SUMMARY AND KEY OUTCOMES - Peer Learning Activity

“The Regional Knowledge Triangle: linking higher education, research and innovation in support of regional development”

Krakow, 16-17 September 2013

POLICY CONTEXT

European and national economic and employment policies frequently highlight the strategically important role of higher education institutions (HEIs) in economic and social development as drivers of human capital and skills development and actors in national and regional innovation systems. One of the five key priorities of the EU modernisation agenda for higher education is developing the knowledge triangle that links education, research and innovation at the national, regional and local level. The modernisation agenda calls upon Members States and HEIs to “promote the systemic involvement of HEIs in the development of integrated local and regional development plans and target regional support towards HE-business co-operation particularly for the creation of regional hubs of excellence and specialisation.”

To support these strategic goals, the EU has re-focused elements of its new generation of programme support, provided through the European Structural and Investment Funds, ERASMUS+ (particularly Knowledge Alliances which support university-industry co-operation and two-way mobility of staff and students) and Horizon 2020 (which includes the Marie Skłodowska-Curie Actions to support doctoral training and researcher mobility and the European Institute of Technology, with its focus on knowledge triangle cooperation).

Significant financial support will be available through the European Structural and Investment Funds for 2014-2020, particularly for less developed regions which will receive almost 50% of the total of 325.2 billion euros. Regional smart specialisation strategies are a pre-requisite for investments in research and innovation (Thematic Priority 1) under the new programming period. HEIs can contribute to, or become lead institutions in the design and implementation of Research and Innovation Strategies for Smart Specialisation (RIS3) through their Research, Development and Innovation (RDI) and education that contribute to the transformation of regional economies.
PLA ON THE REGIONAL KNOWLEDGE TRIANGLE

Peer Learning Activities (PLAs) are seminars organised within the framework of the Open Method of Coordination within the Thematic Working Group on the Modernisation of Higher Education (TWG-MHE). They are hosted by interested countries and bring together ministry and HEI representatives from a maximum of ten countries to share experience and take forward the activities of ET2020 and the Higher Education Modernisation Agenda.

This document summarises the key outcomes of the PLA on the Regional Knowledge Triangle hosted by the Polish Ministry of Higher Education and Science in Krakow in September 2013. The PLA brought together representatives of ministries and HEIs from nine countries (Austria, Bulgaria, Spain, Finland, Ireland, Latvia, Norway, Poland and Portugal) as well as ETUCE; it drew on expert interventions and examples from across Europe. John Goddard (University of Newcastle) and Ewa Okoń-Horodyńska (Jagiellonian University) attended parts of the meeting as invited experts.

The purpose of the PLA was "to explore how HEIs can contribute effectively to the development of their regions and to provide a guiding framework for higher education in regional development as well as a portfolio of good practice examples drawing on Member States’ developments and reforms". More specifically, the PLA aimed to address the following key questions:

1. What are the framework conditions and actions needed at national and regional level to support and maximise HEIs’ contribution to regional innovation? What is the role of ministries of education / science in this context?
2. What kinds of publicly-supported projects are effective in promoting knowledge exchange and cooperation between higher education and economic actors in the areas of education and research and innovation?
3. What can be done to develop educational programmes in higher education which effectively support regional human capital needs?
4. What can be done to develop to support knowledge exchange and entrepreneurship in practice?

1 For information on the attendance, see Annex 1
1. THE CHALLENGE: GETTING HEIS ENGAGED IN THE REGIONAL KNOWLEDGE TRIANGLE

On a theoretical level, the key ways that HEIs can contribute to development and growth in their regions include: i) enhancing innovation through research activities, ii) promoting enterprise and business development and growth, iii) contributing to the development of (regional) human capital and skills, and iv) improving environmental and social conditions through regeneration and cultural development activities. HEIs are increasingly involved in transactional services which involve short-term activities in response to clearly articulated external demand. These fixed-term, output-driven activities can be distinguished from transformational activities that bring long-term benefits to the region.

<table>
<thead>
<tr>
<th>‘Transactional’ services</th>
<th>Transformational activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of need / demand</td>
<td>stated need or demand</td>
</tr>
<tr>
<td>Type of approach</td>
<td>output driven approach</td>
</tr>
<tr>
<td>Type of objectives</td>
<td>clear objectives</td>
</tr>
<tr>
<td>Link to time</td>
<td>usually time bound</td>
</tr>
</tbody>
</table>

Table 1. Transactional vs. Transformational interventions (EU 2011, Connecting universities to Regional Growth. A Practical Guide. European Union. Regional Policy)

Barriers and constraints

While HEIs’ role in the local and regional knowledge triangle has been encouraged by both the EU and, to varying degrees, also by Member State authorities, HEIs continue to face barriers which hinder them in playing their role in this domain. In general, HEIs have often had a limited role in (or been completely absent from) national or regional innovation strategies.

Key cross-cutting constraints that were highlighted in the PLA expert presentations affect national and regional policy and HEI strategies. They include:

- A "technology push" or linear model of knowledge production and innovation that continues to dominate policies and practices in much of Europe, whereas innovation depends on a more complex set of (often unpredictable) interactions between HEIs and outside actors and the “demand pull”;
- The neglect of the potential contribution of the Arts, Humanities and Social Sciences to innovation, with "innovation" activities and university networking frequently focused exclusively on hard science and engineering;
- The focus on the "triple helix" for regional innovation (cooperation between universities, business and government) that has ignored the role of the local population and civil society. John Goddard proposes an alternative model of a "quadruple helix", in which civil society constitutes a "fourth partner" for cooperation;
- A limited focus on the role of teaching and learning in knowledge transfer;
A lack of strategic coordination of the mechanisms created by member countries and institutions to facilitate HEIs’ role in regional knowledge triangle and a failure to create greater synergies or maximum impact.

Specific constraints at the policy level include a lack of a territorial dimension to higher education policy and the uncoordinated HE, Science and Technology and territorial policy at national level. At the same time, most HEIs are encouraged to meet national and international research and education aspirations, rather than maximise their utility within a regional or local context. There are also barriers between different types of higher education (particularly vocationally-oriented and research-intensive) HEIs which undermines collaborative efforts of HEIs in a region.

There are also a range of barriers at the regional level associated with a) regional governance, b) economic structures and c) the challenge of smart specialisation:

a) Higher education is not usually a competence of local government and the principles underlying why HEIs can be important agents in economic development have not always been well understood by regional authorities. Regional level powers/authority are often limited and local governments tend to be fragmented. There may also be intra-regional competition and urban/rural tensions that limit HEIs' ability to effectively engage in regional knowledge triangle.

b) HEIs may also face barriers due to the structure of regional industry: the private sector R&D base can be weak and SMEs that dominate most regional economies often lack critical mass and absorptive capacity related to knowledge produced in HEIs. In many regions the fragmented SME base has difficulties in articulating demand for higher education R&D.

c) A newer challenge at the regional level is associated to the regional smart specialisation process: "Smart Specialisation" implies that the scarce public resources and investment to support knowledge-based economic development will be concentrated in targeted priority areas where they are likely to have the greatest impact. Regions developing smart specialisation strategies need to prioritise specific R&D and innovation strengths in which they have potential to develop strong competitive advantages. The focus on the link to actual or potential industrial capabilities requires a selective and “smarter” match with research capabilities. These capabilities may not necessarily correspond with leading areas of scientific strength in local HEIs. Smart specialisation does not necessarily imply matching research fields to the current industrial profile because this could lead to ‘lock in’ and ‘path dependence’. For this reason HEIs and regions need to establish how HEIs’ diverse research base can contribute to long term development that underpins innovation (e.g. knowledge spillovers, facilitating related variety amongst sectors, supporting the uptake of platform technologies).

Barriers at the HEI level relate to the institutional governance, leadership and management, and funding. Despite efforts made by the national governments to reform higher education, HEIs may lack the institutional autonomy needed to respond to regional opportunities and challenges due to their limited control over
their facilities, senior academic appointments, education offer etc. Many research-intensive universities also remain loosely coupled organisations with relatively weak management capacity and horizontal coordination functions. Partnerships important to the regional knowledge triangle are often confined to senior management and/or isolated entrepreneurial academics, but not scaled up at the institutional level. Intermediate organisations such as science parks and centres for continuing education that have been specifically created to bridge the gap between HEIs and external stakeholders are often detached from the academic core of HEIs. While some Member States e.g. the Nordic countries have developed third stream \(^2\) legislation to boost HEIs role in knowledge transfer, exchange and partnerships, there is usually no core funding for this purpose. Incentive structures to promote regional engagement in HE have remain under-developed.

2. RESPONSES AT NATIONAL, REGIONAL AND HEI LEVEL

In bringing together national policy makers and representatives of HEIs, the PLA sought to explore how the challenges outlined above can be tackled effectively from the perspective of policy makers and university strategists.

2.1 NATIONAL POLICY FRAMEWORKS

The examples of policy frameworks discussed in the PLA ranged from the national higher education reform programmes that encompass regional engagement as one component, to national programmes for regional development and innovation where HEIs are one of the key players.

The national **higher education reform programmes** that encompass regional engagement as one of the key components include:

- Austria’s new university performance contract system that incorporates “Location Concepts”;
- Bulgaria’s focus on reforming education through investing in teachers and new industry relevant curricula);
- The Campus of International Excellence initiative in Spain;
- Ireland’s National Strategy for Higher Education to 2030 and the Strategic Innovation Fund;
- Portugal’s polytechnics and CET programmes.

The national **programmes for regional development and innovation where HEIs are one of the key players** include:

- Poland’s integrated strategies to boost knowledge triangle;
- Norway’s Regional Research Funds and the VRI programme;

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\(^2\) Third stream activity is activity that higher education institutions undertake, beyond teaching and academic research, in pursuit of relations with and services to industry and the wider community. Third stream activity can take a number of forms ranging for example from technology transfer to student volunteering. There is a growing literature that emphasises that third stream activities should be embedded in the core functions of HEIs and delivered through research and teaching.
• Finland’s Innovative Cities programme INKA.

The national approaches presented in the PLA may be further classified on the basis of the following common objectives (see Table 2):

• National vs specifically regional focus (i.e. university-business cooperation on national scale or specifically regional);
• Focus on knowledge exchange / innovation vs focus on human capital;
• The extent to which they focus on the promotion of institutional specialisation (including linked to regional smart specialisation) and (the related) system diversification;
• The extent to which they focus on university-business cooperation;
• The extent to which they focus on promotion of cooperation between HEIs (poles / centres of excellence);
• The role for EU Structural Funds.

2.1.1. The national higher education reform programmes with regional engagement as one of the key components

The PLA highlighted five cases of national higher education reform programmes from Spain, Austria, Ireland, Bulgaria and Portugal which feature regional engagement as one of their key components:\(^3\)

• In Austria, the Federal Ministry of Education and Science has adapted its university performance contract system in order to mobilise universities as lead organisations in smart specialisation strategies, by using Location Concepts.
• In Bulgaria, the government has focused on building capacity through large-scale EU funded projects that develop teachers and new industry relevant curricula.
• In Spain, the Campus of International Excellence was designed to address the key weaknesses of the Spanish higher education system including weaknesses in the knowledge triangle.
• In Ireland, the National Strategy for Higher Education to 2030 has identified engagement with wider society as one of the three missions of HEIs and encourages HEIs to systematically ‘engage with the communities they serve’. Ireland’s Strategic Innovation Fund has provided a funding framework for modernisation of higher education including support for knowledge triangle activities.
• In Portugal, the higher education policy has a less explicit regional dimension, but polytechnics provide specific courses designed to respond to regional skills needs: CET (Curso de Especialização Tecnológica).

\(^3\) For full case studies, see Annex 2.
<table>
<thead>
<tr>
<th>National policy programmes supporting HEIs’ regional engagement</th>
<th>Regional policy /innovation focus with strong role for HEIs vs. HEI focus with strong role for regional dimension/innovation</th>
<th>National vs. regional focus (i.e. uni-business cooperation on national scale or specifically regional)</th>
<th>Focus on knowledge exchange/innovation vs. focus on human capital</th>
<th>Focus on institutional specialisation, incl. regional smart specialisation and system diversification</th>
<th>Focus on university-business cooperation</th>
<th>Focus on cooperation between HEIs e.g. poles or centres of excellence</th>
<th>Role of EU Structural Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU Location Concept</td>
<td>Regional and HEI focus</td>
<td>Regional focus</td>
<td>Knowledge transfer/innovation</td>
<td>Regional smart specialisation is the focus of the Location Concept initiative.</td>
<td>The Location Concept requires a HEI positioning with industry and business partners.</td>
<td>Not explicit</td>
<td>Potential</td>
</tr>
<tr>
<td>BL Building capacity among HE staff and students</td>
<td>HEI focus</td>
<td>National focus</td>
<td>Human capital</td>
<td>Not clear</td>
<td>Implicit with “Student Practices” (2012-2014)</td>
<td>Not explicit</td>
<td>Strong</td>
</tr>
<tr>
<td>ES Campus of International Excellence (CEI)</td>
<td>HEI focus</td>
<td>National and regional (CEIR)</td>
<td>Knowledge transfer/innovation and human capital</td>
<td>CEIs aim at enhancing institutional specialisation.</td>
<td>CEIs aim at strengthening the knowledge triangle.</td>
<td>Explicit</td>
<td>Potential</td>
</tr>
<tr>
<td>IE National Strategy for HE and Strategic Innovation Fund (SIF)</td>
<td>HEI focus</td>
<td>National focus</td>
<td>Knowledge transfer/innovation and human capital</td>
<td>The national strategy supports specialisation of HEIs</td>
<td>Strong focus e.g. through SIF, Enterprise Partnership scheme and REAP</td>
<td>Explicit in National HE strategy and SIF</td>
<td>Strong</td>
</tr>
<tr>
<td>PT Polytechnics and CETs</td>
<td>HEI focus</td>
<td>Regional focus</td>
<td>Knowledge transfer/innovation and human capital</td>
<td>Polytechnics have a dedicated regional role and have developed regional specialisations.</td>
<td>CETs are industry relevant post-secondary education programmes</td>
<td>Not explicit</td>
<td>Potential</td>
</tr>
<tr>
<td>PL Integrated strategies and education and science reforms to boost the knowledge triangle</td>
<td>Regional focus</td>
<td>National and regional focus</td>
<td>Knowledge transfer/innovation and human capital</td>
<td>VET sector is seen as a major player in regional skills development.</td>
<td>Explicit in Human Capital development strategy and “500 top innovators”, POWER, Kadtech (for SMEs)</td>
<td>Not explicit</td>
<td>Strong</td>
</tr>
<tr>
<td>NO Regional Research funds and Programme for Regional RDI (VRI)</td>
<td>Regional focus</td>
<td>Regional focus</td>
<td>Knowledge transfer/innovation and human capital</td>
<td>Funding is granted on the basis of regional specialisation strategies.</td>
<td>The VRI brings together HEIs and industry.</td>
<td>Not explicit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>FI Innovative Cities (INKA)</td>
<td>Regional focus</td>
<td>Regional focus</td>
<td>Knowledge transfer/innovation</td>
<td>Each innovative city has a HEI(s) that support a demand-led innovation hub.</td>
<td>INKA supports local demand-based hubs that build on knowledge triangle</td>
<td>Explicit</td>
<td>Potential</td>
</tr>
</tbody>
</table>

Table 2. National policy programmes supporting HEIs’ regional engagement
Austria: The Location Concepts in the university system

The Austrian Federal Ministry of Science and Research is encouraging universities to take a proactive role in the knowledge triangle in order to mobilise and underpin universities’ role as ‘lead institutions’ in regional smart specialisation strategies. As part of the universities’ three year performance contracts the ministry has invited Austrian universities to position themselves in their region within a critical network of strategic partners in industry, business and academia in a self-selected area of close collaboration and to integrate their regional role into the internationalisation strategy for research. Altogether 15 out of 22 universities are participating in the process that involves self-assessment, identification of key partners/networks, target setting and monitoring by mid-2014. The ministry plays an active role in the process: it negotiates with the HEIs, monitors the implementation of the strategies, provides feedback on the strategic outcomes and, where necessary, brokers between the players in higher education and research sector at the regional and national level. No additional funding has been allocated for HEIs for the process, but the outcomes may impact national funding allocation in future.

Bulgaria: building capacity among HE staff and students

Bulgaria has no dedicated strategy to address HEIs regional role but the National Strategy for the Development of Research 2020 emphasises the need to develop a more efficient knowledge triangle, by more active industry involvement in research activities and joint development of research infrastructure. In practice knowledge triangle collaboration focuses on university career centres, board of trustees in public HEIs, training courses and curricula development and other project based activities. National projects and initiatives funded by the EU Structural Funds, Education and Training or Research programmes are building capacity at regional level. A key project in this area has been the “Raising the qualification of higher schools’ lecturers” (2008-2011) that enhanced the professional competences of more than 1 000 teachers with focus on the quality of teaching and learning outcomes, by offering training courses in ICT and languages and seminars on current HE issues. The Phase II in 2013-2014 will modernise higher education curricula of 40 or more HEIs in line with the labour market needs. Another project on Students Practices in 2012-2014 (BGN 56 mill) will offer practical training for more than 60 000 students in order to improve graduate employability and industry-university collaboration.

Spain: The Campus of International Excellence

In Spain, the national support for HEIs’ role in regional Knowledge Triangle has been channelled through the Campus of International Excellence (CEI) programme. The CEI was designed to implement the Spanish University Strategy 2015 (est. 2010) in order to accelerate adaptation of the Spanish higher education system to the European Higher Education area and to address the key challenges of Spanish higher education. The CEI programme, that was launched and funded by the Ministry of Education and Culture, aimed to encourage strategic aggregation of universities and
industry, promote stronger specialisation, strengthen internationalisation, research and innovation, and contribute to the socio-economic development of regions. Three consecutive calls (2009, 2010, 2011) resulted to the selection of 31 CEIs including 16 CEIs and 15 CEIs of Regional Interest (CEIRs). The aggregate budget for Campus of International Excellence programme was 688 million euros.  

The implementation of CEIs has slowed down during the economic crisis; regional governments have also substituted regional money with the CEI funds. Currently, 50% of the CEIs are in progress without two years of extra funding. The CEI evaluation began in 2012; currently the CEIs launched in 2010 are under evaluation.

Ireland: The National Strategy for Higher Education and Strategic Innovation Fund (SIF)

Ireland has no dedicated strategy addressing the role of higher education in regional development, but the National Strategy for Higher Education to 2030 (est. 2011) has identified engagement with wider society as one of the three missions of HEIs and encourages HEIs to systematically ‘engage with the communities they serve’.

The Strategic Innovation Fund SIF (2006-2012) has provided a competitive funding framework for innovative projects in a range of strategic areas of quality and effectiveness across the higher education sector. The original funding allocation for SIF over 2006 to 2013 was 510 million euro, but ultimately the rate of funding was constrained. HEIs’ engagement with external actors was one strand of the SIF, resulting in the development of a number of regional consortia of HEIs that developed engagement initiatives with regional partners. Another key feature of SIF was the leveraging of existing resources through the matched-funding provided by participating institutions to advance strategic national priorities. The SIF funding has supported the development of hubs for enterprise engagement, civic engagement and entrepreneurship.

In more recent years, public research funding for large-scale centres has been awarded on the basis of matched funding from industry partners e.g. SFI research centres.

Portugal: Polytechnics and CET programmes

Portugal has no specific national strategy for regional engagement of higher education. As a response to a broad range of skills-related challenges, including skills shortages and low growth in regions outside of major cities, the government reformed the education system in 2006,  

developing for example polytechnics with a stronger regional role. A particular tool for regional industry development are the

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4 The majority of the funding (85%) was to be allocated in loans to the 17 regional governments that have the responsibility of higher education in their territories, whereas the remaining 15% was allocated directly to the universities as grants.

5 Portugal’s education reform extended the compulsory education age to 12 years increasing study opportunities in technological and professional fields. It diversified and increased the higher education offer, enhanced the partnerships between HE and training institutions and the labour market, and increased VET-oriented training in higher education.
CET (Curso de Especialização Tecnológica) programmes which are co-funded by national and European funds. CETs are industry relevant post-secondary non-tertiary programmes which are primarily taught in the polytechnic system and provide double academic and professional certification. These courses have helped widen access to higher education and generally provide a more industry-relevant provision aligned with the needs of the region.

2.1.2. The national programmes for regional development and innovation where HEIs are one of the key players

The PLA also highlighted national programmes for regional development and innovation where HEIs are one of the key players. These include:

- Poland that has developed integrated strategies and reforms in science and higher education to support the modernisation of the country, its institutions and knowledge triangle and to tap into the EU funding opportunities
- Norway that is enhancing regional knowledge triangle with the help of dedicated strategies and funding such as the Regional Research Funds and the Regional RDI Programme (VRI)
- Finland that has created a new regional policy, the Innovative Cities (INKA) programme, that mobilises five key cities (outside Metropolitan Helsinki) and their HEIs to develop internationally attractive innovation clusters in selected fields: future health, bio-economy, sustainable energy, renewing industry and cyber security

Poland: Integrated strategies and HE and science reforms to boost the knowledge triangle

In Poland, four out of the nine integrated national strategies emphasise the role of the knowledge triangle, namely the Strategy for Innovation and Efficiency of the Economy, Human Capital Development Strategy, Social Capital Development Strategy and National Strategy for Regional Development.

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6 For full information, see Annex 2.
Poland’s recent reforms in science (2010) and higher education (2011) have both raised awareness among the HE sector about the knowledge triangle and regional development. Recent reforms aim to facilitate HE collaboration (joint use of infrastructure, joint projects and programmes) and support practice-oriented study programmes aligned with the labour market needs and spinoffs. New amendments to the Higher Education Law that foster stronger links with business, boost LLL and entrepreneurial culture are under public consultation. Special initiatives include “Package for Innovation” that aims at stimulating knowledge transfer and entrepreneurship. Ministerial programmes co-financed within ESF and ERDF include a scheme for commissioned degree programmes to increase STEM graduates, Top 500 Innovators and Innovation Creator.

For the EU programming period 2014-2020, Poland has developed two operational programmes: Knowledge Education Development PO WER and Intelligent Growth PO IG that bring an added impetus to the ongoing higher education reform and emphasize regional and industry engagement and internationalization of research. Poland’s regions are revising their regional innovation strategies to develop smart specialization strategies. For example, the Małopolska region has in collaboration with the university and a range of stakeholder developed a strategy that has a focus on life sciences, ICT, chemistry and sustainable energy.

Norway: Regional Research Funds and Programme for Regional RDI (VRI)

Norway has a strong focus on regional development by both universities and university colleges, facilitated by the decentralisation of HEIs, strategies and dedicated funding. For example Norway’s Regional Research Funds (launched in 2010) are divided between seven research regions that have developed their RDI strategies. The Research Council of Norway coordinates the Regional Research Funds that pool together funding from national ministries (27.4 million euros).

Norway’s Research Council’s main support mechanism for regional R&I is the Programme for Regional RDI (VRI) 2007-2017. VRI encourages innovation and knowledge development in all parts of the country, brings added value through regional knowledge triangle and strengthens R&D within and for the regions. All regions have developed regional partnerships that bring together trade and industry, R&D institutions including HEIs, public authorities/funding agencies. In 2007-2010 more than 1 000 companies were involved in VRI projects. Each region has an interaction project and a research project, both anchored in the regional partnership and addressing each region’s designated priority areas. The VRI projects are funded by the Research Council and regional stakeholders (at least 50%). Under the new VRI3 programme for 2014-2017, the Research Council will fund collaborative projects, innovation-oriented research projects and, as a new element, synthesis projects. The total budgetary framework will be approximately NOK 188 million, not including the Norwegian Research School in Innovation (NORSI) which is a key feature of the new programme.
Finland: Innovative Cities Programme (INKA)

The Finnish Ministry of Education and Research does not have a regional strategy but is involved in the development of Finland’s new regional policy due to the important role that HEIs play in regional development. While all ministries have been involved in the design of the regional policy and Innovative Cities programme INKA, the specific role of the Ministry of Education and Research has been to support the HEIs’ specialisations so that institutions would focus on their areas of competencies.

The INKA that will be launched in 2014 aims at developing internationally attractive local innovation hubs that combine regional and innovation policies and create strong clustering of competence, based on local strategies with a strong demand-based approach. INKA will partly replace the Centre of Expertise Programme OSKE (2007-2013). While OSKE has focused regional resources and activities of the knowledge triangle on fields of national importance, it has operated through 13 national clusters and 21 regional centres of expertise, leading to the fragmentation of expertise and responsibilities. INKA, however, has adopted a more selective approach: it has identified five innovation hubs, each coordinated by a single city region (outside Metropolitan Helsinki) with an important HE cluster and industry base. INKA advocates demand-based, diverse thematic choices combining several areas of expertise, e.g. combining ICTs with design, business competence, mechanical technology, and sustainable development. INKA helps urban regions to focus on their strengths, encouraging them to select new types of focus areas and intensify cooperation between the public and private sectors. INKA is administered by the Finnish Funding Agency for Technology and Innovation Tekes, which coordinates other innovation policy instruments. The total budget of the programme is EUR 5 million.

2.2 HIGHER EDUCATION INSTITUTIONS IN REGIONAL DEVELOPMENT

The PLA also featured case studies from higher education institutions that highlighted innovative examples in education, knowledge transfer and entrepreneurship. A range of projects and approaches were presented from five Member States that reflected different stages of maturity in terms of knowledge triangle development and HEIs’ role in regional engagement in general. The institutions that presented their strategies in the PLA represent both comprehensive and more specialised institutions i.e. polytechnics and institutes of technology. While these institutions represent different institutional models, most of them have a long-term commitment to regional development and have embedded this commitment in their core missions:

Comprehensive universities with a broad range of disciplines:

- Austria: the Karl-Franzens-Universitat Graz (University of Graz) is a research intensive university that has a long term regional focus on cluster development mainly through R&D activities in science and technology fields.
- Bulgaria: the University of Ruse is in the early stages of developing regional engagement and aligning its education and R&D with the needs of the regional industry of the border region with Romania.
- Spain: the University Rovira i Virgili is a research intensive has a long term strategic focus on building capacity and aligning its education provision and RDI efforts with the regional priorities of Tarragona and Southern Catalonia.

Specialised institutions with clear regional mission:
- Finland: the JAMK Jyvaskyla University of Applied Sciences has a clear legally based and long term regional mission to serve the needs of central Finland.
- Ireland: the Limerick Institute of Technology (LIT) has a strong commitment to developing the region’s industry base and has recently reinvented its regional focus.

Table 3 presents some of the key features of the institutions that were presented in the PLA.\(^8\)

<table>
<thead>
<tr>
<th>HEI</th>
<th>Comprehensive vs specialised</th>
<th>Focus on regional development</th>
<th>Time span</th>
<th>Special feature</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>AU: University of Graz</td>
<td>Comprehensive, research-intensive</td>
<td>Strong: emphasis on science, tech and health</td>
<td>Long term</td>
<td>Cluster development, e.g. auto &amp; health</td>
<td>Graz</td>
</tr>
<tr>
<td>BL: University of Ruse</td>
<td>Comprehensive</td>
<td>Strengthening, mainly teaching</td>
<td>New</td>
<td>Skills alignment with industry needs</td>
<td>Ruse</td>
</tr>
<tr>
<td>ES: University Rovira i Virgili</td>
<td>Comprehensive, research-intensive</td>
<td>Strong Embedded in teaching and R&amp;D</td>
<td>Long term</td>
<td>CEICS, Campus of International Excellence of Southern Catalonia</td>
<td>Multi-campus</td>
</tr>
<tr>
<td>FIN: JAMK University of Applied Sciences</td>
<td>polytechnic: mission to serve the region</td>
<td>Strong Embedded in teaching and applied R&amp;D</td>
<td>Long term</td>
<td>Cluster development, e.g. bioenergy Entrepreneurship: Team Academy</td>
<td>Multi-campus</td>
</tr>
<tr>
<td>IE: Limerick Institute of Technology</td>
<td>Institute of technology: mission to serve the region</td>
<td>Strong Embedded in teaching and applied R&amp;D</td>
<td>Long term</td>
<td>Industry collaboration; entrepreneurship: Enterprise ladder</td>
<td>Multi-campus</td>
</tr>
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Table 3. Key features of the regional engagement of selected HEI’s

3. KEY RECOMMENDATIONS

In order to develop a strong regional knowledge triangle, HEIs, businesses and local and regional authorities need to identify common priorities to guide projects and actions which take into account the needs and potential of the region where they are located. In this context, HEIs’ education provision and RDI that are aligned with the regional needs, as well as strengthened cooperation and knowledge exchange between higher education and the wider economy are crucial.

While HEIs’ role in local and regional knowledge triangle has been encouraged by both the EU and to varying degree also by member states, HEIs continue to face

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\(^8\) For full presentations, see Annex 2.
barriers to play their role in this domain. Member states and their HEIs have developed different approaches to address and remove these barriers. The following recommendations for policy have been formulated on the basis of the case studies and discussions in the PLA as well as international experience in general. Member States and individual institutions are at different stages of implementing these recommendations, some beginning from a low base, some already at a comparatively mature level of development. Given the changing socio-economic conditions in regions, HEIs should continually adapt their strategies over time, to respond to changing challenges and opportunities:

- **Recommendations for the EU level:**
  - Continue to enhance coherent coordination between different policy fields in order to link the policy instruments for education, research and innovation, and regional development so as to ensure coherent decisions on priorities, resources and strategies.

- **Recommendations for national policy makers:**
  - Create coherent governance across national government strands (finance; human capital and skills development; science, technology and innovation; industry development) to coordinate priorities, resources & strategies in regional development, for example learning from the Finnish example. Link up top down and bottom up processes; involve HEIs in strategy development.
  - Strengthen HEIs’ autonomy – over human, financial and physical resources, and responsibility over curriculum – to allow institutions the flexibility to respond to regional needs and opportunities.
  - Provide incentives to support regional engagement. Possible areas to focus and explore might include: i) formulae for block grant funding against outcomes, with higher weights for enrolments by special target population and learning programmes related to regional labour market needs, ii) special funding contingent on evidence of regional engagement/focus and industry collaboration and HE collaboration; iii) special funds that provide matching of funding obtained by HEIs from contracts with regional industry for education and training services; iv) investment in the fundraising infrastructure in order to boost voluntary giving to support regional engagement.
  - Encourage HEIs’ contribution to the preparation and implementation of regional and urban strategies, including regional smart specialisation strategies, for example with the help of HEIs’ performance agreements, as is currently the case in Austria.
  - Strengthen HEIs’ accountability without discouraging academic initiative. Promote the inclusion of external stakeholders in HEIs’ governance structures as well as the participation of HEIs in regional governance structures and/or planning processes. Develop indicators and monitor outcomes to assess the outcomes of HEIs on regional performance, for example by including the contribution of HEIs to regional development in their performance evaluations.
o Support HE system diversity, institutional specialisation and Vocational Educational Training (VET) to widen access and provide diverse skills and competencies required for the development of knowledge-based economy across regions. Encourage collaboration between the HEIs and the development of pathways for student progression.

o Encourage collaboration between HEIs in the regions to improve the supply and demand of HE provision and RDI through the development and joint programme offer, RDI activities, shared services and facilities and two-way mobility schemes that bring part time industry representatives to HEIs for teaching and research and bring HE staff and students to industry. Encourage collaborative research among HEIs and between HEIs and industry at the regional level and across regions to exploit the complementarities between different HEIs, to reach a critical mass and to enhance knowledge triangle. Where necessary incentivise rationalisation of HE provision within and between institutions.

- Recommendations for the regional/local policy makers
  o Establish a partnership structure of government, HEIs and public and private stakeholders to develop a regional smart specialisation strategy and a broader vision for the region or connected regions. Support the vision with a clearly articulated long-term strategy and milestones and funding to ensure that regional engagement is part of HEIs’ activities and reflected in their development plans. Map the current engagement activities within HEI and carry out a gap analysis (needs assessment and activity audit).

  o Provide incentives to HEIs and individuals for regional initiatives, e.g. engaging faculty members and students in education and applied research projects related to regional priorities. Use competitive funding to stimulate cross-institutional, multidisciplinary R&D and education programmes aligned with regional challenges and opportunities. Consider establishing a regional public-private investment fund to build HE and research training capacity to contribute to regional engagement, using a variety of funding sources. Invest jointly with HEIs in programmes that bring benefits to regional business and community for example: programmes that widen access and improve success in HE by target population groups, translational research facilities aligned with the needs and opportunities of the region; one-stop shops for SMEs and industry that pool together the HE expertise, professional development programmes, people-based mobility schemes between HE and industry that transfer knowledge and innovation to SMEs and other organisations, and graduate retention and talent and FDI attraction policies aligned with the regional priorities.

- Recommendations for HEIs
  o Help identify regional strengths and opportunities, needs and potential. Seek an active role as a lead organisation or core participant in the regional development strategies. Collaborate with the regional
stakeholders in the priority-setting and delivery of regional strategies including regional smart specialisation strategies.

- Mainstream engagement in the core missions of teaching, research and service. Adopt a wide agenda of engagement that mobilises the institution to address the challenges and opportunities of the city/region.

- Monitor, evaluate and improve activities in regional engagement and knowledge triangle to share good practice within the institution and to benchmark this experience with other institutions and regions. Develop robust data on the outcomes of regional engagement. Avoid measuring success only in terms of the ability to absorb public funds.

- Develop people: academic leaders, senior management teams and people that create and maintain links between the institution and other stakeholders. Enable mobility between HEIs and industry. Establish and invest in long term partnerships and collaboration. Review recruiting, hiring and reward systems to emphasize quality, relevance, impact and regional engagement. Make available appropriate career and financial incentives to encourage and reward staff engaged in local and regional development.

- Provide education and training opportunities aligned to business growth in order to strengthen the absorptive capacity within the regional industry including SMEs and to develop general competencies and transferable skills to help people acquire LLL skills. Focus on new modes of learning that help people to innovate and generic learning outcomes.

- Engage in early stage interactions with industry R&D, business and cluster development. Facilitate greater access to publicly funded innovation infrastructure, globalised knowledge networks, people and expertise, for example with the help of mobility schemes and one stop shops. Invest in capacity building, for example by facilitating/participating in joint seminars, conferences with business, local governments and civil society.