



Innovative Rural Regions

The role of human capital
and technology



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Key Messages

Innovation: a must for rural regions

Rural areas across OECD and non-OECD countries are going through a period of profound economic, demographic and institutional transformations. Globalisation, decentralisation, migration trends and the emergence of new product and service markets pose new challenges and opportunities to rural areas. These, and other changes, like the growing pressure to cut agricultural subsidies, the end of the conception of rural life as different from urban life and the emerging urban vision of rural areas as a space for consumption (instead of only production) have reshaped the concept and nature of rural regions. In this context, rural areas are re-inventing their role in the global economy and their capacity to innovate is fundamental.

“In the context of globalisation, innovation is a must for all regions, whether rural or not.”
(Angel Gurría, Secretary General, OECD)

Conference participants agreed that policies must adapt and lead this process of innovation. There are at least 4 key areas for public policy to stimulate rural innovation.

First, human capital development is a key driver of rural innovation

The capacity of regions to support learning and innovation processes is a key source of competitive advantages, a multiplier of economic activity, employment and development. Human capital is essential. Investments in human capital can not only foster the creation of innovation but also, and most importantly for rural areas, the assimilation of innovation that is often produced elsewhere. There are urgent policy challenges for policymakers. Conference participants agreed on the overall objective to guarantee minimum standards for rural citizens in terms of access to and quality of education, training and life-long learning.

Given the demographic challenges faced by rural regions, co-ordination between different education institutions is crucial for the establishment of critical mass and the identification of regional strengths, which could be used for talent attraction. Also, in regions with low levels of educational attainment, the presence of multiple institutions with well-coordinated transfer routes and accreditation allows non-traditional students the easiest access to the most appropriate forms of education. Lastly, collaboration between education institutions could facilitate best-practice sharing and development of supportive regional higher education systems to address particular human capital problems.

“The challenge in the rural regions is to favour youngsters’ ongoing enrolment in the education system until they join the labour market and to facilitate their access to middle and higher education and a high level of vocational training and qualifications”
(Jesús G. Rector, Universidad Autónoma de Madrid, Spain)

Conference participants agreed that higher education institutions (HEI) can contribute to improving human capital formation in rural areas in four main ways:

- *By widening access to higher education.* In some countries growth has specifically been linked to addressing regional disparities. In the Nordic countries, for example, a strong emphasis has been laid on equity and expansion, which has aimed to include new groups in higher education and to reduce inequalities in gender, place of residence and socio-economic background. Far more people are now within easy traveling distance of a university, although this does not always mean that rural areas are well-served. In the most sparsely-populated areas, widening access also means changing the way in which courses are delivered, for example through distance learning - whether via traditional correspondence courses or on-line.

- *By improving the relevance of provision.* Access is of little use without relevance. There are two aspects to this: 1) **Improving the balance between labour market supply and demand.** It is a challenge to balance the aspirations of individuals and the needs of the regional economy. Research based measures designed to stimulate the different categories of business innovation must be linked to teaching-based initiatives designed to enhance the regional skills base in its key business sectors. 2) **Improving the relevance of programmes themselves.** Higher education institutions are under pressure to increase regional impact, particularly in ways that generate new income streams. Thus, many higher education institutions design tailor-made short courses for regional businesses and are committed to promote graduate employability and use stakeholders and alumni networks (e.g. HEIs in Nuevo León in **Mexico**) in curriculum development. A good example is *Aalborg University* in northern Jutland, **Denmark** where within the *Project Organised Problem Based Learning* study programmes are organised around interdisciplinary project work to solve problem areas defined in co-operation with firms, organisations and public institutions.
- *By attracting the best talent to the region.* In numerous OECD countries talent attraction of top academics, researchers and highly skilled workers is increasingly replacing inward investment attraction as a key role for rural development agencies. In **Finland**, Nokia invests in the cultural adaptation of foreign IT workers as a way to improve productivity, but also to help to retain this talent. Regional policy makers need to work closely with local higher education institutions to formulate the appropriate package to attract high potential individuals or groups of academics. *Fast Forward* is a post-graduate programme provided by Saxion Universities of Applied Sciences in Twente, **Netherlands**, to retain high potential graduates in the region. Over a two-year programme the *Fast Forward* trainees receive tailored management training and undergo three eight-month work assignments in different local or regional companies and organisations. High potential graduates are matched with organisations which need innovative staff who are able to contribute from day one.
- *By upgrading the skills and competencies of the population through adult education.* Adult learners, who have established links in a specific rural locality, are usually less mobile than younger students. Upgrading their skills will thus have a more direct effect on the region's economic performance. Where local initiatives are insufficient, upgrading the skills should become a strategic objective of national governments. The provision of programmes should be flexible taking advantage, not only of work based learning, but also e-learning and distance learning opportunities in order to take into account non-traditional learners, those who combine work and study, and the needs of the employers. They also need to allow attendance on the basis of non-formal and in-formal learning.

Conference participants agreed that to achieve its potential, higher education needs to be more responsive to local demand. The responsiveness of the system will be enhanced if the appropriate incentives are given. If not, higher education institutions may continue to focus exclusively on urban areas or on the wider national and international scene.

Evidence from **Japan's General Programmes for Regional Revitalisation** allowed the participants to discuss the links between human and social capital. The education challenges of rural areas of fast developing countries were also considered. In the case of **India**, the evolution of grassroots democracy (Panchayati Raj Institutions) has provided an opportunity to develop rural human capital through research, education, and training of elected representatives. The deployment of technology in *Special Economic Zones* has complemented the access of education, allowing elected representatives, officials, trainers and professionals from the public and private sectors to be trained with a multi-disciplinary approach to rural needs.

Lastly, conference participants insisted on the importance not to overlook the role that the so-called “neo-rurals” can play in upgrading human capital in rural regions. Reference was made in particular to the “creative class”, such as architects, artists, engineers, software developers, designers, etc. –see proceedings of OECD 2006 conference– that are more and more keen to move to places that offer a better quality of life. These flows must be facilitated and potential spillovers understood and exploited.

Second, financial services need to be developed to support innovative rural enterprises

Financial institutions play a crucial role in promoting innovation in rural areas. The availability of financial resources can be the critical determinant of whether innovations emerge and are turned into marketable products and services or not.

Evidence from the **United States** Federal Reserve Bank shows that generally, in a risky entrepreneurial environment, equity capital is the preferred source of funding, but in rural areas, debt capital is usually much more prominent in funding innovation. In the US, 35% of rural business start-ups are funded with debts compared with only 20% in urban places. This is explained by higher risks and costs that financial institutions incur when acting in rural areas. The case of **Mexico** illustrates the many deterrents for private financial markets to operate in rural areas. These include: limited presence of financial institution’s branches especially in remote localities; lack of property rights and properly functioning legal system; small size and volume of deals; high default rates and difficulties for recovering credit; small size loans and the high ‘cost’ of information. In this context, financial decision makers who have to base their decision on risk assessment often opt out from rural areas. The leading founders of rural innovation are thus often small rural banks that are in a better position in terms of information that rural lenders have in those areas.

“Why is it easier for a young rural citizen to find credit for his wedding rather than to finance an innovative business initiative?” (Francisco Javier López Iniesta, Regional Minister for Rural Development, Extremadura, Spain)

Development Banks and agencies such as the World Bank or the *Financiera Rural* in Mexico may thus play a crucial role in mitigating the risks and establishing incentives for financial institutions to serve this segment of the market. The **World Bank** alone, out of a total lending of over 20 billion USD, places nearly 5 billion every year in rural areas across 120 developing countries. These institutions play a key role, not only as providers of funds, but also in terms of assisting in the creation of the capacity of rural institutions to use such funds. In the case of new EU members such as **Romania** or **Bulgaria** for instance, technical and administrative training have become a key activity to make sure that large funding streams from the EU can be ‘absorbed’ by regional and local institutions.

How can rural areas face the financial market’s disincentive to operate and promote innovation? Two options in particular have been discussed to foster the availability of funding for rural innovation. *First*, the role of **business networks** that can help build scale and reduce costs, develop information flows and trust mechanisms. *Second*, **business development programmes** that focus on building the entrepreneurs’ skills-set and boost the number of viable rural start-ups. Conference participants highlighted the role that the public sector can play in making sure that both these options are fully developed and exploited in rural areas.

“The key to the development of rural businesses, just like for urban businesses, is innovation, innovation, innovation” (José Antonio García Cantero, CEO, Banesto)

A strong territorial approach of financial institutions is not incompatible with their financial excellence and viability. The experience of the *Cajas de Ahorro* in **Spain** illustrates that strong links with government and non-governmental actors can help financial institutions to adapt to local needs and opportunities and thus have a positive impact on local businesses. Also, reinvesting profit in local projects by Saving Banks often proves to be a fundamental source of funding for

soft and hard infrastructure development. The financial resources redistributed to the society by Spanish Saving Banks in recent years has exceeded support from the European Union.

In **Spain**, BANESPYME shows that a global financial institutions can deliver tailor-made assistance to small and medium sized rural enterprises and enhance their capacity to innovate (Banespyme Innova) and export (Banespyme Exporta). The successful experience of *PlaNet Finance* with micro-credit in rural **Morocco** highlights the need to bring financial services closer to the people, and adapt financial products to local demands. In this aspect, the use of information and communications technology (ICTs) has proven indispensable. Venture capital can also provide great support to the most innovative rural start-ups. In the regions of Extremadura, businesses such as *Cerezas Marcoserrano* and *E-CulturaNet* have flourished thanks to this kind of support.

Third, bridging digital divides and developing ICT use is crucial for the future of rural areas

Technology is bringing unprecedented changes in rural areas. There are four main categories of technologies affecting rural areas, some times positively, some times also negatively: transportation technology, geographical information systems (GIS), computational technology and information and communications technology.

The session's discussion focused on this last category. ICT in particular provides new ways of dealing with disadvantages of remote and peripheral areas. First, it can contribute to reduce costs associated with physical distances. Second, it facilitates access to information. Third, it allows scale economies without proximity. Lastly, it can improve quality of life and services through tele-work, e-education, health services delivered on the web, etc. These factors may also be considered as new indirect advantages for businesses to locate in rural areas.

A first issue to be considered to understand the impact of ICT on rural areas has to do with digital divides from a spatial perspective. Research shows that sparsely populated, and peripheral areas have more difficulty to have access to information technology. High cost of infrastructure deployment leads to weak demand for ICT services, which further increases the cost of infrastructure and discourages rural businesses, which leads again to lower and declining population. Conference participants agreed that the main objective for policy in this field is to break such cycle and make ICT infrastructure available to rural populations. This can be done in different ways depending on different circumstances, including subsidised supply, direct public provision or enhanced private competition.

However, conference participants agreed that **low cost and reliable ICT infrastructure is essential but not sufficient**. Research carried out in the **United States** shows that there are necessary conditions for rural areas to benefit from ICT. These include:

- intelligent use of technology by government (e-government, etc.)
- an institutional framework that encourages inter-firm and public-private cooperation;
- a business structure that promotes entrepreneurship;
- a dynamic tertiary sector providing business services and technology transfer;
- a minimum level of R&D capacities;
- financial instruments conducive to innovation.

Once technology is properly deployed in rural areas, many innovative applications can take place. Conference participants discussed only some of the many examples that are available. After deploying world-class internet highways across the country, the government of **Korea** has implemented, among many innovative initiatives, the AGRIX (Agricultural Integrated Information Excellence System) that allows for great efficiency gains in administrative processes in rural areas.

Other Korean innovative internet-based applications have allowed for new ways to advertise agricultural products or to develop territorial marketing (e-Villages web sites). A 'Cyber-rice'-cultivating-system uses games for e-learning on agriculture technology.

“Community investment can transform digital exclusion into economic inclusion”
(Graham Russell, Director, Business in the Community (BITC), UK)

The experience of **Extremadura** in connecting its 383 municipalities to broad-band internet, linking all public institutions to the Net, and introducing a wide range of programmes on education, technological literacy, productive start or e-health tools, is a great example. Similarly, **Australia's** Rural Transaction Centres (RTC) Programme help establish locally run units that introduce new services or bring back services into rural towns. In **Finland**, telemedicine services allow a specialist doctor in Helsinki to provide diagnosis on X-rays taken in the sparsely populated regions thousands of kilometres away.

In conclusion, conference participants agreed that technology and in particular ICT are essential to both the viability of rural economies and the quality of life of rural citizens. A policy of strategic, place-based investment by national and local governments is thus needed in both 'hard' and 'soft' technology infrastructure.

Fourth, cooperative approaches and institutional innovation need to be further developed

The fourth area for government to support innovation in rural regions has to do with the way government themselves are capable to innovate and adapt to new challenges. Conference participants agreed that, **in the era of globalisation, traditional sectoral approaches to rural development are increasingly inefficient and ineffective.** The challenge for policy-makers is to adopt multifaceted policies for rural regions that go well beyond the use of agricultural subsidies.

There are at least four directions for governments to innovate in their approach to rural development and rural policy: first, adopting a place-based, integrated focus rather than merely sectoral ones. Second, focusing on opportunities and not just on the need to compensate for structural disadvantages of rural areas. Third, placing strong emphasis on investments rather than on equalisation and subsidies. Fourth, revising multi-level governance frameworks from the national to the local level.

“Place-based policy and sectoral policy are not contradictory. We have to work to make them more and more complementary” **(Elena Espinosa Mangana, Minister of Agriculture, Fisheries and Food, Spain)**

Conference participants agreed that governance innovation is key for the future of rural areas. *First*, at the central level, innovating entails finding creative solutions to the question of who should deal with rural policy and how should coordination be ensured across government departments. *Second*, in terms of relations across levels of government, innovation has to do with the capacity to redefine the role of the center in its relations with other levels. This means moving from a logic of command and control to a logic of partnerships. It entails rethinking government transfers to rural areas and in particular setting up effective mechanisms of monitoring and evaluation, as well as reward and sanctions systems. *Third*, locally, governance innovation may involve a new way of defining target areas as functional areas. It may also involve more creative local development strategies designed through highly open and participatory approaches. Lastly, it can be about new ways of supporting partnership creation and development between public, private and non-governmental actors.

“Innovation is also about culture and tradition. Culture and tradition are not just a way of looking at the past but essential instruments to better face the challenges of the future.” **(Gerard Viatte, Former Director of Agriculture, OECD)**

The triple-helix model used in successful rural Kuusamo, **Finland**, provided an example of the efforts made towards increased co-operation and co-ordination between the public, private and education sectors. This strategy has also focused on the importance of sharing experiences with other areas and policy-makers at the national and international level. In **Spain** the REDEX (Red Extremeña de Desarrollo Rural) has shown how networks can be established to successfully facilitate knowledge sharing of the diffusion of good practices. The case of **Mexico** brought to the discussion the need to look into creative legal frameworks to foster cross-departmental cooperation at the Federal level and with sub-national actors. The *Ley de Desarrollo Rural Sustentable* and the new budget mechanism of the PEC (*Programa Especial Concurrente*) represent great innovations in terms of the government's capacity to implement an integrated strategy for rural development and to monitor public expenditure in rural areas.

"Innovation is also about making mistakes and learning from that."

(Margaret Clark, Chairman OECD Working Party on Policies for Rural Areas)

The case of **France** with the recently launched Rural Competitiveness Poles provided an example of innovative governance platforms that bet on strong public-private partnerships to identify and exploit local competitive advantages in more than 300 French rural communities. The experience from the **United Kingdom** has shown that urban-rural differences have been shrinking with the expansion of urban poles. This calls for innovative policy responses to deal with new migration and mobility trends as well as the challenges of service delivery in areas with strong immigration of elder population. In this respect, conference participants agreed on the urgent need for more coordination of rural and urban development policies. The **Dutch** approach to decentralising responsibilities for rural development to provinces was presented as an important step in the direction of better tailoring policy to local circumstances. Finally, the example of **Canada's** "rural lens" shows how rural priorities can be taken into account in government policy across ministries. In particular, the case of Quebec (**Canada**) showed a paradigm shift in rural policy implemented via a highly participative process that will involve rural communities in identifying and pursuing development opportunities within a long-term (7 years) integrated strategy.

Participants also discussed the opportunities for engaging the private sector into responsible practices and an active role in rural development. Presentations from the **United Kingdom** and **Spain** highlighted that companies are increasingly recognising that there is great potential for responsible marketplace behaviour to generate positive results for businesses. Many business leaders start to value that taking on a positive role in their community doesn't inhibit their growth but underpins it. Thus, leaders become important partners for the public actors who wish to engage into more open, innovative governance. In this perspective, governments should not just focus on the 'fiscal contributions' but rather on the wider role that businesses can play in their rural community.

Summing Up

Innovative policies can make a huge difference in order for globalisation to be a positive-sum game for both rural and urban regions. Nevertheless, reality shows a fragile equilibrium in rural areas that can only be defended if *innovation* is well integrated with *tradition* and local identity. Conference participants have looked at rural innovation from various angles: innovation as a change in policy, strategies and approaches; innovation in terms of new products and services, innovation in terms of use of technology, and innovation as "new ways of doing traditional things". In all these cases, innovation is about rural people. It is about how to overhaul the capacity of rural citizens to adapt to changing conditions, to face new challenges and to exploit new opportunities.

"We know the theory of innovation. We know there are opportunities for change in rural policy: are we now ready to put all this into practice?" (Richard Wakeford, Head of Environment and Rural Affairs, Scottish Executive, UK.)

Evidence presented during this conference shows that a place-based approach is essential to understand the different facets of innovation in different regions. It is essential also for businesses and government to take the right decisions and to implement them in a strategic, joined-up manner. Knowledge and information are key element. Public-private partnerships, along with the development of a co-operation culture between different levels of government and the different rural stakeholders are a must. Innovative rural regions rest on well developed human capital, effective use of technology, a dynamic financial sector and a public policy that is adapted to the new profile of rural areas.

Conference participants agreed that a different, innovative, less defensive way of fostering rural development is possible. The challenge for the future is to start moving away from the comfort of consent on the OECD “New Rural Paradigm” and start implementing the tools to make that change happen.

“An innovative vision for the future of rural areas should encompass the implementation of more integrated policies that can promote diversification and bring together social and economic goals” (H.R.H. Felipe de Borbón y Grecia, Prince of Asturias)

The 2007 OECD Rural Policy Conference took place in Cáceres (Extremadura), Spain. This event was co-organised by the OECD and the Extremadura Regional Government and was the fifth of a series of international conferences that started in Siena, Italy (2002), followed by Warrenton, US (2004); Oaxaca, Mexico (2005) and Edinburgh, Scotland (2006). More than 300 senior policy officials and experts from over 20 member countries, along with delegations from several developing countries participated in the conference. The event consisted of six plenary sessions:

- *Innovative rural regions: an exception or a must?*
- *Development and attraction of human capital in rural areas*
- *Financing rural innovation*
- *Enhancing rural business competitiveness through technology: best practices*
- *Institutional and technological innovation: evidence from the public sector*
- *Innovative rural regions: lessons learned*

All presentations and this report can be downloaded from the OECD website:

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Speakers

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Kwang-Wook An (Korea)	Jesús González Regidor (Spain)	Antonio Ruiz García (Mexico)
Theo Augustin (Germany)	Angel Gurría (OECD)	Graham Russell (UK)
Fernando Ballesteros Díaz (Spain)	Timo Halonen (Finland)	Jose Maria Saponi Mendo (Spain)
Alan Barkema (US)	Tom Johnson (US)	Robert Sauvé (Canada)
Diana Brittan (UK)	Didier Krumm (Morocco)	Guido Tampieri (Italy)
Atty Bruins (Netherlands)	Roque Lage Gallé (Spain)	Masahiko Tanoi (Japan)
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