Coherent policies for Europe beyond 2020

Maximising the effectiveness of smart specialisation strategies for regional development

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There is clear evidence that Research and Innovation Strategies for Smart Specialisation (RIS3) have been a useful tool in developing innovation ecosystems in many regions in Europe. European and national policy-makers, the university sector and many other stakeholders are currently taking stock of past achievements in RIS3 strategies with a view to defining the priorities for the post-2020 period. This is a crucial moment for the EU to fully unlock the potential of all regions by building on the positive effects of this approach. Universities have an essential role to play in this process as they educate and supply highly-skilled graduates to all sectors of the regional economy and perform ground-breaking research, promising or leading to disruptive innovation. In order to maximise the effectiveness of RIS3 strategies in developing regional innovation ecosystems, it is important to fully capitalise on tangible and intangible assets that universities offer for the benefit of culture, society and the economy of their regions.

Based on the outcomes of the EUA workshops on regional innovation, EUA and its Expert Group on Research and Innovation Strategies for Smart Specialisation have developed key messages aimed at maximising the effectiveness of RIS3 strategies for regional development in the post-2020 period. In addition, this document builds on EUA’s funding paper (May 2017) and EUA’s recommendations for the next Framework Programme for Research and Innovation (November 2017).

Key success factors

1. Investing in human talent and skills to ensure enduring innovation
   - There is a need to focus more on human talent as it is indispensable for change to occur. Universities have a unique institutional profile that provides an essential link between education, research and innovation. Investing in even stronger links between these three sides of the “knowledge triangle” will support the development of human talent, which is the key success factor for innovation.

2. Enhancing the strategic involvement of universities in regional innovation ecosystems
   - Universities have proven to be a powerful network builder and strategic partner that plays a critical role in regional innovation ecosystems. To ensure the greatest impact, universities should be fully engaged in the “entrepreneurial discovery process” that brings together all relevant actors in developing the regional innovation ecosystem.
• Innovation and research are deeply interlinked. Therefore, an appropriate balance between fundamental, user-oriented basic research and applied research is crucial to ensure the diversity in knowledge creation and to balance disruptive and evolutionary innovation activities, which are fundamental for the long-term adaptability of regional economies.

• The strategic involvement of universities in the process of the design and implementation of RIS3 strategies should be introduced as an ex-ante conditionality for the use of European Structural and Investment Funds to support R&I.

3 Promoting the engagement of all EU regions without compromising excellence

• Less economically developed regions tend to be less innovative as a result of limited investment in R&I capacity to date. Targeted funding should be provided to ensure a wider engagement of emerging excellent scientists from less-developed regions in successful collaborative research teams, e.g. by expanding the existing instruments such as Horizon 2020 Teaming, Twinning and ERA Chairs, as well as by reinforcing new initiatives such as the ERC Visiting Fellowship.

• Closing the innovation gap among regions cannot be fully achieved without the investment of national funds. Public commitment to R&I at the regional level, coming both from EU and national authorities, is paramount and should be mutually reinforcing investments. In this regard, a priority is to tackle excessive complexity that leads to lack of efficiency and waste of resources. Different incentive mechanisms should be put in place to motivate governments to invest appropriately in R&I at the regional and national levels, also beyond the structural funding timeframe.

4 Strengthening collaboration to induce innovation at the regional level

• RIS3 strategies are proving most effective where there is strong cooperation between public authorities, universities, enterprises and civil society, both at the strategic design level as well as at the implementation level. A range of mechanisms that provide opportunities for policy-makers, researchers and entrepreneurs to interact and collaborate in the long-term should be developed. There is also a need for continuous political support to ensure strong and enduring cooperation.

• Collaboration should be reinforced not only within but also among regions. There are already many good examples of effective RIS3 in both long-standing EU states and more recent accession countries. Existing platforms that showcase RIS3 initiatives across Europe should be further expanded with a view to sharing good practice in research and innovation activities in various thematic fields.
Reinforcing synergies and multi-level governance

- Universities are among the most competitive beneficiaries of EU funds for R&I, contributing to regional development to a very large extent. In order to increase the impact of their activities in all the regions, there is a need for better compatibility and interaction between regional, national and European programmes for R&I. The synergetic use of funds can only be achieved with higher levels of strategic and practical alignment of different policies and administrative simplification of funding instruments.

- An effective multi-level governance system is also a significant factor for the success of RIS3 initiatives across Europe. Unfortunately, coherent strategic governance and administrative procedures that link regional, national and European levels are not always evident. Therefore, EU suggests that a comprehensive and joined-up multi-level approach, which fully takes into consideration the principle of subsidiarity, should be one of the *ex-ante* conditionalities for the use of the European Structural and Investment Funds (ESIF).
Rational and analysis

The objective of this policy position is to present key success factors proven to be successful in maximising the effectiveness of RIS3 strategies for regional development, including universities as key contributors, with a view to the negotiations of the next Multiannual Financial Framework. These key factors emerge from successful RIS3 strategies across Europe showcased by a number of universities and other R&I stakeholders at the EUA workshops on regional innovation in Poland (2016) and in Estonia (2017). The position also provides recommendations for further actions relevant to policy-makers at regional, national and European levels.

EUA has identified the following key success factors: (1) investing in human talent and skills to ensure enduring innovation, (2) enhancing the strategic involvement of universities in regional innovation ecosystems, (3) promoting the engagement of all EU regions without compromising excellence, (4) strengthening collaboration to induce innovation at the regional level, and (5) reinforcing synergies and multi-level governance.

Figure 1. Key success factors to maximise the effectiveness of RIS3 strategies from the university point of view
1. Investing in human talent and skills to ensure enduring innovation

The fundamental driver of any innovation process is the human factor. Innovative ideas are born thanks to people with the skills and abilities necessary to understand and address the needs of society. Physical infrastructures are necessary to build capacity for innovation, but are not sufficient for change to occur. Investment in human talent is thus essential to spark, take forward and catalyse long-term innovation.

Universities have an essential role in developing, attracting and retaining human talent in the regional innovation ecosystem. This is because they have a unique institutional profile that provides an essential link between education, research and innovation (the so-called “knowledge triangle”). One of their core activities is to educate future change-makers who enter the job market and enrich the human resources of public and private organisations of all shapes and sizes. They not only provide curricula in different thematic areas, but also develop general skills, problem-solving capacity and stimulate the entrepreneurial spirit. They play a crucial role in adapting regions to the new opportunities emerging from global trends such as digitalisation the artificial intelligence, as they can upskill and reskill people when new technologies change labour markets and the way we work. However, the role of universities cannot be reduced only to talent creation. Their ability to attract and retain students, as well as talented academic and research staff is also crucial for regional development and should be fully exploited. Investing in even stronger links between education and research will support the development, attraction and retention of human talent which is a pre-requisite for long-term innovation.

2. Enhancing the strategic involvement of universities in regional innovation ecosystems

There is increasing recognition across Europe that universities are a vital partner for regions in the design, implementation and impact assessment of regional development strategies. Many RIS3 initiatives of top-performing innovative regions show that universities are a critical component of regional innovation ecosystems. As shown in Figure 2, they contribute to regional development in various ways, such as enhancing regional innovation through their research activities, playing a crucial role in human capital and business development, as well as improving social equity.

However, there are still many regions that have not fully seized the opportunity of enhancing the collaboration with universities. In order to better leverage the benefits that universities bring to regional development across Europe, regions should embrace the relevance of the university sector for RIS3.
The analysis of Anna Valeroa and John Van Reenen presented in “The Economic Impact of Universities: Evidence from Across the Globe” (2016) shows that universities are more connected than ever before to the regional economy, having an important impact on competitiveness and performance of regions. To ensure the greatest impact, universities should be fully engaged in the “entrepreneurial discovery process” that brings together all relevant actors in developing the regional innovation ecosystem. In many regions, too much emphasis has been placed on the role of enterprises. This implies an excessive focus on short-term evolutionary innovation rather than on research as a source of disruptive innovation. As a result, heavy emphasis is given to supporting and incrementally developing existing activities rather than promoting regional diversification, which should be one of the main aims of RIS3. It is important to stress the role of research, encompassing user-oriented basic research and applied research, in providing diversity in knowledge creation which is fundamental for the long-term adaptability of a regional economy. This role is not fully covered by innovation in the private sector, which is typically more constrained and short-term oriented. An adequate balance of short-term evolutionary approaches and long-term research-enabled disruptive innovations is key for sustaining innovation ecosystems and will enable regions to minimise the phenomenon known as “middle-income trap”, which can emerge after a period of rapid economic growth.
The role of universities in supporting regional development is even more important in peripheral regions, which often lack the institutional concentration of core regions. In these regions, universities are asked to play a "capacity-building" role within the regional innovation ecosystem. To perform this role, it is important to ensure that there is mutual understanding between academic researchers and entrepreneurs about their aims and modus operandi. To this end, a range of mechanisms that provide opportunities for researchers and entrepreneurs to interact and collaborate should be developed. Some examples have proved to be effective to this aim, e.g. doctoral programmes or doctoral research projects co-financed by universities and companies, the co-design of teaching curricula addressing local needs, the provision of space within university buildings for the location of the R&I activity of SMEs, the set-up of clusters composed of researchers and entrepreneurs in specific areas.

Taking into consideration all the benefits that universities bring to regional development, their strategic involvement in the process of the design and implementation of RIS3 strategies should be introduced as an ex-ante conditionality for the use of European Structural and Investment Funds (ESIF) to support R&I. Our view is that regions should be required to include local universities in developing their regional strategies in order to receive EU financial support through ESIF for their planned research and innovation measures.

3. Promoting the engagement of all EU regions without compromising excellence

According to the 2017 European Innovation Scoreboard and Regional Innovation Scoreboard, the EU’s overall innovation performance is slowly improving, but the discrepancies across Europe remain high. Less economically developed regions still lag behind other areas of Europe in terms of R&I investment and innovation outputs. They often lack the institutional concentration of top-performing regions, face the fragmentation of research systems and the difficulties to connect to the wider R&I community, which have an impact on the participation and use of resources in Horizon 2020 and contribute to brain drain. Many top research actors from less research-intensive regions cannot engage according to their potential, and Europe as a whole loses out on their excellent ideas. If Europe wants to raise its overall research and innovation capacity, the catching-up process of less-developed regions should be widely supported.

As proposed in EUA’s position paper on the next Framework Programme for Research and Innovation, supplementary funding should be provided to ensure a wider engagement of emerging excellent scientists from less-developed and lower performing regions in successful collaborative research teams. The expansion of the existing instruments, such as Horizon 2020 Teaming, Twinning and ERA Chairs, as well as the reinforcement of new initiatives such as the ERC Visiting Fellowship programme, combined with the maintenance and promotion of high quality standards will contribute to the development of regions that are not yet as advanced as others on the development curve. The EU should also continue to simplify rules for participation and reduce the administrative burden of EU funding applications with a view to engage a wider range of beneficiaries, for example, applying the same accounting and audit standards on eligible costs across H2020 and structural funds instruments.
Furthermore, closing the innovation gap among regions cannot be achieved without the investment of national funds. During the years of the crisis, some European countries have reduced national research funding programmes while simultaneously pushing universities to secure funding from European programmes. It is, however, important to stress that EU funds are meant to reinforce the investment in R&I by national, regional and local governments and should be considered as a way to complement, rather than substitute national funds. Public commitment to R&I at the regional level, coming both from EU and national authorities, is paramount and should be mutually reinforcing investments. In this regard, a priority is to tackle excessive complexity that leads to lack of efficiency and waste of resources. In this context, incentive mechanisms should be developed to motivate governments to invest appropriately in R&I at the regional level, and beyond the structural funding timeframe.

4. **Strengthening collaboration to induce innovation at the regional level**

The major novelty of RIS3 is that it is a place-based policy that is highly dependent on regional conditions. For this reason, it is very difficult to provide a one-size-fits-all RIS3 model. However, successful RIS3 initiatives across Europe share a common denominator, i.e. intensive dialogue between different regional stakeholders, including universities, public authorities, businesses and civil society. In order to help regions leverage their RIS3 strategies, platforms for dialogue and action bringing together all relevant stakeholders should be put in place, along with focused oversight groups that include meaningful university representation. Success also requires sustained political support to ensure strong and enduring cooperation among relevant stakeholders in regional innovation.

Furthermore, strong collaboration within a region contributes to increasing a region’s responsiveness to changes in its innovation ecosystem, and indeed to drive positive changes, particularly related to newly emergent areas. Continuous dialogue amongst all relevant players should be pursued in order to assess and update innovation programmes, both at the strategic design level, as well as at the implementation level. This is essential to the “entrepreneurial discovery” in which many universities take the lead at the regional level.

Collaboration should be reinforced not only within, but also among regions. There are already many good examples of effective RIS3 in both long-standing EU states and more recent accession countries. Existing platforms that showcase RIS3 initiatives across Europe should be further expanded with a view to sharing good practice in research and innovation activities in various thematic fields. Examples of such initiatives are the [European Commission’s thematic Smart Specialisation Platforms](https://ec.europa.eu/programmes/regionales/edps/3814743-en) on agri-food, industrial modernisation and energy, which could be further expanded by setting up platforms for other areas of common interest, e.g. health, digitalisation, artificial intelligence. The platforms could also serve as a basis for the development of a central database of RIS3 initiatives in Europe to facilitate future initiatives and entries to existing collaborations, as well as to enhance dissemination of outcomes of past and ongoing projects. Another example of a platform for inter-regional collaboration is the [Territorial Connections](https://ec.europa.eu/programmes/regionales/edps/3814743-en) action, a joint initiative of France, Germany and Poland.
5. Reinforcing synergies and multi-level governance

Universities are among the most competitive beneficiaries of EU funds for R&I, contributing to regional development to a very large extent. In many top-performing innovative regions, the impact of university-based activities has been increased where there is a clearly structured policy linkage between different funding instruments for R&I. In order to spread this positive model to other regions there is a need for better compatibility and interaction between regional, national and European programmes for R&I, including the ESIF, the Framework Programmes for Research and Innovation and the European Fund for Strategic Investments. Diverse funding mechanisms and instruments should be combined to better contribute to regional R&I performance.

As proposed in EUA’s position paper on the next Framework Programme for Research and Innovation, one example could be to use the ESIF to endow the Seal of Excellence under Framework Programmes with a budget to support top-ranked, geographically-balanced collaborative consortia, in order to provide higher value for investment for member states and help reduce costs of unsuccessful research proposals that scored above the threshold. In order to address the complexities in the combined use of different funds, there is also a need for further harmonisation and administrative simplification of regulations. It is also important to note that synergy needs to be addressed systematically. Re-shaping and providing greater flexibility of the use of cohesion policy funds in Europe could be a pilot for such efforts. Additional flexibility could also bolster interregional cooperation.

An effective multi-level governance system is also a significant factor for the success of RIS3 initiatives across Europe. Unfortunately, coherent strategic governance and administrative procedures that link regional, national and European levels are not always evident. Therefore, EUA suggests that a comprehensive and joined-up multi-level approach, which fully takes into consideration the principle of subsidiarity, should be one of the ex-ante conditionalities for the use of ESIF. This means, in practice, that regions, with the support of national and European authorities, should set out how they will address regional, national and EU policy goals in an integrated way when implementing their RIS3 strategies.
Case studies

These case studies were presented at the EUA workshops on regional innovation in **Poland** (2016), hosted by the University of Warsaw, and in **Estonia** (2017), hosted by the University of Tartu.

**[1]** The following case studies show, in particular, how investment in human talent and skills can ensure long-term innovation:

The **University of Tartu** in Estonia established a strong corporate partnership programme between the university, local authorities and companies. In order to better respond to the needs of a dynamically developing region and to nurture the “entrepreneurial spirit” at the University of Tartu, the “entrepreneurial university” programme was launched to develop creativity and entrepreneurship in students through new courses and intellectual team work (UT Idea Lab). The [case study](#) was presented by Volli Kalm.

“Visual Sweden” is a part of the East Sweden Region’s RIS3 strategy, with a focus on visualisation, image analysis and simulation. Its goal is to make the region one of Europe’s most attractive innovation environments for visualisation, synthesis and analysis of visual information by 2030. **Linköping University** is one of the central actors in the initiative, providing an important link between education and research by developing necessary skills, as well as attracting world-class experts to the region and retaining them. The [case study](#) was presented by Jan Axelsson.

The broad mission of the Polish National Centre for Research and Development (NCRD) is to foster collaboration between universities, industry and SMEs and to encourage the commercialisation of research results through industry with a variety of programmes and funding instruments (“from idea to industry”). A significant proportion of NCRD grants goes to consortia, often led by universities, including the **University of Warsaw**. The importance of human talent and skills development is crucial, e.g. through programmes targeted at undergraduate and graduate students that include courses jointly developed by the university and the private sector. The [case study](#) was presented by Maciej Chorowski.

**[2]** The following case studies present, in particular, the strategic involvement of universities in regional innovation ecosystems:

Led by **Swansea University** in the United Kingdom, the AgorIP project works with academics, clinicians and industry to turn bright ideas into real-world products and services. AgorIP aspires to enable as much innovation as possible, from a variety of sources such as universities, health bodies or commercial enterprises. With the help of the Welsh Government and EU structural funds, AgorIP aims to create a national asset in the form of a pipeline of commercial opportunities, which will drive cutting-edge research and innovation for Wales’ global success. The [case study](#) was presented by Richard Davies.
The Technical University of Košice (TUKE) in Slovakia is an active partner in the governance structure of RIS3 in the region, which is formed by the governments of the Košice Region and Košice City, the regional branches of central government agencies and TUKE. It contributes to the regional innovation ecosystem through the education of highly-skilled graduates and activities in research and development, including patents, technology transfer, spin-offs and start-ups. TUKE also contributed to establishing research infrastructure and a competency centre for knowledge technologies which led to collaborations with multinational companies and small and medium-sized enterprises located in the Košice region and other parts of Slovakia. The case study was presented by Stanislav Kmet.

The aim of the RIS3 strategy for the Helsinki-Uusimaa Region in Finland is to achieve significant improvements in productivity and impact by focusing on five themes: urban cleantech, human healthtech, welfare city, digitalising industry and smart citizen. The spearhead industries for the Helsinki-Uusimaa Region have been recognised after extensive forecasting and strategy processes. Laurea University of Applied Science is one of the key organisations designing and implementing the RIS3 strategy in the Helsinki-Uusimaa Region. The case study was presented by Kyösti Väkeväinen and Johanna Juselius.

The following case studies demonstrate, in particular, how to promote the engagement of all EU regions:

The University of Graz in Austria is an active partner in fostering cross-border cooperation with its neighbouring countries in Southeast Europe. The collaboration activities include bilateral university agreements, teaching and research projects and dedicated programmes for student exchange. The university collaboration is complemented by cross-border business cooperation in areas such as mobility, eco- and healthtech, led by the federal government in Styria. The case study was presented by Peter Riedler.

The École Polytechnique Fédérale de Lausanne in Switzerland has established cooperation with countries in Eastern Europe in order to reinforce their capacity building by retaining and regaining researchers in their countries of origin, such as Croatia, through bi-national agreements. Its goal is to launch the careers of young, high-potential researchers through a tenure track pilot programme funded by Switzerland in order to stimulate strategic research and economically relevant technological innovation and limit the loss of intellectual capital from the country. The case study was presented by Olivier Kuttel.

The aim of the International Research Agendas Programme (IRAP) is to create world-class research centres in Poland. IRAP calls were set within the 20 Polish RIS3 strategies and open for Teaming beneficiaries. The programme offered significant opportunities for universities, e.g. to collaborate with excellent researchers from abroad and to attract foreign, early career researchers; to transfer best practice and policies in recruitment and IP management; as well as to cooperate with entrepreneurial partners. The case study was presented by Maciej Żylicz.
The following case studies present, in particular, how collaboration and good multi-level governance can induce innovation at the regional level:

The Biovalley, in the Central Ostrobothnia Region in Finland, is the heartland of business and expertise in the chemistry, bioeconomy and mineral economy sectors. In Biovalley, the research and development organisations undertake development work in close cooperation with companies and various organisations representing the interests of those in the region. This regional hub of 24 partners is led by **Kokkola University Consortium Chydenius**, which has a central role in the regional collaboration by facilitating communication among all stakeholders and providing research insight. Its role is also to design and deliver master’s programmes and continuing education in relevant fields. The case study was presented by Tanja Risikko.

The **University of Vaasa** is located in the Vaasa region in Finland, one of the largest energy and environmental industry concentrations in the Nordic countries. It actively invests in three collaborative research platforms in collaboration with industry and research partners: 1) Vaasa Energy Business Innovation Centre (VEBIC); 2) DIGITAL ECONOMY for the digitalisation of businesses and innovations; 3) INNOVATION LAB for design thinking, open, user and cross-governmental innovation. The case study was presented by Jari Kuusisto.

In the South Moravian Region in Czech Republic, cooperation between the regional authorities, their municipalities and universities, particularly **Masaryk University** led to an increase of the region’s R&D intensity, reduced unemployment and resulted in numerous collaborative research and innovation projects between universities and companies. The involvement of Masaryk University in the governance structure of the regional RIS3 strategy, side by side with other key stakeholders from the triple helix, proved to be a key success factor in addition to strong, stable political commitment; a strategic focus and orientation towards results; reliable intermediaries and trust among all parties involved. The case study was presented by Martin Bareš and Petr Chládek.

In 2009, Spain launched “**International Campus of Excellence**” whose goal was to foster public and private strategic partnerships between universities, other research institutions and companies. It also promoted specialisation with a focus on excellence and contributed to the development of regional economic ecosystems, social cohesion and employment. The program was managed by the Ministry of Education in collaboration with the Ministry of Science and Innovation and the support of the Autonomous Communities. The case study was presented by Jaume Carot.

**Territorial Connections** is a new initiative proposed by the National Rectors’ Conferences of France (CPU), Germany (HRK) and Poland (CRASP). Its originality resides in a novel way to leverage the use of RIS3 strategies by reinforcing collaboration of regions with similar priorities. To reinforce the innovation ecosystems’ cooperation, special attention is given to the knowledge triangle interfaces. The initiative is expected to create dynamics that take into account rapid changes in knowledge, the need for territories to adapt and co-create more integrated development strategies at the European level. The case study was presented by Frédéric Benhamou.
The following case studies show, in particular, how regions generated added-value through the synergetic use of R&I funds:

Significant capacity building for fundamental research and engineering took place in Ireland from 1998 to 2010 through the European Regional Development Fund support and national funding for R&I. Funding allocation was based on four criteria: qualified, local excellence; matching funding from private sources; ability to secure funding from the EU Framework Programme for Research and Innovation; and, collaboration with industry partners. In 2014, Irish research funding was aligned with RIS3 leading to establishment of a number of university-industry research centres; specific technology centres; and a national network of University Technology Transfer Offices situated within a single umbrella group, “Knowledge Transfer Ireland”. The case study was presented by Ray O’Neill.
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The European University Association (EUA) is the representative organisation of universities and national rectors’ conferences in 47 European countries. EUA plays a crucial role in the Bologna Process and in influencing EU policies on higher education, research and innovation. Thanks to its interaction with a range of other European and international organisations EUA ensures that the independent voice of European universities is heard wherever decisions are being taken that will impact their activities.

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