

ANNEX A

OECD Project on Supporting the Contribution of Higher Education Institutions to Regional Development

Self-evaluation Report: Issues to be Addressed

This document suggests a structure for the regional self-evaluation report, and gives examples of the questions that it might cover. This is not a questionnaire and it is not intended that responses be given to every item. Its purpose is rather to act as an aide-memoire, illustrating the range of topics and information that might be covered.

Chapter I: Overview of the region (about 10 pages)

The geographical situation

1. What is the position of the region in relation to the national territory in terms of accessibility to the national capital and other major centres of economic and cultural activity?
2. Where does the region fit in terms of the national hierarchy of cities and regions? Has its position been improving or deteriorating in the past 20 years?
3. What are the key features of the internal settlement structure in terms of:
1) pattern of urban centres; 2) intra regional accessibility; and 3) urban/rural linkages?
4. Where is higher education provided in relation to the settlement structure (campus locations and distance learning provision)?

The demographic situation

5. What are the key demographic indicators for the region and how have they changed over the last 20 years? Please include the following:
 - age structure of the population
 - emigration and immigration
 - health and wellbeing
 - levels of deprivation
6. What are the participation levels of the local population in higher education by social group and by gender and where do students attend for this purpose (within and beyond the region)?

The economic and social base

7. What is the economic and social base of the region compared to the national average? Please include the following:
 - industrial structure by sector
 - the importance of knowledge intensive sectors within the regional economy
 - the leading export sectors
 - the occupational structure of employment (manual, technical, clerical, professional, etc.)
 - ownership structure of enterprises (*e.g.* balance between SMEs and MNCs)
 - level of public and private R&D
 - indicators of entrepreneurial activity (*e.g.* rates of new business formation)
8. What are the distinguishing social and cultural characteristics of the region?
9. What is the economic impact of the higher education sector in terms of:
1) numbers employed; and 2) multiplier effect of HEIs and staff and student expenditure?
10. What are the key labour market indicators? Please include the following:
 - unemployment
 - economic activity rates
 - levels of educational attainment of the population including the proportion proceeding to
 - and with tertiary level of educational qualifications
 - origin and destination of graduates

11. How has the region performed over the last 20 years in relation to the nation in terms of the following key indicators: (1) GDP per capita; (2) GVA per capita; (3) unemployment; and (4) share of employment in growing sectors?

Governance structure

12. What is the structure of central, regional and local government in the region? Specifically, who is responsible for the following:
- resourcing public services (balance between local, regional and national taxation)
 - economic development
 - education (primary, secondary, tertiary, vocational)
 - health and welfare
 - cultural provision
13. What powers are available to local and regional authorities in relation to economic and social development? Please include the following: 1) acquisition of land and property; 2) financial inducements to business; and 3) provision of vocational education.
14. What influence, if any, do local and regional authorities have over the provision of tertiary level education **and** research and development?
15. What influence, if any, do local and regional authorities have over national policy with regard to tertiary level teaching and research?
16. What are the principal drivers in relation to national territorial development policy as these impact on the region and what place does higher education have in these policy developments?

Chapter II: Characteristics of the higher education system (about 10 pages)

Overview of the national system of higher education

1. What are the dominant characteristics of the national higher education system? Please include the following:
- What is the overall size of the higher education system (number of students, participation rate)? How has the overall size of the system changed over the last ten years, and in which parts of the system has any growth been concentrated?
 - What data analysis has been performed at a national level to establish the demand and supply of different types of higher education “product”?

- Outline the basic governance of and regulatory framework for the higher education system (i.e. funding mechanism and institutional autonomy) including the major legislation that applies to it.
 - Describe briefly the major national agencies responsible for developing tertiary education policy, for financing the system, and for assuring its quality, and their mandates. Outline how national higher education policies are developed.
 - What characterises inter-institutional relationships – co-operation, competition, market-led?
2. To what extent is there dialogue between government ministries concerned with territorial development, science & technology and those sponsoring higher education? What mechanisms exist to co-ordinate and attune the policies and measures taken by the different ministries?

Regional dimension “inside” the national higher education policy

3. To what extent does national higher education policy have a regional dimension? In answering this, the following questions could be taken into consideration:
- Have regional development (economic, social, cultural) considerations played a prominent role in decisions on where to locate and build up new institutions?
 - Have funding arrangements been altered to reward institutions for regional engagement or to make this engagement possible?
 - Is regional engagement imposed on institutions by government as a formal requirement?
 - What policy initiatives have been taken by various actors (e.g. central governments in different policy domains, regional authorities) to foster the regional role of HEIs and to stimulate regional collaboration between HEIs, industry, government and civil society?
4. To what extent do these considerations have a differential impact upon different types of higher education institutions? (i.e. universities vs. non-university HEIs)
5. Does an emphasis upon a regional role for HEIs involve any policy tensions? For example, is there a conflict between regional commitment and the strive for quality and international competitiveness in higher education? If so, how are these resolved?

Regional higher education system and governance

6. Outline the basic profile and character of HEIs in the region: universities, non-university HEIs.
 - What are the historic links between the HEI and the region and how have these developed? How has the institution evolved over the last ten years in terms of: 1) staff and student numbers; 2) faculty mix; 3) place of the institution in the regional and national higher education systems; 4) balance between teaching and research functions; and 5) territorial focus.
7. To what extent does the financing and management of HEIs occur at a regional level?
8. Are there regional organisations that have strategic responsibility over funding and management of HEIs?

Chapter III: Contribution of research to regional innovation (about 15 pages)

Responding to regional needs and demands

1. Does HEI research policy have a regional dimension?
 - To what extent do HEIs draw upon the characteristics of the region to develop research activity?
 - What other regional partners are drawn into this process? How have such research links established?
 - Do the technology transfer offices have a regional as well as an international and national role?
2. How is provision made to meet specific regional technology & innovation needs and demands, such as those from SMEs? Is such provision undertaken in collaboration with other regional innovation and technology actors such as public labs and research institutes? What is the relationship between these innovation and technology actors other than HEIs and business in the region?
3. What mechanisms exist to reward and acknowledge regionally-based research (i.e. the application of the established knowledge for the local/regional community as opposed to the generation of “basic” knowledge for the national/ international academic community) which has been traditionally outside of peer review processes such as academic journals?

Framework conditions for promoting research and innovation

4. Does the national legal framework (e.g. Intellectual property law) support the role of HEIs in research and innovation (including research and innovation partnerships with industry)? What are the incentives and barriers in HEI-industry relationships both for HEIs and for industry?
5. Describe the ways in which HEIs help to stimulate innovation and knowledge transfer between researchers and industry (both larger enterprises and small and medium-sized enterprises). Do national or regional policies exist to encourage HEIs to play such a role?
6. Do policies or funding programmes exist to encourage co-operative research between HEIs and industry or the exchange of research staff between the two?

Interfaces facilitating knowledge exploitation and transfer

7. What mechanisms have been developed to commercialise the research base of the HE sector and to promote technology transfer between the HEI and regional stakeholders? Please include the following:
 - research contracts, collaboration and consultancy ;
 - intellectual property (IP) transactions ;
 - promotion of spin-offs, incubators, science parks; and clusters ;
 - teaching/ training and labour mobility.
8. How have HEIs and other regional stakeholders been promoting these mechanisms described above?
 - What are the respective roles of the central government, regional authorities, HEIs, regional research institutes, and business in creating such mechanisms?
 - Are there any specific mechanisms that have been created within or between higher education institutions?
9. Are there structures in place in the region that enable the HEIs to more widely disseminate its R&D and innovation initiatives beyond its contractual industry partners (i.e., exhibitions, competitions, regular demonstrations, media, regional web page entry points, etc.)?

Conclusions

10. Collaboration between regional stakeholders related to *contribution of research to regional innovation*: 1) between the universities in the region; 2) between universities and non-university HEIs; and 3) between HEIs and other regional stakeholders (i.e. business, local government, research labs & institutions, etc.);

11. Strengths, weaknesses, opportunities and threats related to *contribution of research to regional innovation* in the region.

Chapter IV: Contribution of teaching and learning to labour market and skills (about 15 pages)

Localising the learning process

1. How do HEIs draw upon the specific characteristics of a region to aid learning and teaching?
 - Are there any courses which meet regional needs?
 - In what ways are learning programs tied to reflecting and finding creative solutions on regional issues over the medium to long term rather than not simply to meet the short term need for training students for existing known skill number gaps?
 - Are there learning programs within the HEIs that enhance the capacity of students to be enterprising with the skills to put in place entities and initiatives to take advantage of regional issues and opportunities?
2. What is the role of the careers service in the process of localising learning?
3. How are students integrated in the region, in terms of course placements, accommodation, volunteering activities?
4. What mechanisms exist to monitor/accredit extra-curricular activities?
5. To what extent is postgraduate activity – which can be an effective tool of technology transfer to the region and a way of embedding highly skilled graduates in the regional economy – geared towards meeting regional needs (i.e. Ph.D industrial programme in Denmark; Teaching Company Scheme in the UK; external associate professorship from local industry, etc.)?
6. Do the HEIs in the region facilitate voluntary associations and coalitions of regional expertise and knowledge around key regional strategic priorities?

Student recruitment and regional employment

7. What are HEIs' policies concerning regional recruitment? What mechanisms are in place to increase this? Are there any collaborative partnerships or quota arrangements among regional HEIs to manage regional recruitment?
8. To what extent do HEIs recognise themselves as part of a regional education supply chain?
9. What mechanism exists to create pathways between regional HEIs and regional firms, especially SMEs?

10. To what extent is labour market information gathered to monitor the flow of graduates into the labour market? Does this process involve other regional stakeholders?
11. Are there any specific initiatives or practice to support graduate enterprise (i.e. the Cambridge MIT initiative in the UK) in an effort to retain graduates in the region and recruit alumni to return to the region?

Promoting lifelong learning, continuing professional development and training

12. How is continuing education and continuing professional development activity organised? (i.e. adult liberal education; tailored and specialist continuing professional development)
13. Have external or independent enterprises (i.e. separate and independently-run business school) been established within HEIs to extend professional education provision to the region?
14. Is such provision undertaken in collaboration with other regional stakeholders?
15. Which regional partners are involved in meeting regional training needs?
16. What mechanisms are in place to increase access to learners in the region who have been traditionally under-represented in higher education? (i.e. ethnic minority, returning adult learners, those with disabilities)

Changing forms of educational provision

17. What mechanisms exist for promoting flexible education provision such as satellite campuses, accreditation networks, on-line courses and outreach centres?
18. How do HEIs maintain institutional coherence in the light of this multi-territorial educational provision?
19. Are regional HEIs drawing upon new forms of ICT-based course delivery to enhance educational opportunities to a wider group?
20. What are the tensions between place-based and virtual forms of education provision?

Enhancing the regional learning system

21. To what extent is there a coherent vision of an education system existing at the regional level? Do HEIs acknowledge the need to develop education on a regional basis?

22. What data analysis has been performed to establish the demand and supply of different types of higher education “product” within the region?
23. Are procedures in place to support regional collaboration between HEIs in this respect?
 - Is there a credit transfer system between education institutions and what links exist between the university and non-university higher education sector?
24. What measures exist to promote gender equity in participation in higher education in the region?

Conclusions

25. Collaboration between regional stakeholders related to *contribution of teaching and learning to labour market and skills*: 1) between the universities in the region; 2) between universities and non-university HEIs; and 3) between HEIs and other regional stakeholders (i.e. business, local government, research labs & institutions, etc.);
26. Strengths, weaknesses, opportunities and threats related to *contribution of teaching and learning to labour market and skills* in the region.

Chapter V: Contribution to social, cultural and environmental development (about 10 pages)

Social development

1. Do the HEIs provide community access facilities and expertise support for services such as health and medical, welfare advisory, cultural exchange, indigenous support, religious?
2. Do the HEIs engage in partnership with the community in the provision of social services?

Cultural development

3. Do the HEIs provide facilities, expertise and learning programme support for cultural groups?
4. Do the HEIs encourage sporting development?
5. Do the HEIs support the arts through its infrastructure, programmes and services?
6. Have HEIs established mechanisms through which their stock of cultural facilities can be jointly managed and marketed to the regional community?

Environmental sustainability

7. Are the campus of HEIs a practical demonstration of best practice to address environmental issues of concern to the regional community?
8. Are there joint initiatives between the university, the regional community and others to demonstrate environmental sustainability possibilities for the region?

Conclusions

9. Collaboration between regional stakeholders related to *social cultural and environmental development*: 1) between the universities in the region; 2) between universities and non-university HEIs; and 3) between HEIs and other regional stakeholders (i.e. business, local government, research labs & institutions, etc.);
10. Strengths, weaknesses, opportunities and threats related to social, cultural and environmental development in the region.

Chapter VI: Capacity building for regional co-operation (about 15 pages)

Mechanisms to promote HEI-regional involvement

1. What formal and informal mechanisms exist to identify regional needs? Has the catalyst for regional engagement been internal or external to HEIs?
 - Are their formal processes such as signed agreements that bind those in the engagement relationship?
2. Have government and/or regional authorities undertaken an audit of the knowledge resources of the region in terms of: 1) the expertise, skills and experience of people in the regional population; 2) the research places and spaces; and 3) the accessibility of research and learning infrastructure for new innovative knowledge generating and dissemination initiatives?
3. Does the region's strategic plan include the role of the HEIs as a key element?
4. What resources are made available to HEIs by government and other organisations to support regional engagement? How are these distributed? What incentives and support are provided to support regional engagement of HEIs?
5. What processes are in place to regularly review current engagement arrangements between the HEIs and the region so as to build an element of ongoing improvement into the relationship?

- How do government and/or regional authorities evaluate the success of HEIs in regional engagement? Have government and/or regional authorities identified any good practice in respect of regional engagement of HEIs and if so how has this been disseminated?
6. What formal and informal mechanisms exist to co-ordinate the activities of HEIs in regional engagement both within HE sector and with those of other participants?
 7. Do the HEIs make use of existing regional community infrastructure for its operation? Also, does the community access HEI infrastructure for its day to day needs (i.e., testing laboratories, libraries, sporting and cultural facilities, transport, accommodation for students, etc.)?

Promoting regional dialogue and Joint marketing initiatives

8. What mechanisms exist to promote communication and dialogue between HEIs and regional stakeholders?
9. What groups are part of the dialogue of regional engagement? How are the regional interests of various sectors of interest such as HE, industry, the private, public and voluntary sectors represented?
10. What is the extent and nature of HEI staff representation on public/private bodies in the region? What are the reasons for such representation and what is their role? Is such representation monitored?
11. What role do external bodies play in decision making within HEIs?
12. Are there joint HEI/ regional promotion and marketing initiatives or a “buy local” purchasing program within the HEIs in the region?

Evaluating and mapping the impact of the regional HE system

13. Have HEIs, collectively and/or individually, undertaken an audit of their (its) impacts on and links with the region? (i.e., Direct economic impact of the institution; Contributions to local economic development; Social and cultural impact).
14. How are such impact statements used and distributed to the region and further afield to promote the HEIs and the region?
15. Do mechanisms exist to raise awareness of the role of HEIs in the region? What is known about the contribution that higher education makes to the region?

[For Each HEI in the Region]*Institutional capacity building for regional involvement*

1. To what extent has academic leadership and central management been altered to engage with regional needs?
2. Does the institution's strategic plan include its relationship with the regional community as a key strategy for enhancing viability?
3. What are the main channel of communication between regional stakeholders and the institution (senior managers, committees, etc) and who is responsible for regional decisions in the institution?
4. What internal mechanisms exist for co-ordinating regional activities within the institution especially in relation to funding issues and what new posts/offices have been created with an explicitly regional local remit?
5. Does the institution use adjunct appointments to add expertise to its capacity?
6. In what ways is the institution responding to regional ICT infrastructure and is it adopting new technologies to restructure their own management structures?

Human and financial resources management

7. How is the regional dimension incorporated into the human resources policy of the institution?
 - What training is given to staff with regional responsibilities? How is staff rewarded for regional engagement?
8. How are regional and national funding streams managed? What are the possibilities of financial decentralisation within the institution?
9. How does the institution embed new devolved financial responsibilities into academic life?
10. How are new resources for regional engagement and activity generated? Who pays for the regional role of the institution?
11. What new regional funding streams are emerging which the institution can tap into? What mechanisms are being established to tap into these sources?

Creating a new organisation culture

12. Are there any significant cultural obstacles to adopting greater regional engagement within the institution (i.e. the connotations which regionalism has with parochialism, newness, and unsophistication)? What efforts have been done to overcome these obstacles?

13. Is regional engagement part of the institution's mission? Has regional engagement become part of the academic mainstream of the institution? If so, how far this has influenced mainstream teaching and research?

Chapter VII: Conclusions: moving beyond the self-evaluation (about 5 pages)

1. Lessons to be learned from the self-evaluation process. Please include the following issues:
 - Which practice and methodologies seem to be the most promising for strengthening regional capacity building, and what factors make for their success?
 - What synergy is there between the aims and objectives of institutions and regions? Are there conflicting interests?
 - What incentives are there at institutional, departmental and individual level for HEIs to become more engaged?
 - What are the main challenges facing the different sets of decision-makers?
2. The potentialities and problems, opportunities and threat for increasing the contribution that HEIs make to the region.
3. The way forward: the discussion of the region's vision for future policy.

ANNEX B

*Selected OECD Countries' Characteristics
and Innovation-based Policies Targeting
at the Regional Engagement of Higher
Education Institutions*

Table B.1. **Selected OECD countries' characteristics and innovation-based policies targeting at the regional engagement of higher education institutions**

Country	HE research % of GDP 2004	HE research financed by industry 2004	Number of HEIs	Policy focus	Policy issues	Main programmes ¹ (central or federal level)
Australia	0.48%	5.7%	37 public and 3 private universities + 4 other HEIs	Working against university fragmentation; Promoting innovative universities	Increasing critical mass in research universities; Setting up single points access for research projects; Enhancing co-operation between HEIs and the private sector	Collaboration and Structural Reform Fund; Australian Research Council; Linkages project; Australia Regional Partnership programme; CRC: Cooperative Research Centres
Austria	0.59%	4.5%	14 universities	Regional cluster policy	Coordination between federal and Länder level	A+B Academic Business Spin-Off Programme; Centres of Excellence; REG+; FH
Belgium	0.41%	11.6%*	15 universities	Tackling the bottlenecks in knowledge and innovation systems	Improving knowledge absorption capacities in regions	<i>Flanders</i> : TETRA fund for traditional industries; Financial support to Science Parks; IOF for university research with industry applications <i>Brussels</i> : Industrial research subsidy <i>Wallonia</i> : FIRST
Canada	0.70%	8.2%	157 public universities, 175 recognised public community colleges and technical institutes	Commercialisation of HE research	Aligning HE research with market needs; Improving the system of intellectual property rights; Setting up single points of contact for business in HEIs	Atlantic Innovation Fund; Chairs of Research Excellence; Centers of Excellence; NRC-IRAP; Canada Foundation for Innovation; NSERC collaborative programme; NSERC Ideas to Innovation; IMAC
Denmark	0.61%	3.0%	12 public research universities, 55 other HEIs, and ca. 20 cultural institutions	Regional Innovation Platform	Implications of the creation of five regions	Regional Centres of Excellence; Regional Knowledge Pilot programme; Trade and Industry Partnerships

1. See below more details on each country's programmes.

Table B.1. **Selected OECD countries' characteristics and innovation-based policies targeting at the regional engagement of higher education institutions** (cont.)

Country	HE research % of GDP 2004	HE research financed by industry 2004	Number of HEIs	Policy focus	Policy issues	Main programmes ¹ (central or federal level)
Finland	0.68%	5.8%	20 universities, 27 polytechnics	Broadening the scope of regional innovation system	Adaptation of HEI expertise and services to SME needs	Centres of Expertise; TULI programme; Cluster programme; Technology clinics
France	0.41%	2.7%	85 universities plus numerous Grandes Ecoles	Increasing regional innovation performance	Weak university R&D; Limited co-operation with firms; Low participation of innovating SMEs in regional innovation systems	Poles of Competitiveness; Industrial and commercial services in HEIs; Technology platforms; Entrepreneur Houses
Germany	0.41%	13.2%	350 universities and Fachhochschulen	Learning regions; Development of Eastern Germany	Stimulating entrepreneurship; Bundling competencies	Innoregio; EXIST; Innovative Regional Growth Poles; Innovation Competence; INNPROFILE NEMOS
Italy	0.36%		77 universities	North-south divide	Instilling R&D and innovation in districts and clusters	Technological districts; joint labs; ICT action plan; incubators
Japan	0.43%	2.8%	716 universities and 478 colleges	Improving creativity of HEIs in science and technology	Enhancing competence building functions of HEIs; Promoting local co-operative centres and regional HEI consortiums	Knowledge cluster programme; Industry cluster programme; Support to approved technology licensing offices
Korea	0.28%	15.9%	135 four-year universities and 106 regional colleges	Balanced regional development; Improving the governance of regional innovation systems	Increasing co-operation between HEIs; Facilitating partnerships between sub-national governments and HE institutions;	New University for Regional Innovation (NURI); NRL; Industry-Academia co-operation groups; Technical Innovation Centres
Mexico	0.16%*	2.0%*	1 892 HEIs including 713 public institutions	Integration of research in the productive efforts of region and the country	Strengthening the collaboration between HEIs, federal laboratories and the industry; Building Regional Innovation Clusters	COEPES; Mexican Knowledge and Innovation Programme (KIP); AVANCE; CIMO
Netherlands	0.50%	6.8%*	13 research universities, 45 HBOs, open university	Transfer of knowledge	Connecting SMEs with HEIs	Lectors; Knowledge circles; Knowledge Vouchers; RAAK regulation

1. See below more details on each country's programmes.

Table B.1. **Selected OECD countries' characteristics and innovation-based policies targeting at the regional engagement of higher education institutions** (cont.)

Country	HE research % of GDP 2004	HE research financed by industry 2004	Number of HEIs	Policy focus	Policy issues	Main programmes ¹ (central or federal level)
Norway	0.48%	5.0%*	6 universities, 5 specialised university institutes, 25 university colleges, 2 arts academies	Coherence between innovation and regional policies	Fostering involvement of universities in clusters; Monitoring govt innovation strategies based on research, transfer and commercialisation of knowledge	FORNY; MOBI; SIVA innovation centres; VS 2010, ARENA; Centres of Expertise
Spain	0.31%	7.5%	48 state-funded universities (incl. 1 distance learning HEI) and 23 private universities	Discrepancies between regional innovation system support	Improving co-ordination between HEIs and firms; Improving the access to public funds	Regional authorities programmes; PETRI programme; Projects to encourage the transfer of research results with industrial applications
Sweden	0.87%*	5.5%*	14 state universities, 22 state university colleges and 3 private institutions	Regional Innovation Systems; HEI- industry interface dominated by a small number of multinational enterprises working with 8 oldest universities	Increasing the number of HEI-based start-ups	University-SME co-operation; VINNVÅXT regional growth programme through dynamic innovation systems; Öresund Contract
Switzerland	0.67%	8.7%	15 universities, 12 universities of applied sciences (Hautes Écoles Spécialisées)	Bridging the gap between research and innovation	Specialisation of HEIs; Accelerating knowledge transfer	Competence building in universities of applied sciences; Promotion of start-ups and entrepreneurialism in HEIs
UK	0.40%	5.1%	169 universities and HE colleges (+ further education colleges), some private colleges	Better tap into HEIs' innovation potential	Absorptive capacity in peripheral regions	HEIF2; Knowledge Transfer Partnerships; Regional Innovation Fund

* Reflects figures for 2003.

1. See below more details on each country's programmes.

Source: OECD, *Main Science and Technology Indicators*, December 2006.

Australia

Majority of funds for the HE sector are derived from the Commonwealth Government. The **Collaboration and Structural Reform Fund (CASR)** promotes structural reform in the HE sector and business-HEI collaboration. Budget: AUD 51 million in 2005-2010. There is also a potential for HEIs with strong regional engagement practices for several **Australian Research Council (ARC) programmes** in particular linkage funds (collaborative research). Budget: AUD 76 million in 2002. **Regional Partnerships Grants** are administered by Area Consultative Committees which have representation from business and key economic sectors in regions. Finally the **Cooperative Research Centres (CRC) programme** supports application to establish CRCs which bring together researchers and research groups from universities, government research laboratories (federal, State and Territory) and the private sector into long term cooperative relationships. 145 CRCs proposal have been approved since the start of the programme in 1990. A AUD 148 million budget was devoted to this programme in 2002/2003.

Austria

A+B: Academia-business networks of regional partners compete for national support for start-up centres (participation of Academia in projects is compulsory). Budget: EUR 20 million in 2002-2009 for the first two calls. The aim is to incubate 200 firms in 5 years. Evaluation is ongoing. **REG+** aims at increasing the performances of technology and innovation centres, strengthening the regional innovation systems and enhancing co-operation with HEIs. It has involved 240 partners. Budget: EUR 10.8 million in 2000-2006. Positive evaluation. **FH+** aims to enhance competencies in Fachhochschulen. Budget EUR 7.5 million in 2002-2015. Positive evaluation based on the growing involvement of the Fachhochschule-sector in national and international consortia. **Seed financing:** Budget: EUR 38 million.

Belgium

Brussels capital region: Industrial research subsidy programme. This programme focuses on increasing firm R&D and on strengthening linkages with the research base. Budget: EUR 5 million. No evaluation.

Wallonia: FIRST programmes aim to increase the science and technology potential of university research (**FIRST higher education**), encourage HEI researchers to study the conditions for the commercial exploitation of research results (**FIRST spin-off**), promote research within the framework of a partnership with firms (**FIRST enterprise**) and encourage international mobility (**FIRST DEI**). **Feasibility study for university-based technical support** for a firm.

Budget: EUR 9.5 million. Favourable evaluation and evidence of increasing demand. **University-Industry Interfaces Programme**. It supports hiring of supplementary personnel. Budget: EUR 1 million in 2000-2003. **Mobilising Programmes** are opened to university laboratories fostering research in strategic areas. Budget: EUR 180 million for 1991-2004.

Flanders: IOF is an industrial research fund for universities to develop research relevant to industry. Budget: EUR 12 million in two calls. **Poles of Excellence** have an annual budget of EUR 100 million. Evaluation results are often positive. **Support for industrial estate and science parks**. **TETRA funds** provides assistance for university technology transfer. Budget: EUR 6 million for 23 projects in 2004. The goal of **research mandates** is to help researchers in the commercialisation of research results.

Canada

The Federal government is the principal supporter of university research and innovation. Component of the new strategy include the **Canada Foundation for Innovation (CFI)**, the 21 **Chairs of Research Excellence** (budget: CAD 300 million per year) and the network of **Centres of Excellence**. The federal government funds also university research through research granting councils, such as the National Science and Engineering Research Council (NSERC), the Social Sciences and Humanities Research Council (SSHRC) or the Canadian Institutes for Health Research (CIHRC). Among main programmes for SMEs are the **NSERC Collaborative Research Development Grant**, National Research Council Industry and Research Programme **NRC-IRAP** or **NSERC Ideas to Innovation**. Universities received CAD 2.2 billion in 2005-06 from NSERC, SSHRC, CIHR, CFI and IC. There are also special innovation funds such as the **Atlantic Innovation Fund (AIF)** through which CAD 370 million has been awarded in three rounds to knowledge-based development projects involving industry and HEIs. The **Innovation Management Association of Canada (IMAC)**, which has representation from the high tech sectors and R&D industries and universities, works to expand the commercialisation of innovation.

Denmark

Regional Knowledge Pilots enable SMEs to employ academic staff. Budget: DKK 17.5 million for the two last years. **Centres of Expertise** focus on regional competencies and act as intermediaries with SMEs. **Centres of Excellence** (6-10 planned) aim to strengthen the collaboration between research and industry. These initiatives are recent and have not yet been evaluated. **Incubators**: eight university incubators have been approved by the Ministry of Science, Technology and Innovation. The **Trade and Industry Local Partnerships Programme for IT** has been developed initially in four regions.

Finland

The **Centres of Expertise Programme** aims to ensure rapid transfer of latest knowledge from research centres and HEIs to companies (co-operation mandatory). The investment of EUR 52.5 million (1999-2006) has levered in EUR 578 million of total funding and created over 13 000 new knowledge-intensive jobs, preserved 29 000 jobs and led to the formation of 1 300 companies. The **Cluster programme** (budget: EUR 100 million) has been successful in the public sector, while the participation of companies remains a challenge. **Improving use of research results** (budget: EUR 2.3 million in 2003; no evaluation). **Technology Clinics** (budget: EUR 4 million) aim to improve technology transfer to SMEs. 15-20 clinics are operating. Evaluation results stress the need for more effective marketing. The **TULI programme** (budget: EUR 2.6 million in 2005) aims to promote the exploitation of research results and promising ideas. TULI projects are run by local technology transfer companies and co-ordinated by the Finnish Science Parks Association (TEKEL). The flexibility of the programme is recognized. Its mediator network in research institutions is considered as its major strength.

France

Poles of Competitiveness. This programme supports locally or regionally based networks of firms and HEIs which have been selected through a call for tender. Budget: EUR 1.5 billion in 2005-2007 for projects presented by 66 selected poles. **SAIC (Industrial and commercial business services)** aim to concentrate the promotion of HEI industrial and commercial activities into a single structure. Through several calls for participation, public funding has been channelled to universities to fund these structures. Since 2001, 22 SAICs have been created. **Regional Incubators Structures.** They support the co-operation between public research bodies and enterprises. National public funding represents 50% of the incubation expenses. Budget: EUR 46 million from Ministry of Research and EUR 8 million from the ESF. **Technology Platforms (PFT)** aim to develop the third mission of HEIs and other training institutions and to enhance the links between SMEs and HEIs. In 2004 there were 70 platforms. Budget: EUR 0.22 million. **Entrepreneurship Houses** in HEIs: six projects selected in 2004. Budget: EUR 250 000. No evaluation so far.

Germany

Innovation Growth Poles supports regionally and thematically focused bottom-up innovation initiatives in the Eastern Länder, bringing together SMEs, research organisations/universities and other actors. Until 2007, 28 Poles were funded. Budget: EUR 150 million until 2009.

Centres for Innovation Competence establish research centres with innovation competence and attractiveness for young researchers. Until 2002, 6 centres are funded with EUR 73 million. **InnoProfile** promotes since 2005 young research groups at research centres addressing concrete innovation-related questions of the SMEs in their region and co-operating with them. Budget: EUR 150 million until 2012.

EXIST selects networks based on a competition. Since 1997, 200 universities with 109 projects participated in the programme. About 550 innovative start-ups have been established in the 5 EXIST model regions. Budget 1998-2005: EUR 45 million. **Networks of Competences** support regionally concentrated networks between science, education and business in order to generate innovation. 102 of these networks have been established in 32 regions. Budget: EUR 2 million for marketing and management. The **Learning Regions** programme brings together supply and demand in education within a region and tries to find optimal solutions for lifelong learning. Budget: EUR 120 million in 2000-2007 from the Ministry and the European Social Fund. **NEMO**, Management of Innovation Networks for East German SMEs, provides support for the networks of SMEs and R&D organisations. The 1st round: 23 networks, the 2nd round: 15 networks. Budget: EUR 6 million in 2005. The **High Tech Start-up Fund** promotes spin-offs from public research and universities. Budget: starting amount of EUR 142 million (average funding: EUR 0.5 million for project).

Italy

Joint labs aim to foster the co-operation between industry and research centres in the Mezzogiorno. Participation of universities is compulsory. Budget: EUR 212 million. Eligible costs include equipment, training, external expertise and labour cost. 22 centres were created following the previous call. **Technological districts** in six locations enhance the Italian district model. Districts are co-financed by the private sector and have participation of venture capital fund, but no funding from the government. The **Incubators for start-ups** programme provides high level technical assistance, training, consultancy and logistic support to enterprises in the start-up phase. Budget EUR 23 million in 2005-2007. Universities and research institutes are eligible for funding. **ICT action plan** provides grants, guarantees, subsidised loans and tax incentives for the diffusion of ICT to firms especially SMEs and promotes technology transfer from public research institutes including universities.

Japan

In 2004, 90% of the national universities were engaged in co-operative research or commissioned research. In 83% of the cases the partner

institutions were private sector businesses; in 29% they were SMEs. Under the 1998 **Law for Promoting University-Industry Technology Transfer** the right to obtain patents was transferred to University Technology Transfer Offices (TLOs). **Approved TLOs** receive state assistance until the business is established. Following the 2004 reform, it has become possible for the National University Corporations to have shares in the start-ups. Details about the **cluster programmes** are given in Chapter 5.

Korea

The **New University for Regional Innovation programme (NURI)** is a government-funded initiative to strengthen the capability of HEIs outside the Seoul metropolitan area, to promote curricula alignment to the characteristics of the regional economy and to establish triple helix collaboration system between HEIs, local governments, research institutes and corporations. Budget: KRW 1 420 billion in 2004-2008 (112 universities). **Brain Korea 21 (BK21)** aims to create trained workforce through programmes that establish research-focused graduate schools, educate graduates to meet the demand of the job market and develop local universities. Budget: KRW 200 billion per year since the end of the 1990s. The government also supports over 444 **National Research Laboratories (NRL)** across the country: 278 are in Academia. Budget: USD 250 000 for five years. There are also 38 **Technological Innovation Centres** in universities in different regions. Since 1995, the Ministry of Science and Technology has provided funding for 59 **regional research centres in academia**. Budget: KRW 133 billion for 8 years.

Mexico

Mexico has designed a set of educational policies that aim to improve greater decentralisation. A State planning agency, **COEPES**, manages tertiary education planning at the regional level. The SEP (Secretariat of Public Education) and CONACYT (The National Agency for Science and Technology) have established a range of programmes to stimulate the research qualifications of teachers in tertiary education, to expand the quality of graduate programmes and to increase productivity and output of HEIs. The **Knowledge and Innovation Programme (KIP)** aims to strengthen the linkages between HEIs, industry and society to pursue opportunities in technological innovation. It is instrumental in the decentralisation of the national innovation system. The **Programme for Integral Quality and Modernisation (CIMO)**, run by the Ministry of Labour, provides technical training to local firms and brings together networks of researchers from across universities and public and private institutions. Elements of government-industry matching funds for collaborative research exist in the form of the CONACYT Programme

for the Creation of New Businesses Based on Scientific and Technological Development (**AVANCE**). CONACYT Programmes of mixed federal and state funds help to improve strategies that support cluster development and address the gaps in the innovation support infrastructure.

Netherlands

Since 2001, there has been a policy of appointing a growing number of **lectors and knowledge circles** at the institutions of higher professional education. Lectors and knowledge circles aim at improving the external orientation of HEIs especially with regard to SMEs. The networks of knowledge circles consist of companies and relevant organisations in the field. Budget: EUR 38.4-50 million per year in 2006-2007. **Knowledge Vouchers** (see also Chapter 5) are an incentive to companies that buy services from knowledge institutes. The **RAAK-regeling** (Regional Action and Attention for Knowledge Innovation) aims at strengthening the relationship between HEIs and the SME sector. It offers financial support to co-operation projects in the field of knowledge development and knowledge exchange between HEIs (including also regional education and training centres) and SMEs. Budget: EUR 5-8 million.

Norway

Key initiatives with explicit regional orientation include FORNY, MOBI, SIVA, VS 2010, ARENA and the Centres of Expertise. The **FORNY** programme has a focus on the commercialisation of higher education sector's ideas and on intellectual property. A part of the **MOBI** programme funds R&D projects involving university colleges and firms located in the same region. **SIVA** is a co-owner of more than 60 innovation centres, including science and research parks, knowledge parks, business gardens, as well as venture capital and seed financing institutions. Budget: NOK 300 million (about USD 50 million). Participants include more than 1 000 private investors, industrial corporations, HEIs and other R&D institutions. **VS 2010** encourages companies to collaborate with researchers in organisational development and innovation processes, triggering internal- and network-based innovation potential in companies, especially at the regional level. This is emphasised through a focus on union/employer federation participation and development coalition, both in network- and regional partnerships. **ARENA** contributes to increased innovation and wealth creation through co-operation between firms, knowledge providers and the public sector. The programme is intended for regional clusters of firms and knowledge institutions. The **Centres of Expertise (pilots)** aim to increase regional and national competitiveness through strengthening core competences in the regions and through encouraging formal triple helix collaboration. HEIs' external relations and externally-oriented activities have been established

through a specific framework (“randsonveirksomhet”) which provides HEIs with tools to become proactive in external project acquisition and to create revenue related to such activities.

Spain

Most national programmes have no specific regional dimension apart from the **PETRI** programme which encourages the transfer of research results generated in universities and public research institutes to companies, particularly SMEs.

Sweden

The **VINNVÄXT regional growth programme** aims to stimulate strong innovation systems with qualified environment for R&D as well as dynamic networks. A few selected regions receive funding for ten years within specific areas of growth. Triple helix co-operation with actors from the public sector, academy and business is mandatory. Evaluation is ongoing. **Öresundskontrakt:** The programme aims to strengthen the competitiveness of the Öresund cross-border region through enhanced collaboration between the research centres and universities in Sweden and Denmark. Projects are co-financed. Budget: EUR 1.8 million. Evaluation: co-operation has improved cross-border connections but the long term collaboration remains a challenge. The **University and SME Co-operation scheme** focuses on new forms of co-operation between small businesses and HEIs. Seven universities have been selected to implement and try out experiences that can generate knowledge about entrepreneurship at universities. Six other universities have been chosen to disseminate the results of the first round. Budget: EUR 3.5 million in 2004-2007.

Switzerland

Competence Building in the Universities of Applied Sciences (UAS or “Hautes Ecoles”). The Innovation Promotion Agency (KTI) supports joint projects between UAS and private sector through funding the salaries of UAS researchers and/or co-financing professional consultancy services. This benefits not only SMEs, but also UAS institutions which gain expertise through participating in a competence network that draws from different regions and disciplines. Budget: EUR 73.6 million in 2004-2007. Evaluation: progress has been made in telecommunications. **Knowledge and Technology Transfer (KTT)** promotes technology transfer from public science institutions including universities to private firms through five consortiums consisting of KTT service centres. The five regionally focused consortiums link KTT offices at

HEIs and the federal Institute of Technology at a regional level. Budget: EUR 6.5 million in 2005-2007. No evaluation so far. The **Promotion of start-ups and entrepreneurial spirit** aims to develop a culture of innovation and to enhance the way from idea to market. The programme supports labour cost, infrastructure and equipment. Budget: EUR 23.7 million. It has created 750 jobs and 67 start-ups which are still in business.

United Kingdom

Higher Education Innovation Fund (HEIF) embeds the third mission to encourage universities to work with industry and the wider communities alongside teaching and research. HEIF builds co-operation in English universities for knowledge transfer and commercial sector activities with a focus on co-operation with the regional community. Budget for the two last academic years: EUR 279 million. A 2005 evaluation showed limited impacts with regard to university-industry connections indicating a need for long term scale between developing capacities and delivering businesses. **Knowledge Transfer Partnerships** aim to increase interactions between universities and companies. Graduates are recruited to work in a company for two years in close co-operation with a university. Total government spending: EUR 35.4 million in 2004-2005. Each GBP 1 million of government support has generated 47 new jobs, GBP 2.5 million annual increase in profit and GBP 1.3 million investment in plant and machinery. 80% of companies considered that the placement had considerably extended their knowledge base.

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Table of Contents

Executive summary	11
Chapter 1. Introductory Remarks	19
Introduction	20
The OECD study	23
Note	28
Chapter 2. Drivers for Regional Engagement	29
Evolving perspectives on regional development and the place of higher education	31
Evolving perspectives on higher education and the role of regions	35
Synthesis: higher education institutions tying down the global in the local	39
Note	43
Chapter 3. Barriers to Regional Engagement of Higher Education	45
Higher education, science and technology and labour market policy	46
Funding regional engagement	51
Regional structures and governance	56
Governance, leadership and management of higher education ...	58
Conclusions	63
Notes	64
Chapter 4. The Regions and their Higher Education Institutions	67
Australia	68
Brazil	71
Canada	74
Denmark	78
Finland	82
Korea	85
Mexico	88
The Netherlands	91
Norway	94
Spain	96
Sweden	101
United Kingdom: England	105
Cross-border co-operation between Denmark and Sweden	108

Conclusions	111
Notes	113
Chapter 5. Contribution of Higher Education to Regional Business	
Innovation: Overcoming the Barriers	117
Enhancing the engagement potential of higher education institutions	122
Policy practices and instruments	130
Conclusions	140
Notes	141
Chapter 6. Contribution of Higher Education to Regional Human Capital Formation: Overcoming the Barriers	143
Widening access	145
Improving the balance between labour market supply and demand	151
Attracting talent to the region and retaining it	158
Strategic co-ordination of the regional human capital system	160
Conclusions: managing the regional human capital system	162
Notes	163
Chapter 7. Contribution of Higher Education to Social, Cultural and Environmental Development: Overcoming the Barriers	165
Health and welfare	167
Culture and creative industries	171
Environmental sustainability	173
The case of Nuevo León in Mexico	177
Conclusions: from entrepreneurial university to the socially engaged university	177
Notes	180
Chapter 8. Building Capacity for Co-operation Between Higher Education and Regions	181
The higher education pillar	182
The regional pillar	192
Putting the bridge in place	195
Realising the potential of higher education to contribute to regional development	198
Notes	199
Chapter 9. Pointers for Future Development	201
Central governments	202
Regional and local authorities	203
Higher education institutions	204

<i>Annex A.</i>	OECD Project on Supporting the Contribution of Higher Education Institutions to Regional Development	207
<i>Annex B.</i>	Selected OECD Countries' Characteristics and Innovation-Based Policies Targeting at the Regional Engagement of Higher Education Institutions	221
	Bibliography	233

List of boxes

2.1.	Universities of Applied Sciences in Switzerland	37
3.1.	The New University for Regional Innovation (NURI) in Korea	46
5.1.	Examples of industrial liaison programmes in OECD countries	125
5.2.	Three cluster model programmes	128
5.3.	Twente TOP programme	131
5.4.	Entry points for SMEs to the university knowledge base	133
5.5.	Upgrading the existing industry base in Castellon, Spain, and North East England	135
5.6.	Science and technology cities	137
5.7.	Higher education networks supporting the growth of knowledge-based economy	139
6.1.	Higher Education Equity Programs in Australia	146
6.2.	Paraná, Brazil: Higher education expansion driven by the local authority	147
6.3.	L'Université de Moncton: A symbol of cultural pride and catalyst of local economic development	148
6.4.	Widening access through distance education in remote areas	150
6.5.	Widening access in the North East England	152
6.6.	Balancing between labour market supply and demand	153
6.7.	Work-based learning	155
6.8.	Targeted development programmes in response to regional needs	156
6.9.	Embedding regional engagement in core curriculum	157
6.10.	Enhancing entrepreneurship	159
6.11.	Fast Forward high potential management development programme	160
7.1.	Jyväskylä conjoint effort to respond to the challenges of ageing population	169
7.2.	Cultural and creative industries in region building	174
7.3.	Institute for Sustainability, Health and Regional Engagement (iSHARE)	176
7.4.	Mandatory social service for higher education students in Mexico	178
8.1.	Higher education management at the Jyväskylä University of Applied Sciences: supporting regional engagement	183
8.2.	Rewarding staff for regional engagement	185
8.3.	Regions of Knowledge	187

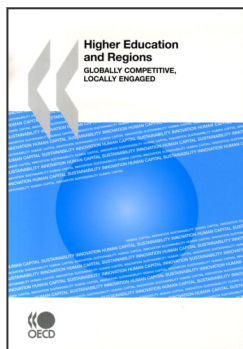
8.4. Higher education regional associations supporting regional development in the North East of England and Öresund region ..	188
8.5. Atlantic Canada Opportunities Agency (ACOA)	193
8.6. Examples of strategic co-operation in regions	195
8.7. Central government initiatives supporting the regional agenda of higher education institutions	196

List of tables

3.1. External engagement of higher education institutions	63
5.1. Perceived importance of alternative channels of knowledge transfer from university to industry	120
5.2. Research and innovative activities performed by universities in selected European countries	120
5.3. Sources of information and knowledge for innovation activities in UK manufacturing (year 2000)	121
5.4. Policy trends supporting clusters and regional innovation systems	123
5.5. Co-operation of firms with research institutions in connection with product innovation according to the size of firms: in percentage	132
B.1. Selected OECD countries' characteristics and innovation-based policies targeting at the regional engagement of higher education institutions	222

List of figures

2.1. Closed model of HEI/region interface	40
2.2. National policies impacting on HEI/regional relations	41
2.3. Regionally engaged multi-modal and multi-scalar HEI	42
7.1. Regenerating the region adapted from Barnley's model	167



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