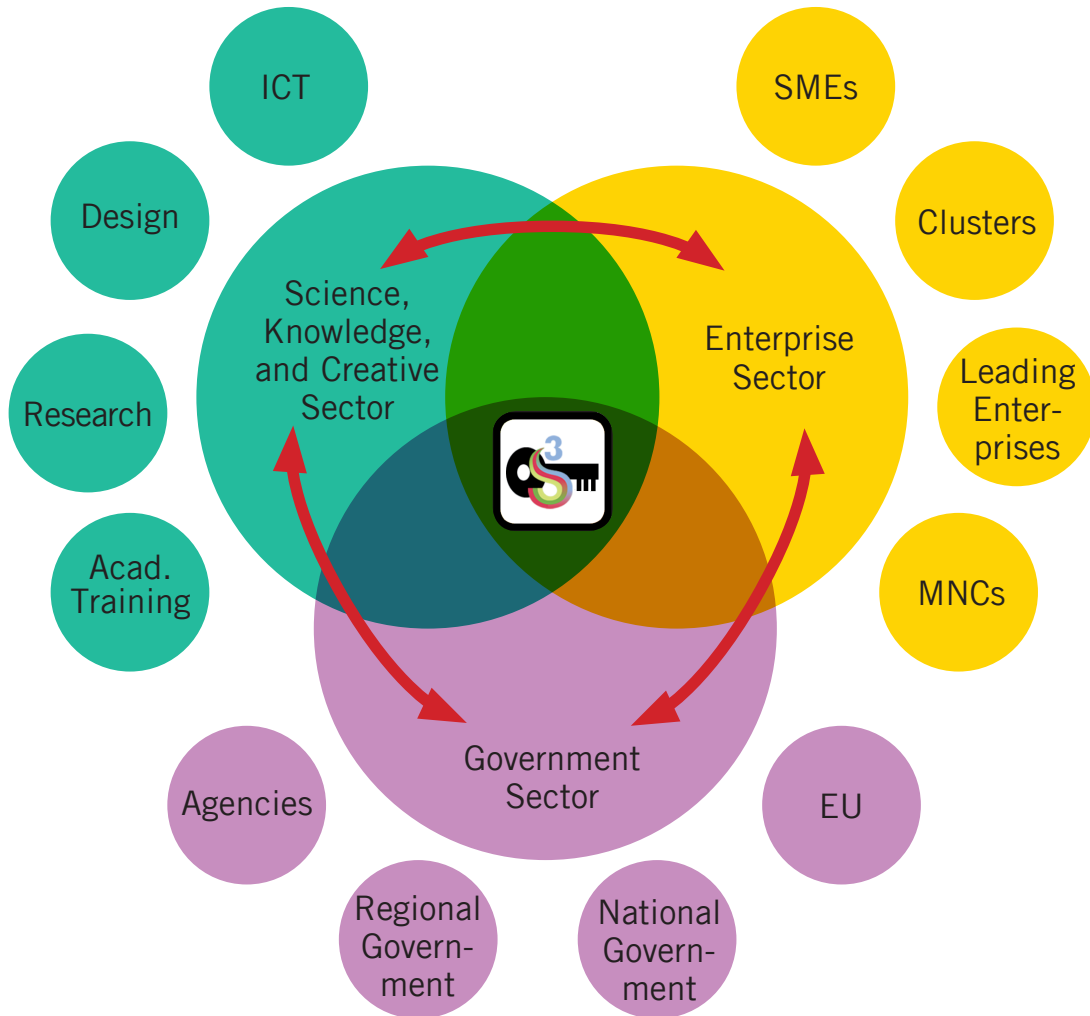
The RIS3 KEY is a well-grounded and easy to use tool to unlock the idea of smart specialisation for regions, and to mobilise the regional stakeholders for the strategy process. It helps regions to approach their RIS3 Strategies by stimulating communication and permitting a quick first assessment

of their status and potential that is needed to prepare a SWOT analysis as described in the European Commission's RIS3 GUIDE. It provides four sets of complementary questions that are addressing all relevant dimensions of a region ready and willing to start or improve their RIS3 development process. Accordingly, the following dimensions can be assessed: the enterprise sector, the science / knowledge & creative sector, the government sector and the regional innovation system as a whole – covering interactions between all three sectors.

The RIS3 self-assessment KEY will help your region to prepare further steps on the way to smart specialisation by

- identifying existing strengths and potentials for future development efforts,
- spotting remaining gaps and bottlenecks in the regional innovation system,
- mobilising the relevant institutions and actors to be involved in the RIS3 development process, and by
- defining possible starting points for your RIS3 development process.

## 1.4 Who should use the RIS3 KEY for Self-Assessment?



The RIS3 process is smart when it mobilises the whole triple helix of the regional innovation system. The RIS3 KEY thus invites three lead groups that each focus competences and interests, and also carry particular responsibilities for regional growth. Regional policy makers should initiate an informal assessment process and invite representatives from selected leading enterprises and lead institutions to go through the questions and report their results. Their co-operation is essential to identify a limited set of regional specialisations and develop a shared (and hence smart) vision and priorities:

- Regional leading enterprises and entrepreneurs: The leading industrial players, Hidden Champions and key entrepreneurial innovators have the expertise on the market potential of new ideas, technology and knowledge, and the economic base that already exists in a region. It is their “entrepreneurial discovery” of promising fields, cross-checked by the science sector. Since smart specialisation addresses enterprises as drivers of innovation they are invited to provide their insights and to share their perspective on the future regional innovation system.
- Regional policy makers and implementers: Members of regional governments and intermediary institutions are invited to organise such first self-assessments, to assess the governance sector of their region, to reconcile the expertise and interests of the two other groups and prepare a political RIS3 decision. This should cover all relevant government departments (enterprise, research, education, finance, etc.).
- Regional lead institutions: Representatives of the regional science, knowledge and creative sector, i.e. universities, research and technology organisations or innovation and design centres concentrate expertise on a region’s specific knowledge profile. Lead institutions develop a region’s skills & creativity potential, use and update research infrastructure, and push the region’s science & technology frontier. They are therefore indispensable partners in selecting a limited set of challenges and economic fields where investment could upgrade the whole region’s profile in global value chains. To make a RIS3 process smart, the regional lead institution’s assessment of the region must complement the entrepreneurial discovery of regional innovation fields.

## 2. 2 Guiding questions for the Self-Assessment

### 2.1 Assessment of the status and potential of the ENTERPRISE SECTOR

1. What are your regional economic key sectors and in which sectors are innovation networks / clusters present in your region? How did these strengths evolve over the last 10 to 15 years?
2. Which leading enterprises (i.e. large multinational firms and/or hidden champions and/or key entrepreneurial innovators) are situated in your region? Do they belong to the economic key sectors or are they situated in other sectors? How would you describe their structural involvement in regional planning / innovation policy development?
3. How competitive are your regional economic key sectors compared to European or international rivals? What are their competitive advantages and how did they evolve over the last 10 to 15 years?
4. Considering skills, expertise and knowledge: name up to three fields/challenges in which your region excels / has the potential to put itself on the map as a recognised world-class place of competence?
5. Which technologies, products, and global market opportunities do you conceive as very promising for your regional economy in the upcoming decade?
6. What upcoming threats and challenges do you see for the regional economic key sectors (and the regional economy as a whole) in the next decade?
7. How much internationalised is your regional economy (i.e. how export-oriented are the keys sectors, foreign direct investments) – which sectors are most open in that respect? To which destinations do most exports go?

8. Which economic sectors in your region are strong in R&D investment and technology development? Where do they get their new scientific and technological knowledge? From regional universities or from international R&D partners?
9. Do local universities supply regional enterprises with ample graduates– or do regional employers need to look abroad for qualified personnel?
10. How do you assess the climate for entrepreneurship in your region? Is it easy in your region to pursue innovative business ideas? Are people (incl. young people, university graduates, etc.) keen to start up their own business or do they rather prefer jobs in established enterprises or public sector? If not, what are the main barriers?
11. Do regional research and innovation priorities and the type of support (grants, loans, guarantees, vouchers, business services, access to laboratories, qualified personnel, and cooperation partners, etc.) offered correspond to your needs? What would be a suitable incentive / condition for you to decide to invest (more) into research, development and demonstration activities (inside your firm, or out-sourced to other firms or to public R&D providers)? What budget do you intend to invest in joint ventures with universities and technology centres of the region?



## 2.2 Assessment of the status and potential of the SCIENCE / KNOWLEDGE & CREATIVE SECTOR

1. Considering both academic and non-academic skills, expertise and knowledge, name up to three fields/challenges in which your region already excels or has the potential to put itself on the map as a recognised world-class place of competence?
2. What are the specific scientific strengths and research specialisations in your region (i.e. in which science fields are R&D investments, R&D personnel, publications, and patent applications concentrated)? Please name up to five. How did these strengths evolve in the last decade?
3. Are these scientific activities competitive on a European or global level? Where are potential partners, where are the main competitors located?
4. Which emerging new scientific competences (other than mentioned above) can be spotted in your region? Which research issues and future technologies do you conceive as most promising for the regional science / knowledge & creative sector in the next decade?
5. Which lead institutions in the science / knowledge and creative sector (i.e. universities, research and technology organisations, innovation & design centres) are situated in your region? How would you describe their structural involvement in regional planning / innovation policy development? How do their strengths correspond with the regional economic specialisation and are they linked with the industrial base?
6. How do your strategic R&D priorities correspond to the top priority themes of your region? Are regional investments from both public and private side in place to complement your own resources and attract co-funding and risk-sharing from the national (and, if applicable, EU) level in joint regional priority areas?

7. What important research infrastructures and creativity hotspots are established in your region? What is their influence to create smart specialisations for your region? How can you benefit from nearby infrastructures/hotspots in other regions?
8. How fit is your regional science/smart/creativity/skills base potential to address conjointly the grand challenges of society (health and ageing, climate change, urbanisation, energy, social inclusion etc)? How do regional lead institutions position themselves in global chains of knowledge and value (are they closely connected with institutions and companies in neighbour regions and internationally)?
9. How favourable are working conditions for researchers in your region? How much mobility between the public science and the private sector does exist in your region (i.e. are graduates/engineers/professors moving easily between universities and firms and back)? Do universities train scholars and graduates to become entrepreneurs?
10. Does current academic education fit to the needs of the regional economy – do regional employers absorb graduates or are graduates forced to look elsewhere?
11. How many permanent/temporary international research fellows, professors, and students do work in your region? What is the share of international staff in scientific/creative positions? How many co-operations with other international lead institutions does your region have?

## 2.3 Assessment of the GOVERNMENT SECTOR

1. What is the strategic approach to regional growth and innovation policy in your region (do you already have a long term vision, written strategic concepts and priorities...)?  
If yes – which main objectives and priorities have been defined; how was this strategy process organised (e.g. open and participative or rather driven by experts)?
2. Do you have an evaluation system for your regional growth and innovation policy – i.e. do you monitor regional growth and innovation policy programmes and measures regularly; do you conduct ex-post evaluations of past policy actions in your region? Are the evaluation results systematically used to inform policy decisions? Is there a specific mechanism in place?  
If yes - what main lessons have been learnt?
3. What capacities do you have in your regional government for strategy development and priority setting? Could you set up a RIS3 policy development process with your own competencies and resources or would you have to involve external experts?
4. Who is addressing innovation policy in your region (i.e. the EU, your national government, the regional government)? Are your regional innovation policy instruments well adjusted to instruments at other levels or do you see gaps and/or overlapping areas? Does the innovation support in your region cover only capacity building measures for innovation or also facilitate the emergence of demand for innovations?
5. Besides science or technology driven innovation, which other forms of innovation / economic transformation are supported by your region?
6. Do you have in your region autonomy for planning and budgeting innovation policy programmes and measures?  
If yes - how stable and predictable are public funds for innovation policy measures in your region?

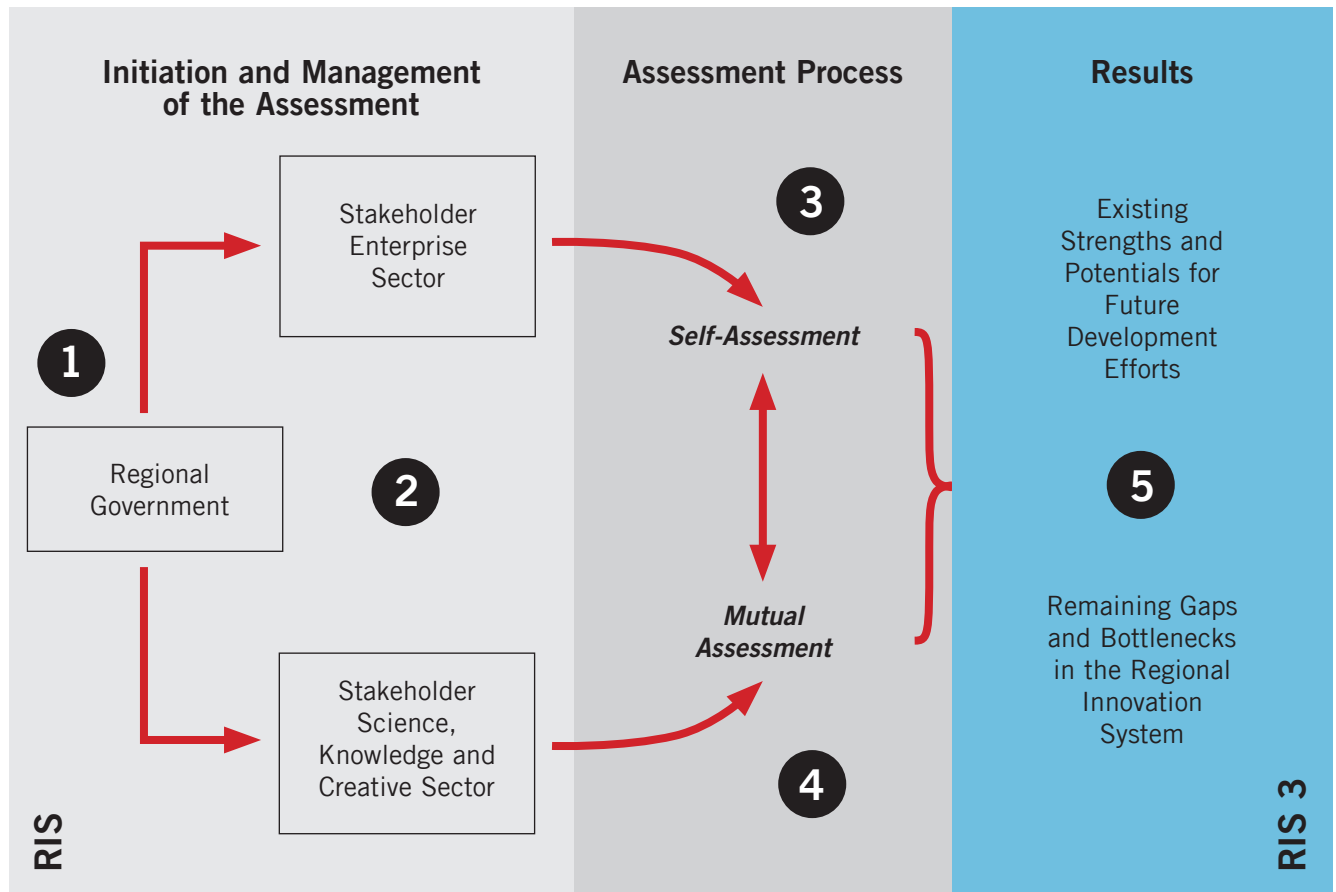
7. What is the budget allocated to research and innovation priorities in the next planning period, and what co-funding / risk-sharing scheme will be in place on the regional level? Which department(s) is/are in charge of innovation policies and budgets?
8. Is your region part of a (larger) functional region? If yes - do you have established co-ordination mechanisms and processes with neighbouring regions?
9. Does your regional innovation policy concept include a clear reflection/proposal on how to generate synergies between different European, national and regional funding sources, in particular between ERDF and the 7th Research Framework Programme, but also with other key programmes such as ESF, EAFRD and the Competitiveness and Innovation Programme and their respective successors?
10. How does the strategy link to relevant European priorities in the field of research and innovation (e.g. ESFRI, take-up of Key Enabling Technologies, Digital Agenda, help addressing societal challenges, etc.)? Does your strategy take into account / seek cooperation with other regions/ countries and their innovation support systems and research facilities? To what extent can the innovation support provided by your region (e.g. vouchers) be used outside your territory and outside public RTDI support providers?

## 2.4 Assessment of the smartness of the regional innovation and growth policy framework






1. How well does the science / knowledge & creative sector interact with the regional economy (i.e. do you have industry-science co-operations in you region, privately endowed chairs at universities, joint research infrastructures, and/or pro-active technology transfers, contract research, living labs, student placement schemes, brokerage and technology demonstration events, share of regional business representatives in university management boards)? Which sectors are most active in this respect and where do you have potential for improvement?
2. How do the government sector, the science / knowledge & creative sector, and the economic sector interact – i.e. are strategic RTDI policy priorities set jointly? Is there a shared development of regional innovation strategies? Is there a shared regional innovation system governance?
3. Is your existing regional innovation policy framework based on inter-departmental/inter-ministerial/inter-agency co-ordination and co-operation covering relevant policies (in particular between research/science policies and, economic development policies, but also with regard to other relevant policies such as for instance education, employment and rural development policies)? Does it assess/take into account the existing level of policy co-ordination within the region?
4. What are the main challenges your region will be facing in the next decade (economically, environmentally, socio-demographically etc.)? What are the main opportunities / emerging sectors? How can the regional enterprise sector and the science / knowledge & creative sector be mobilised to respond jointly to these challenges and opportunities?
5. What are the main challenges your region is facing with respect to RTDI performance (i.e. what are the major bottlenecks for a better overall innovation performance)? How can these bottlenecks be overcome by formulating and implementing jointly a RIS3 strategy?

6. Do scientific, technological, creative or skills strengths and specialisations fit to your regional economic needs? Where is the best match – where do you see the strongest mismatch?
7. Do perceptions of the enterprise sector and the science / knowledge & creative sector with regard to future promising technologies and products correspond?
8. How do your regional strengths and specialisations match, complement and build upon the profiles of your neighbouring and partner regions? In which fields could enhanced cross-sectoral co-operation create competitive advantages for an even larger region?

# 3. Annex 1: How to initiate a Self-Assessment for Smart Specialisation



## Five steps to start a RIS3 strategy process for your region:

- 1 → Initiate the self-assessment process and identify the relevant stakeholders in the enterprise sector and the science, knowledge & creative sector
- 2 → Prepare for the self-assessment: contact relevant stakeholders, distribute the guiding questions and organise necessary steps and milestones
- 3 → Perform an assessment of each sector by stakeholders stemming from the respective sector
- 4 → Perform an assessment of each sector with a mutual outside view (i.e. stakeholders from the enterprise sector assess the science and the government sector and vice versa)
- 5 → Prepare a first SWOT analysis as starting point for the RIS3 process. Use identified strengths, weaknesses, opportunities, and threats for the development of a shared vision



## 4. Annex 2: Glossary

Competitive Advantage	An advantage that a firm has over its competitors, allowing it to generate greater sales or margins and/or retain more customers than its competition. There can be many types of competitive advantages including the firm's cost structure, product offerings, distribution network and customer support.
COSME	Programme for the Competitiveness of Enterprises and SMEs 2014-2020
EAFRD	European Agricultural Fund for Rural Development
ERDF	European Regional Development Fund
ESF	European Social Fund
ESFRI	European Strategy Forum on Research Infrastructures
Hidden Champions	Small but highly successful companies, concealed behind a curtain of inconspicuousness, invisibility and sometimes secrecy
Horizon 2020	EU Framework Programme for Research and Innovation
Lead Institution	Universities, research and technology organisations, innovation & design centres that are shaping the regional knowledge base and skills help to unleash the innovative and creative capacity of a region.
Leading Enterprise	A regional enterprise that is characterised either by a size well beyond the regional average and is being successfully active on international markets or by being highly influential for the region's innovative (creative) potential.

R&D	Research and Development
RTDI	Research, Technological Development and Innovation
SWOT	A strategic planning method used for evaluating projects on the basis of their Strengths, Weaknesses, Opportunities and Threats.
Triple Helix Model of Innovation	Academia, government, and industry constitute the three helices that engage in triple helix innovation. Educational institutions of higher learning (colleges and universities) primarily represent academia in this paradigm. However, educational institutions at other levels are not precluded from contributing to, and participating in, triple helix innovation processes. Government may be represented by any of the three levels of government and their owned corporations: National (federal), regional (state), and local (municipal). There are no restrictions on the types of industry (firm) involvement in triple helix innovation processes: i.e. private corporations, partnerships or sole proprietorships may represent industry.

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