

## Chapter 7

### **Contribution of Higher Education to Social, Cultural and Environmental Development: Overcoming the Barriers**

*Regional development is often thought of in economic terms only, and with a focus on technology-based development. The current OECD project briefing notes, however, suggested a wider interpretation. This chapter looks to the wider community engagement of higher education institutions. Through case studies it reviews the attitudes and practices of higher education institutions in relation to the social, cultural and environmental development of the region, not only as means to economic progress but also as ends in themselves. It identifies three key drivers in this domain: first, beneficial framework conditions, second, existence of networks for sustained co-operation and, third, local conditions which create a sense of urgency.*

**S**ocial, cultural and environmental developments have demonstrable if indirect economic as well as intrinsic benefits. They offer benefits underpinning and stabilising economic growth, as well as direct benefits in terms of community health and welfare, social cohesion, a diverse cultural and community life, and a clean, healthy, sustainable and self-renewing natural and man-made environment with robust and serviceable institutions including higher education institutions themselves. The costs of social and cultural exclusion and impoverishment can be calculated in the breakdown of law and order and the bill for law enforcement, lack of earning power of the under-educated and unemployed, the cost of health services and welfare benefits to the sick on sink estates and in economically collapsed areas. The same principle applies to environmental damage, where quantifiable measures may be closer to reach, and impact statements have become more common. (See *e.g.* OECD 2006i; OECD, 2007d, forthcoming.)

The idea that higher education institutions belong to and are at the service of their communities dates at least from the mid-19th century in the case of the United States Land Grant institutions. Despite the different missions and histories, most higher education institutions see social and cultural contribution as part of their role. They contribute to urban and rural area regeneration, health and social care, library services, research for community benefit as well as cultural, and environmental development. Their staff and students play civic and voluntary roles serving in local government and leading and participating in community associations, adding to the region's stock of human and social capital. Some fields of study, especially medical, social work and teacher training, lend themselves to student activities which make a contribution to the social good, sometimes voluntarily or *pro bono*, sometimes as part of work placements. This may include direct provision of medical and clinical facilities and services; other examples can be found as in law, with legal aid to those in need and poverty.

Higher education institutions can play an important role in the vitalisation and regeneration of cities and regions. Regions can regenerate themselves through the complementary and cumulative efforts of formal and informal learning, economic actions, social measures and cultural/intercultural practices which work in reciprocal movement. Accordingly, the cumulative effect takes place if measures are taken not only for creating an attractive environment for economic activity and inward investment but also for wealth distribution, social

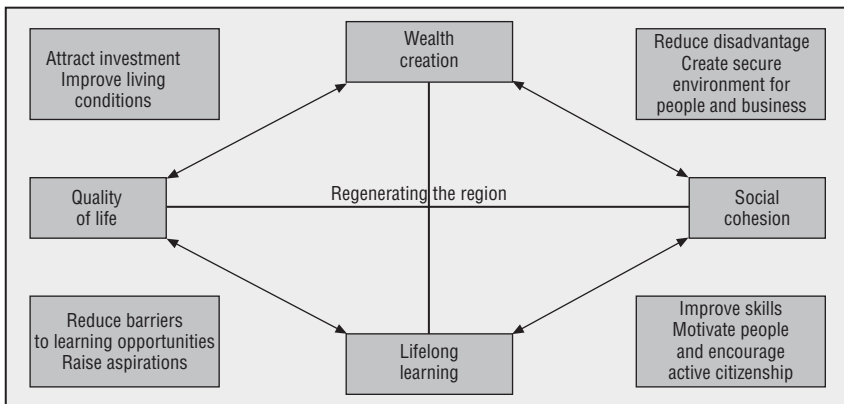
cohesion and the removal of barriers to learning opportunities and raising aspirations. (Bélanger, 2006). Figure 7.1 below attempts to describe a model for regional regeneration.

The current OECD study draws attention to a number of activities linked to the social, cultural and environmental role of the higher education institutions. Whilst many of the initiatives were excellent in their own right, they often remained marginal endeavours. The primary focus of concerted efforts was clearly on business related competitiveness and measurable outcomes related to this. There is, however, evidence that concentrating solely on business, competitiveness and technological advancement involves a risk of reduced sense of belonging on the part of people in the remote areas and in the fringes of the society as well as under-optimal use of human resources. Arguing the social, civil and sustainability case in specific economic terms may, however, be a necessary expedient to take social, cultural and environmental issues up the agenda.

### Health and welfare

Higher education institutions often have a strong emphasis placed upon health and welfare services including neighbourhood renewal and community development. These forms of public service involvement represent a massive part of the business of the higher education and the region, but the scale of work of higher education institutions is often overlooked. The research-based work carried out in medicine and health illustrates that high quality international level research is not jeopardised by regional co-operation and application.

Figure 7.1. **Regenerating the region adapted from Barnley's model**



Source: Belanger, 2006.

Higher education institutions contribute to health, safety, physical fitness and general social well-being of the regions residents through their learning programmes, research, services and infrastructure. Examples include Busan, Korea, where there is a number of activities in the medical, health and social welfare fields including a range of special programmes for different groups in need. The role of university medical schools in contributing to community health is strengthened by voluntary community service groups, free medical services and special outreach activities. In the North East of England, which lags behind in many health indicators, the region's Public Health Observatory is housed at the Durham University and works with the Regional Development Agency to turn regional data into information which is useful for carrying out successful health policies. The work of the Wolfson Research Institute on Queen's College Stockton campus of the University of Durham focuses on research on medicine, health and wellbeing of people and places with particular emphasis on analysing these issues in the North East of England. It has turned the region into a laboratory for university research. Newcastle University's Cancer Unit has become part of the regional health system. In Denmark, higher education institutions are working in close collaboration with the public health system, e.g. Alexandra Institute in Aarhus is carrying out R&D projects for user-driven ICT-based innovation in hospitals and public health.

Most OECD countries are faced with a rapidly ageing population. There is a need to keep the ageing population – which often has low skills – active in working life and also to support the functional independence of the elderly in order to decrease the costs of social and health care services. In the current OECD study the emphasis on this challenge was evident e.g. in Finland and Korea, both experiencing exceptionally rapid demographic change. While the Jyväskylä region in Finland had already taken steps to mobilise higher education in this agenda in a more systematic manner, Busan did not yet show evidence of integrative development strategy in the so-called “Silver Industry” in which higher education institutions could be centrally involved. The difference may be attributed not only the small size and the limited number of higher education institutions in Central Finland, but also to the fact that in Jyväskylä gerontology has a strong multidisciplinary knowledge base within the higher education institutions and a long tradition of community level intervention. The public authorities, regional and local, have played a key role as facilitators because their social services are potential customers for the technology and systems being developed (Box 7.1).

### ***Community regeneration and rural development***

In declining urban areas, higher education institutions can have a positive impact through their campuses and other property assets for the provision, for example, of low-cost student accommodation and low-cost

### Box 7.1. **Jyväskylä conjoint effort to respond to the challenges of ageing population**

Finland has one of the fastest ageing populations among the OECD countries. Central Finland has particularly pronounced regional disparities in this field. For example, the small community of Luhanka in the southern part of Central Finland is the “oldest” in the country in terms of its population: 33% of population is over 65 years old whereas for Central Finland the corresponding figure is 17%. In addition, the Jyväskylä region in the core of the region is one of the fastest growing city regions in the country. Due to rapid structural change it lags behind the national average in terms of long term and youth unemployment rates, as well as the share of the population receiving social assistance. The demographic and structural changes are closely linked to the social and health care provision.

Good practice of collaboration between higher education and regional and national stakeholders include the *WIRE programme* which seeks to enhance the life quality and social inclusion of the long-term unemployed. The Jyväskylä University of Applied Sciences is working with a wide range of stakeholders to bring the long-term unemployed back into working life. The programme has been running over a ten year period using a range of physical and social rehabilitation measures, in part through a Rehabilitation Service Clinic which is a student training centre of the University. A wide range of partners is involved across public, private and third sectors. The WIRE approach has proved a success in empowering the long-term unemployed, encouraging them to acquire new skills and getting them back into employment; in 2000-2004 it contributed to the re-employment of 800 persons who no longer generate social cost but instead contribute to the regional and national prosperity. WIRE has been recognised as the best practice by the National Research and Development Centre for Welfare and Health (STAKES). Its methods are being embedded into the service systems of the municipalities in Central Finland. WIRE is also one of the best practice cases linked with the European EuroHealthNet which aims at decreasing health inequalities in Europe.

In the 1990s, Jyväskylä Science Park launched a special programme for the development of the new emerging Wellness industry combining education and research in the university. During the following ten years, the region developed a system to translate leading-edge research in health and physical activity amongst older people into products and services that could benefit an ageing population served by the municipal authorities. Activities are based on the strong multidisciplinary knowledge base in gerontology and basic research which is funded by the Academy of Finland. An independent foundation, *Gerocenter*, has been established with a representation from civil society and funded by Finland’s Slot Machine Association (RAY) to underpin the development of systems and services to support active ageing.

**Box 7.1. Jyväskylä conjoint effort to respond to the challenges of ageing population (cont.)**

Translation of research into products is facilitated by the Wellness Dream Lab. Practice-based applied research in hospitals and community services, and practitioner training are undertaken in the Jyväskylä University of Applied Science. There is also a flow of practitioners into the research programmes in the University of Jyväskylä to undertake higher degrees. A Human Technology Forum has been established so that actors in the system meet and exchange knowledge and experience. A building (Viveca), owned and managed by the Science Park, houses selected parts of the above chain, including spin-off companies.

student transportation initiatives. When linked in with the local and municipal authority, the higher education institutions can add to the general amenity of the town centre, for example parks and gardens, safety, recreation. The contracting out of HEI catering, cleaning, financial and other services can add to the employment based of depressed urban and rural areas in which the campuses are located.

Higher education institutions can also target part of their core functions, i.e. research and teaching, to regenerate disadvantaged geographical communities. For example, in Twente (Netherlands) the redevelopment of the Roombeek estate in Enschede involves a partnership between two higher education institutions and the community sector. It provides research support, including student dissertation projects, in the rebuilding of a suburb devastated in an industrial disaster in 2000. The partnership approach to integrative regeneration is already judged a success and being emulated elsewhere. The case is unusual in being triggered by a particular disaster and concerned with the regeneration of a poor urban area.

The North East of England has witnessed a rapid decline in traditional industries. The University of Sunderland, the public authorities and private donors have engaged in the regeneration of the Wearside area devastated by shipbuilding collapse while the Durham University is working in the deprived area of Stockton through the new Queen's College. In Newcastle, the two universities are engaged in the regeneration of the deprived West End and other parts of the city and the wider region.

The University of Mount Allison in Canada offers a Rural and Small Town Programme which prepares people and organisations for developing sustainable rural communities and small towns. The programme links

research and action by generating and sharing new knowledge, developing self-help tools and providing information and educational services.

Networks for rural regeneration led by higher education institutions have been established for example in Central Finland, Twente in the Netherlands and the North East of England. A rural enterprise initiative of the University of Twente (Kansrijk Eigen Baas or KEB) supports innovation and enterprise in declining agricultural settings, working with a local bank to access small loans. Newcastle University is leading the Northern Rural Network bringing together more than 600 researchers and rural development practitioners from businesses, public agencies and the voluntary sector in the region the neighbouring regions of Cumbria, Lancashire and North Yorkshire to help rural and regional development. It has operationalised a model of locally centred rural development. Almost 400 firms have benefited from students' work. The approach is unique in the way it copes with the low base of aspiration of the micro enterprises and the voluntary sector. The free membership has more than doubled over the past three years.

## Culture and creative industries

Culture as an agent of development takes three forms:

- culture as an end in itself, enhancing the quality of life;
- indirect economic benefit in attracting and retaining the creative classes which drive the knowledge society;
- direct contribution to the creative industries through enterprise formation, growth, productivity and employment.

Higher education institutions can make a contribution to the cultural foundation of a region and to the quality of life of the community. They can do this through culturally-based learning programmes and research projects that increase awareness, provide policy advice and services for culturally diverse groups. Higher education institutions can engage with cultural groups to help build their capacity to better serve their members. They can also make available for public access a wide range of culturally-specific infrastructure, such as museums, libraries, galleries, orchestras, auditoriums, sporting facilities, community radio and television stations. They may also sponsor cultural festivals and performances, offer specialist expertise and take part in specific cultural initiatives and events.

Richard Florida (2002) has proposed that a booming economy is driven by the presence of “creative class”, who are attracted to cities characterised by talent, tolerance and technology. Higher education institutions help to connect city-regions (and nations) to global flows of knowledge and talent, thereby enhancing regional competitiveness. Furthermore, higher education

institutions can build social inclusion and cohesion by creating more diverse, multicultural and tolerant communities (see *e.g.* Gertler and Vinodrai, 2004). Through this process, they internationalise their regions and act as anchors for creative thinking and activity and have a positive effect on inward investment. There is often, however, no overall strategy to link the internationalisation of the higher education institution to the region building to make the region a more diversified and culturally developed place, interesting and attractive to people and business. Active measures are not taken to link the international students and the faculty with region and its working life. There is also a lack of effective use of the higher education institution's international linkages and alumni.

The creative class is closely linked to human capital and business formation. Evidence comes from the United Kingdom where the creative industries are the fastest growing sector of the economy: between 1997 and 2002 it grew at around twice the rate of the rest of the economy at an average of 6% per annum. It contributes about 8% towards UK GDP and employs almost 2 million people. Exports have grown by an average of 11% per annum during the same period, contributing over GBP 11 billion to the balance of trade, more than the construction, insurance and pensions industries and twice that of the pharmaceutical sector. Graduates from creative arts, design and media courses are entrepreneurial and about one third of all self-employed first degree graduates come from these disciplines. The sector is one of the most highly educated with around 43% having degrees of higher level qualification, compared with 16% of the workforce in total. (DCMS, 2006).

Creative sector is also a major economic driver globally: it accounts for 7% of GDP and is growing at 10% per annum. A number of countries, regions and cities, *e.g.* Queensland, New Zealand, Hong Kong and Singapore, have developed their strategies for Creative Industries emphasising the sector's economic impact. Also China is making heavy investments in the Creative Industries and applying a broad definition of creativity. (DCMS, 2006).

Some regions in the OECD study aim to reinvent themselves as “creative places” with the help of their higher education institutions: In Trøndelag, Norway, the vision of Trondheim as a creative city has been developed by local and regional authorities. State of Nuevo León has launched Regia Metrópoli project which aims to highlight historical and cultural heritage of the region. Busan in Korea seeks to brand itself as “Dynamic Busan” with a revived cultural centre which will attract inward investments and human capital. The Busan International Film Festival is more than ten years old and Asia's largest film festival, supported in different ways by several higher education institutions in a concerted attempt to recreate a strong cultural identity for Busan. Examples of longstanding collaboration in the arts arena include *e.g.* the cross-border region Öresund where the Cultural Bridge Fund for



strengthening cultural cooperation has been an important tool for building a more integrated culture across the Strait. There was also evidence of collaborative efforts between higher education institutions and their cities and regions to create a new location for collaborative cultural activity (e.g. Twente Music Quarter, Aalborg, Denmark and to a smaller scale in Jyväskylä).

In general, however, the stakeholders inside and outside of the higher education institutions had not yet fully recognised the potential for collaboration, partnership and advocacy in culture and creative industries. Examples from across the UK show that development of the cultural sector can lead directly to regeneration, increased investment and growth in city regions. For example, commercial businesses have been attracted by the development of cultural and creative hub in Manchester's Northern Quarter and Quayside in Newcastle. The North East England example demonstrates the importance of flagship projects in mobilising the region building. It also highlights the importance of collaboration between higher education institutions and regional stakeholders (Box 7.2).

While culture and creative industries may be perceived as elitist, sport can provide opportunities for all social groups. Many higher education institutions provide sports activities and facilities for their own students and staff but there is only limited evidence of using sports strategically as a means of region building. In the North East of England sport is, however, regarded as a great leveller in facilitating knowledge sharing between higher education institutions and their communities. Sport is used in helping address disparities, in retaining a well-rounded and educated workforce, promoting social equity and impacting positively on the daily lives of the communities.<sup>1</sup>

## Environmental sustainability

Higher education institutions can contribute to sustainable environmental development in their regions in many ways, for example by:

- generating human capital in the region through their learning and further education programmes in areas of sustainable development;
- acting as a source of expertise through research, consultancy and demonstration;
- playing a brokerage role in bringing together diverse regional actors and elements of capacity to the sustainability process;
- demonstrating good practice through on-campus management and development activities, strategic planning, building design, waste minimisation and water and energy efficiency practice, responsible purchasing programmes and pursuing good citizen type initiatives like a "green campus";

### Box 7.2. Cultural and creative industries in region building

Newcastle-Gateshead's joint bid to be nominated European Capital of Culture for the United Kingdom attracted attention to the role of culture in the city regions. Although ultimately unsuccessful, the bidding process provided a concrete goal upon which a wide range of public, private and community partners including the higher education institutions could work together. In the long run, the Capital of Culture bid represents only an episode within a range of high-profile cultural development projects and networks within the region including the Year of the Visual Arts in 1996 and the development of the Culture 10 strategy.

The universities in the North East have recognised the potential for collaboration, partnership and advocacy in culture and cultural industries which are seen as a major source of growth for the region. They collaborate to drive the renaissance of local culture and *e.g.* support the two major developments on the Tyne: The Baltic Contemporary Arts Centre and the Sage Gateshead Music Centre. Each university has its own strengths to drive the cultural agenda. For example, The Centre for Cultural Policy and Management of Northumbria University provides advice, project development and research in relation to cultural policy and is working closely together with the range of cultural stakeholders in the region. Newcastle University in partnership with Sage Gateshead Music Centre and the region's other universities a national Centre of Excellence in Teaching and Learning in Music which *inter alia* uses music as a pathway from the community into a wide range of academic programmes. The University is also leading a partnership of local bodies to establish a Cultural Quarter which will transform the space where the city and the university meet into an area of social and cultural activity. The higher education regional association and its special committee for culture have a brokerage role in all these projects.

- offering recognition and reward incentives for staff to be involved in sustainable development leadership groups in the regional community.

Higher education institutions are not only consumers of non-renewable energy and generators of CO<sub>2</sub>, they are also sources of technological and organisational expertise in this field. At the heart of this global challenge is the link between the opportunities arising from technology-based research (*e.g.* the exploitation of geothermal energy sources) and its incorporation into the actions in the wider community where regional and local agencies such as local government can play a key role, for example through the land use planning systems. Students and alumni as future responsible actors and opinion formers could also be critical members of regional as well as global

learning systems. Embedding sustainability into study programme can thus have long term effects on the working life through “knowledge transfer on legs” i.e. students and graduates shaping the working life. This requires articulation from within the region outside the higher education institutions as well as inside the institutions.

At the first Earth Summit in 1972 in Stockholm, education was identified as fundamental to the successful achievement of sustainable development. Since then progress has been patchy. A necessary injection of urgency was given in 2005 when the United Nations adopted a Decade of Education for Sustainable Development. An essential part of the subsequent strategies for Europe/North America, Australia/Asia and Africa is the requirement to develop national education for sustainable development policies. Some countries like the Netherlands, the United Kingdom, and to some extent the Nordic countries have these in place already.

Many higher education institutions have introduced or are in the process of introducing sustainability development policies, statements and visions. Some have developed estate management systems and supplier policies which are geared towards minimising energy use and are also working to reduce the “travel foot print” of their staff and students. There is also a wide range of R&D activities and consultancy services available to facilitate and embed environmental management systems into local businesses. For example, in Nuevo León, Mexico, the Monterrey campus of the ITESM has a Centre for Environmental Quality which has since 1961 provided a broad range of teaching, research, consulting, laboratory services, extension courses and continuing education in environmental quality. In Central Finland, the approach of the two higher education institutions to environmental development is an example of complementary work between polytechnics and universities with broad indirect and direct community involvement to support the aim to make the region free from fossil fuels by 2015. In the Canary Islands, the Forum for Sustainable Development is bringing together higher education institutions and a range of governmental and other agencies in a situation where the two universities often seemed to be at loggerheads and the region has yet to find a way of harnessing their energies effectively in the region’s interest.

### ***Sunshine-Fraser Coast: Building on local assets***

In the Sunshine-Fraser Coast the higher education sector provides education for local students and also aims to attract external students whose fee income provides institutional stability. The University of the Sunshine Coast has chosen to do this through building a critical mass in subjects which are of local interest and for which the local environment provides an interesting “laboratory” or case study. The university has developed courses in

coastal studies, marine tourism, and plant/marine biotechnology. It has also developed partnerships with local businesses and created an infrastructure which gives it a competitive edge in delivering these courses with local applicability. The Institute for Sustainability, Health and Regional Engagement (iSHARE) has provided an institutional framework for this work. (See Box 7.3.)

In general, however, the OECD study revealed only limited conjoint action in the domain of environmental sustainability. International experience in this field shows that individual university approach cannot work alone and what is needed is an approach that targets education systems complemented by organisational change of institutions in that system. This is happening for example in the United Kingdom through the Sustainability Integration Group (SIGnet) a body made up of all the organisations that plan, fund and regulate the higher education sector, facilitated by Forum for the Future. In addition, there is a need for a strategic partnership between the higher education institutions and their region. This can play a key role in environmental sustainability generally and global warming in particular.

### **Box 7.3. Institute for Sustainability, Health and Regional Engagement (iSHARE)**

The Institute for Sustainability, Health and Regional Engagement (iSHARE) of the University of the Sunshine Coast provides a research platform for the interface between environment and health disciplines. A regional advisory board brings community, business leaders, and researchers together to engage in identification of priorities. There is also an international benchmarking group to provide input and feedback. An example of collaborative research under the administration of iSHARE is The Fraser Island Research and Education Facility, developed in co-operation with the Kingfisher Bay Resort and Village.

This teaching and research laboratory on Fraser Island, along with an environmental camp, provides a base for advanced environmental and eco-tourism research and education. The significant level of private sector support for this facility from the Kingfisher Bay Resort, as well as the interaction between the university and the Resort in identification of relevant research and education projects, makes this facility a model of collaboration. As a result of this initiative, the university research capacity has been enhanced and the eco-tourism offerings through Kingfisher Bay Resort have been strengthened.

## The case of Nuevo León in Mexico

In Nuevo León the community development agenda is driven by the state government which has included an entire programme in its State Development Plan aimed at transforming the urban image of Monterrey's metropolitan area through a series of projects with the different municipalities and through building up an urban centre using a series of symbols embodied by cultural and recreational, educational, religious and leisure centres.

Underpinning the efforts is a social commitment and responsibility which is facilitated by the federal government's requirement of mandatory student social service as a graduation requirement. While there are national concerns about the way social service is operationalised, it has potential for much impact in Mexican society and has generated good results in mainstreaming community service activities into the core business of the higher education institutions (Box 7.4) (see also OECD, 2006).

The programmes developed by individual higher education institutions are notable for their partnership and their capacity to work across all sectors in sustained commitment. There is, however, limited evidence of systematic inter-institutional co-operation between different institutions. Mandatory social service is not underpinned with specific incentives or monitoring of results. More could be achieved with conjoint action and for example opening the well-developed cultural and sport services to the people.

## Conclusions: from entrepreneurial university to the socially engaged university

While the wider contribution of higher education to community development and cultural change seem to be relatively under-developed in many regions, there are notable exceptions where higher education institutions have embraced the role of "good regional citizenship". There are three key drivers which facilitate active engagement of higher education institutions in this area:

- beneficial framework conditions created by the government, *e.g.* legislation and funding;
- existence of networks for sustained co-operation;
- local conditions creating a sense of urgency.

These key factors were present to a varying degree in two cases of the current OECD study. In Mexico, mandatory social service for higher education students coupled with the local conditions provides a framework for enhanced community service. This is a national approach and Mexico thus gives an interesting model for countries seeking to mobilise their higher

#### Box 7.4. **Mandatory social service for higher education students in Mexico**

Mexican students in public (and some private) institutions are required to perform public service. Established in the 1940s, to assist marginal rural and urban communities it has expanded to productive sector and public, municipal, state and federal entities using collaboration programmes and inter-institutional agreements. Social service lasts between 6-12 months but the duration is in no case less than 480 hours. The concept of Student Social Service as a graduation requirement in higher education has the potential for much impact in the society. While it provides a powerful mechanism for region building it often remains paternalistic and aid-based rather than aligned with the community development objectives. To take a full advantage of the social service closer links between social service programmes and local development efforts need to be created. There is also need to incentivise this work and monitor the outcomes.

The University of Monterrey's Center for Solidarity and Philanthropy enables the university community to take part in community work programmes designed to empower people and enhance social growth. Courses in Mexican Reality, Ethics and Social Responsibility and Social Community Development are linked with social service projects in the field. The University of Monterrey has twenty years' experience in working with low income communities and is involved with more than a hundred collaborative programmes with social work institutions.

education to strengthen a social contribution through teaching and assessment channels. In the North East of England the existence of a long-standing higher education regional association and a shared experience of a struggling rustbelt area remote from the centre of power and lagging on many socio-economic indicators work towards the same end. In this case the context is regional, but in both, higher education institutions, despite their different identities and histories, see community engagement as part of their mission and work. The form that it takes depends on the character and location of the institution and on the particular socio-economic and regeneration needs of the city or region.

In general, however, the softer and longer term community development and cultural issues remain relatively under-developed. This can be attributed to national policy environments and to the pressures on and behaviour of higher education institutions in this environment. The problems of measurement of impacts and limited resources, including absence of incentives for institutions

and staff members influence all the wider aspects of development. Funding for regional development is typically project-based, short term and tightly focused on an economic task. Staff promotion is usually dependent on publication, not on engagement in the 3<sup>rd</sup> task activities. Narrowly defined output targets within short time frames to which higher education institutions' income streams are tied militate against building the social as well as economic infrastructure on which sustainable (and measurable) development is based. By virtue of using comparative and often competitive indicators for national purposes they also militate against the kind of regional diversity built on different endogenous strengths and assets which provides an underlying logic for decentralisation.

To take this agenda forward, there is a need for higher education institutions to undertake and disseminate an audit of their engagement in the social, cultural and environmental development of the region, highlighting examples of good practice locally as well as elsewhere.<sup>2</sup> This should be followed by a preparation of joint strategies between the higher education institutions and the appropriate public bodies who should use their resources to underpin selective programmes of action within the higher education institutions.<sup>3</sup> However, until governments at national and regional levels (and indeed at European Union and other international agency levels) include social, cultural and environmental dimensions into the agenda, this aspect of regional development including higher education partnership will continue to struggle.

Finally, the public good implies access to the reservoir of knowledge generated in higher education, how that knowledge is used to the benefit of the wider society, not just the academy and last but not least the role of the society in the co-production of this knowledge. The Council of Europe (2002) has argued that it is higher education's responsibility to foster the commitment of citizens to sustain public action aimed at the wellbeing of society at large rather than just individual benefits. It should promote the values of democratic structures and processes, active citizenship, human rights and social justice; environmental sustainability and dialogue. While these are abstract and global aspirations, the word "citizen" does have a specific territorial connotation. Many of the goods and bads of modern society become transparent at the city and regional level and public discourse around them leading to action can and should be mobilised by higher education institutions working with their regional partners. The capacity of these partnerships to enter into such mature dialogues is the subject of the next chapter.

## Notes

1. The Directors of Sport of the five universities in the North East of England have come together to build innovative sporting engagement with local communities. The universities draw on the resources of a student population; students are now working alongside young people in the local communities to help develop leadership and life skills, as well as sporting capability. The partnership is in the process of building on the concept of Sport Universities to develop more inclusive partnering with local communities.
2. Higher education staff and students lead community associations and serve in local government positions, adding to the region's stock of human and social capital. Systematic mapping of the links and networks of their staff was carried out only in a few higher education institutions. There is generally a lack of comprehensive information on "who" is engaged with "what" as a way to achieving more systematic regional engagement by the higher education institutions.
3. There are different ways of exploring this complex, multi-stranded area. Different types of typologies may help higher education institutions to address holistically their regional social, cultural and environmental engagement: 1) Classifying between the social, cultural, and economic in a scorecard way to appraise institutional success; 2) Distinguishing different processes and methods of nurturing social, cultural and environmental contributions to identify the effective or deficient modes of self-development, outreach, partnership and delivery; and 3) Distinguishing activities that are mainstreamed into regular programmes of teaching and research from the add-ons.



## Bibliography

- Agarwal and Henderson (2002), "Putting Patents in Context: Exploring Knowledge Transfer from MIT". *Management science*, January 2002.
- Aghion P. and P. Howitt (1998), *Endogenous Growth Theory*, The MIT press, Cambridge.
- Arbo, P. and P. Benneworth (2007), *Understanding the Regional Contribution of Higher Education Institutions: a Literature Review*, OECD Education Working Paper, No. 9, OECD, Paris, [www.oecd.org/edu/workingpapers](http://www.oecd.org/edu/workingpapers).
- Asheim, B. and M. Gertler (2005), "The Geography of Innovation", in J. Fagerberg et al. (eds.), *Oxford Handbook of Innovation*, Oxford University Press, Oxford.
- Audretsch, D. B. and M.P. Feldman (1996), "Innovative Clusters and the Industry Life Cycle", *Review of Industrial Organization*, Vol. 11, No. 2, pp. 253-273.
- Bachtler, J. (2004), "Innovation-led Regional Development: Policy Trends and Issues", Paper presented at the OECD Conference on Innovation and Regional Development: Transition Towards a Knowledge-based Economy. Florence, Italy, 25-26 November 2004.
- Bélanger, P. (2006), "Concepts and Realities of Learning Cities and Regions", in C. Duke, L. Doyle and B. Wilson (eds.), *Making Knowledge Work. Sustaining Learning Communities and Regions*, National Institute of Adult Continuing Education (NIACE), Asford Colourpress, Gosport.
- Bender, T. (1988), Introduction in Bender, T. (ed.), *The University and the City, from Medical Origins to the Present*, Oxford University Press, New York/Oxford, pp. 3-10.
- Best, M. (2000), "Silicon Valley and the Resurgence of Route 128: Systems Integration and Regional Innovation", in J. Dunning (ed.), *Regions, Globalization, and the Knowledge-Based Economy*, Oxford University Press, Oxford.
- Binks, M (2005), *Entrepreneurship Education and Interactive Learning*, National Council for Graduate entrepreneurship (NCGE) Policy Paper No. 1, [www.ncge.org.uk/downloads/policy/Entrepreneurship\\_Education\\_and\\_Integrative\\_Learning.doc](http://www.ncge.org.uk/downloads/policy/Entrepreneurship_Education_and_Integrative_Learning.doc).
- Birch, D. L. (1987), *Job Creation in America: How Our Smallest Companies Put the Most People to Work*, Free Press, New York.
- Brennan, J., R. Naidoo (2007), "Higher Education and the Achievement of Equity and Social Justice" in Higher Education Looking Forward (HELF), European Science Foundation: Forward Look, forthcoming.
- Brunner, J. J., P. Santiago, C. García Guadilla, J. Gerlach and L. Velho (2006), *OECD Thematic Review of Tertiary Education. Mexico. Country Note*, OECD, Paris, [www.oecd.org/dataoecd/22/49/37746196.pdf](http://www.oecd.org/dataoecd/22/49/37746196.pdf).
- Brusco, S. (1986), "Small Firms and Industrial Districts: The experience of Italy", in D. Keeble and E. Wever (eds.), *New firms and regional development in Europe*, Croom Helm, London, pp. 184-202.

- Burt, R. (2002), "The Social Capital of Structural Holes", *New Directions in Economic Sociology*, Russel Sage, New York.
- Christensen, J.L., B. Gregersen and A. Rogaczewska (1999), "Vidensinstitutioner og innovation" (Knowledge Institutions and Innovation), DISKO project, Report No. 8, Erhvervsudviklingsraden (Council for the Development of Economic Life), Copenhagen.
- Centre for Urban and Regional Development (CURDS) (2005), *OECD Territorial Review of Newcastle and the North East*, OECD, Paris.
- Clark, B. R. (1998), *Creating Entrepreneurial Universities: Organizational Pathways of Transformation*, Pergamon-Elsevier Science, Oxford.
- Clark, (2006), OECD, *Thematic Review of Tertiary Education. Country Report: United Kingdom*, OECD, Paris, [www.oecd.org/dataoecd/22/3/37211152.pdf](http://www.oecd.org/dataoecd/22/3/37211152.pdf).
- Cook, P. (2004), "University Research and Regional Development", European Commission, Research Director-General.
- Coulombe, S., J.-F. Tremblay and S. Marchand (2004), "Literacy Scores, Human Capital and Growth Across 14 OECD Countries", *Statistics Canada*, Ottawa.
- Council of Europe (2006), *Declaration on Higher Education and Democratic Culture: citizenship, human rights and civic responsibility*, Strasbourg, 22-23 June 2006, [http://dc.ecml.at/contentman/resources/Downloads/Declaration\\_EN.pdf](http://dc.ecml.at/contentman/resources/Downloads/Declaration_EN.pdf) (accessed January 2007).
- Crawford, E., T. Shinn and S. Sörlin (1993), "The Nationalization and Denationalization of the Sciences. An introductory essay", in E. Crawford, T. Shinn and S. Sörlin (eds.), *Denationalizing Science. The Contexts of International Scientific Practice*, Kluwer, Dordrecht.
- Davies, J., T. Weko, L. Kim, and E. Thustrup (2006), *Thematic Review of Tertiary Education: Finland Country Note*, OECD, Paris, [www.oecd.org/dataoecd/51/29/37474463.pdf](http://www.oecd.org/dataoecd/51/29/37474463.pdf).
- Department for Culture, Media and Sport (DCMS) (2006), *Developing Entrepreneurship for the Creative Industries. The Role of Higher and Further Education*, DCMS, London.
- DfES, DTI, DWP, HM Treasure (2003), *21st Century Skills: Realising Our Potential (Individuals, Employers, Nation)*, The Stationery Office, London.
- Drabenstott, M. (2005), *Review of the Federal Role in Regional Economic Development*, Federal Reserve Bank of Kansas City.
- Etzkowitz, H. and L. Leydesdorff (2000), "The Dynamics of Innovation: from National Systems and 'Mode 2' to a Triple-Helix of University-Industry-Government Relations", *Research Policy*, Vol. 29, No. 2, pp. 109-123.
- Felsenstein, D. (1996), "The University in the Metropolitan Arena: Impacts and Public Policy Implications", *Urban Studies*, Vol. 33.
- Florida, R. (2002), *The Rise of the Creative Class and How It's Transforming Work, Leisure, Community and Everyday Life*, Basic Books, New York.
- Florida, R. (2005), "The World is Spiky", *Atlantic Monthly*, Boston.
- Forum for the Future (2006), *Forum for the Future website*, [www.forumforthefuture.org.uk](http://www.forumforthefuture.org.uk), accessed 12 January 2007.
- Friedman, T. (2005), *The World is Flat: A Brief History of the Twenty-First Century*, Farrar, Straus and Giroux, New York.

- Fundación Conocimiento y Desarrollo (2005), *Informe CYD 2005: La contribución de las universidades españolas al desarrollo*, Fundación CYD, Barcelona.
- Gertler, M. and T. Vinodrai, (2004), *Anchors of Creativity: How Do Public Universities Create Competitive and Cohesive Communities?*, Department of Geography, University of Toronto.
- Gibb, A. (2005), *Towards the Entrepreneurial University: Entrepreneurship Education as a Lever for Change*.
- Gibbons, M., C. Limoges, H. Nowotny, S. Schwartzman, P. Scott and M. Trow (1994), *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*, Sage, London.
- Goddard, J., D. Charles, A., Pike, G. Potts and D. Bradley (1994), *Universities and Communities: a Report for the Committee of Vice-Chancellors and Principals*, Centre for Urban and Regional Development Studies, Newcastle University, Newcastle.
- Goddard, J. B. and P. Chatterton (2003), The response of universities to regional needs, in F. Boekema, E. Kuypers, R. Rutten (eds.), *Economic Geography of Higher Education: Knowledge, Infrastructure and Learning Regions*, Routledge, London.
- Goddard, J. B. (2005), "Supporting the Contribution of HEIs to Regional Developments Project Overview", Paper presented to OECD/IMHE Conference, Paris, 6-7 January 2005.
- Goldstein, H. and M. Luger (1993) "Theory and Practice in High-Tech Economic Development", in D. R. Bingham and R. Mier (eds.), *Theories of Local Economic Development: Perspectives from across the Disciplines*, Sage Publications, Newbury Park.
- Grubb, N., H. M. Jahr, J. Neumüller, S. Field (2006), *Equity in Education. Thematic Review. Finland Country Note*. OECD, Paris, [www.oecd.org/dataoecd/49/40/36376641.pdf](http://www.oecd.org/dataoecd/49/40/36376641.pdf).
- HEFCE (Higher Education Funding Council for England) (2006), *Widening Participation: a Review*, Report to the Minister of State of Higher Education and Lifelong Learning by the Higher Education Funding Council for England, [www.hefce.ac.uk/widen/aimhigh/review.asp](http://www.hefce.ac.uk/widen/aimhigh/review.asp).
- Innovation Associates Inc. (2005), *Accelerating Economic development through University technology Transfer*, based on Report to the Connecticut Technology Transfer and Commercialization Advisory Board of the Governor's Competitiveness Council, [www.innovationassoc.com](http://www.innovationassoc.com).
- Joaquin BJ, P. Santiago, C. García Guadilla, J. Gerlach, L. Velho (2006), *Thematic Review of Tertiary Education: Mexico Country Note*, [www.oecd.org/dataoecd/22/49/37746196.pdf](http://www.oecd.org/dataoecd/22/49/37746196.pdf).
- Kaldor, N. (1970), "The Case for Regional Policies", *Scottish Journal of Political Economy*, Vol., 17, No. 3, pp. 337-348.
- Kline, S. J. and N. Rosenberg (1986), "An Overview of Innovation", in R. Landau and N. Rosenberg (eds.), *The Positive Sum Strategy: Harnessing Technology for Economic Growth*, National Academy Press, Washington, D.C., pp. 275-304.
- Laursen, K and A. Salter (2003), "The Fruits of Intellectual Production: Economic and Scientific Specialisation among OECD Countries", Paper No. 2, Danish Research Units for Industrial Dynamics, University of Aalborg, Aalborg.
- Lawton Smith, H., J. Glasson, J. Simmie, A. Chadwick and G. Clark (2003), *Enterprising Oxford: The Growth of the Oxfordshire High-tech Economy*, Oxford Economic Observatory, Oxford.

- Lester, Richard K. (2005), *Universities, Innovation, and the Competitiveness of Local Economies: A Summary Report from the Local Innovation Systems Project–Phase I*. MIT IPC Local Innovation Systems Working Paper 05-005 | IPC Working Paper 05-010, <http://web.edu/lis/papers/LIS05.010.pdf>.
- Locke, W., E. Beale, R. Greenwood, C. Farrell, S. Tomblin, P.-M. Dejardins, F. Strain, and G. Baldacchino (2006), *OECD/IMHE Project, Supporting the Contribution of Higher Education Institutions to Regional Development, Self Evaluation Report: Atlantic Canada*, [www.oecd.org//17/12/37884292.pdf](http://www.oecd.org//17/12/37884292.pdf).
- Lundvall, B. Å. (ed.) (1992), *National Systems of Innovation: Towards a theory of Innovation and Interactive Learning*, Pinter Publishers, London.
- Lundvall B. Å. and S. Borrás (1997), *The Globalising Learning Economy: Implication for Innovation Policy*, The European Communities, Luxembourg.
- Malmberg, A. and P. Maskell (1997), “Towards an Explanation of Regional Specialization and Industry Agglomeration”, *European Planning Studies*, Vol. 5, No. 1, pp. 25-41.
- Martin, F. and M. Trudeau (1998), *The Economic Impact of Canadian University R&D*, AUCC publications, Ottawa.
- Martin, R. and P. Morrison (2003), “Thinking about the Geographies of Labour,” in R. Martin and S. Morrison (eds.), *Geographies of Labor Market Inequality*, Routledge, London, pp. 3-20.
- Mathiessen, Christian Wichman, Annette Winkel Schwarz and Søren Find (2005), *Research Output and Cooperation: Case Study of the Øresund Region: An Analysis Based on Bibliometric Indicators*, University of Copenhagen, Copenhagen.
- McClelland, C. E. (1988), “To Live for Science: Ideals and Realities at the University of Berlin”, in T. Bender (ed.), *The University and the City. From Medieval Origins to the Present*, Oxford University Press, New York/Oxford, pp. 181-197.
- Morgan, K. (1997), “The Learning Region: Institutions, Innovation and Regional Renewal”, *Regional Studies*, Vol. 31, No. 5, pp. 491-403.
- Myrdal, G. (1957), *Economic Theory and Under-Developed Regions*, Gerald Duckworth, London.
- OECD (1999), *The Response of Higher Education Institutions to Regional Needs*, OECD, Paris.
- OECD (2001a), *Cities and Regions in the Learning Economy*, OECD, Paris.
- OECD (2001b), *Managing University Museums*, OECD, Paris.
- OECD (2003a), *Funding of Public Research and Development: Trends and Changes*, OECD, Paris.
- OECD (2003b), *OECD Territorial Reviews: Øresund, Denmark/Sweden*, OECD, Paris.
- OECD (2003c), “Upgrading Workers’ Skills and Competencies”, *OECD Employment Outlook*, OECD, Paris.
- OECD (2004), *OECD Territorial Reviews: Busan, Korea*, OECD, Paris.
- OECD (2005a), *OECD Territorial Reviews: Finland*. OECD, Paris.
- OECD (2005b), *Economic Surveys: Korea*, OECD, Paris.
- OECD (2005c), *Economic Surveys: Mexico*, OECD, Paris.
- OECD (2005d), *Economic Surveys: The Netherlands*, OECD, Paris.

- OECD (2005e), *Economic Surveys: United Kingdom*, OECD, Paris.
- OECD (2005f), *Reviews of National Policies for Education: University Education in Denmark*, OECD, Paris.
- OECD (2006a), "The Contributions of Higher Education Institutions to Regional Development: Issues and Policies", GOV/TDPC(2006)22, OECD, Paris.
- OECD (2006b), *Economic Surveys: Australia*, OECD, Paris.
- OECD (2006c) *Economic Survey of Brazil*, OECD, Paris.
- OECD, (2006d), *Economic Surveys: Canada*, OECD, Paris.
- OECD, (2006e), *Economic Surveys: Denmark*, OECD, Paris.
- OECD (2006f), *Economic Surveys: Finland*, OECD, Paris.
- OECD (2006g), *Building a Competitive City-Region: The Case of Newcastle in the North East*, OECD, Paris.
- OECD (2006h), *Skills Upgrading. New Policy Perspectives*, OECD, Paris.
- OECD (2006i), *Measuring the Effects of Education on Health and Civic Engagement (Proceedings of the Copenhagen Symposium)*, OECD, Paris, available in [www.oecd.org/edu/socialoutcomes/symposium](http://www.oecd.org/edu/socialoutcomes/symposium).
- OECD (2006j), *Main Science and Technology Indicators*, OECD, Paris.
- OECD (2007a), Supporting the Contribution of Higher Education Institutions to Regional Development, project website, [www.oecd.org/edu/higher/regionaldevelopment](http://www.oecd.org/edu/higher/regionaldevelopment).
- OECD (2007b), *Economic Surveys: Sweden*, OECD, Paris.
- OECD (2007c), *Economic Surveys: Spain*, OECD, Paris.
- OECD (2007d), *Understanding the Social Outcomes of Learning*, OECD, Paris, forthcoming.
- OECD (2008), *OECD Review of Tertiary Education. Final Report*, OECD, Paris, forthcoming.
- OPDM (Office for Deputy Prime Minister) (2004), *Competitive European Cities, Where Do the Core Cities Stand?*, [www.communities.gov.uk/pub/441/CompetitiveEuropeanCitiesWhereDoTheCoreCitiesStandFullReportPDF444Kb\\_id1127441.pdf](http://www.communities.gov.uk/pub/441/CompetitiveEuropeanCitiesWhereDoTheCoreCitiesStandFullReportPDF444Kb_id1127441.pdf).
- Paytas, J., R. Gradeck and L. Andrews (2004), *Universities and the Development of Industry Clusters. Paper for the Economic Development Administration*, US Department of Commerce, Centre for Economic Development, Carnegie Mellon University, Pittsburg, Pennsylvania.
- Peck, J. (1996), *Workplace: The Social Regulation of Labor Markets*, Guildford Press, New York and London.
- Piore, M. J. and Sabel, C.F. (1984), *The Second Industrial Divide. Possibilities for Prosperity*, Free Press, New York.
- Porter, M. E. (1990), *The Competitive Advantage of Nations*, MacMillan, Basingstoke.
- Porter, M. E. (1998), "Location, Clusters and the New Economics of Competition", *Business Economics*, Vol. 33, No. 1, pp. 7-17.
- Porter, M. E. (2003), "The Economic Performance of Regions", *Regional Studies*, Vol. 37, No. 6/7, pp. 549-78.

- Rosenfeld, S. (1998) *Technical Colleges, Technology Deployment and Regional Development*, draft stock-taking paper prepared for the OECD, Regional Technology Strategies Inc, Chapel Hill, North Carolina.
- Rothwell, R. and W. Zegveld (1982), *Innovation and the Small and Medium-Sized Firm*. Frances Pinter, London.
- Scott, A. and M. Storper (2002), "Regions, Globalization and Development", *Regional Studies*, Vol. 37, pp. 579-593.
- Simmie J., J. Sennett, P. Wood and D. Hart (2002), "Innovation in Europe, a Tale of Networks, Knowledge and Trade in Five Cities", *Regional Studies*, Vol. 36, pp. 47-64.
- Smith, T and C. Whitchurch (2002), "The Future of the Tripartite Mission: Re-Examining the Relationship Linking Universities, Medical Schools and Health Systems", *Higher Education Management and Policy*, Vol. 14, No. 2, OECD, Paris.
- The Finnish Higher Education Evaluation Council (2006), The Finnish Higher Education Evaluation Council website, [www.kka.fi/english](http://www.kka.fi/english), accessed 3 January 2006.
- Vestergaard, J. (2006), "HEIs and Their Regions – an Innovation System Perspective", paper presented to OECD/IMHE Project Task Group, 10 April 2006, Paris.
- Wittrock, B. (1993), "The Modern University: the Three Transformations", in S. Rothblatt and B. Wittrock (eds.), *The European and American University Since 1800. Historical and Sociological Essays*, Cambridge University Press, Cambridge, pp. 303-362.
- World Bank Group (2002), *Constructing Knowledge Societies: New Challenges for Tertiary Education*, <http://www1.worldbank.org/education/tertiary/cks.asp>.
- Young, S. and R. Brown (2002), "Globalisation and the Knowledge Economy", in N. Hood, J. Peat, E. Peters and S. Young (eds.), *Scotland in a Global Economy: The 20:20 Vision*, Palgrave Macmillan, Hampshire.

# Table of Contents

Executive summary .....	11
<b>Chapter 1. Introductory Remarks</b> .....	19
Introduction .....	20
The OECD study .....	23
Note .....	28
<b>Chapter 2. Drivers for Regional Engagement</b> .....	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
<b>Chapter 3. Barriers to Regional Engagement of Higher Education</b> .....	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
<b>Chapter 4. The Regions and their Higher Education Institutions</b> .....	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
<b>Chapter 5. Contribution of Higher Education to Regional Business</b>	
<b>Innovation: Overcoming the Barriers</b> .....	117
Enhancing the engagement potential of higher education institutions .....	122
Policy practices and instruments .....	130
Conclusions .....	140
Notes .....	141
<b>Chapter 6. Contribution of Higher Education to Regional Human Capital Formation: Overcoming the Barriers</b> .....	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
<b>Chapter 7. Contribution of Higher Education to Social, Cultural and Environmental Development: Overcoming the Barriers</b> .....	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
<b>Chapter 8. Building Capacity for Co-operation Between Higher Education and Regions</b> .....	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
<b>Chapter 9. Pointers for Future Development</b> .....	201
Central governments .....	202
Regional and local authorities .....	203
Higher education institutions .....	204



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

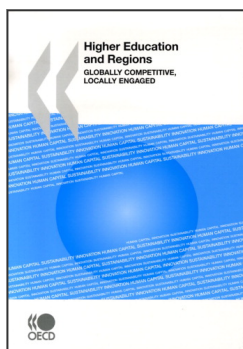
8.4. Higher education regional associations supporting regional development in the North East of England and Öresund region ..	188
8.5. Atlantic Canada Opportunities Agency (ACOA) .....	193
8.6. Examples of strategic co-operation in regions .....	195
8.7. Central government initiatives supporting the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



**From:**  
**Higher Education and Regions**  
Globally Competitive, Locally Engaged

**Access the complete publication at:**  
<https://doi.org/10.1787/9789264034150-en>

**Please cite this chapter as:**

OECD (2007), "Contribution of Higher Education to Social, Cultural and Environmental Development: Overcoming the Barriers", in *Higher Education and Regions: Globally Competitive, Locally Engaged*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264034150-9-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to [rights@oecd.org](mailto:rights@oecd.org). Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at [info@copyright.com](mailto:info@copyright.com) or the Centre français d'exploitation du droit de copie (CFC) at [contact@cfcopies.com](mailto:contact@cfcopies.com).