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Peer Learning among Regions in Industrial Transition

Workshop Report: Cohort 1

This Workshop Report is open to participating regions for written comment in track changes until Friday 30 November, 2018

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Summary

1. As part of a larger pilot action that supports regions in industrial transition to develop or redesign their smart specialisation strategies, the European Commission and the OECD organised a series of five different Peer Learning Workshops. The workshops were held twice, with different sets of participating regions. Workshops were held between March and October 2018, and supported regions in identifying gaps in their current approaches and building on the most recent analysis of current and future challenges associated with industrial transition. The five topics covered in the workshops were: *i)* Preparing for Jobs of the Future; *ii)* Broadening Innovation and Innovation Diffusion; *iii)* Preparing for the Low-Carbon Energy Transition; *iv)* Promoting Entrepreneurship and Mobilising the Private Sector; *v)* Inclusive Growth. Ten regions plus two countries participated in the project. The experiences highlighted in this report correspond to Cohort 1 regions, specifically: Hauts-de-France (France), North Middle Sweden (Sweden), Piemonte (Italy), Saxony (Germany), Wallonia (Belgium), and Slovenia.

2. A number of common themes arose from these workshops, encompassing challenges and areas to strengthen in order to increase the possibilities of a successful transition. Challenges included limited levels of innovation among SMEs, a persistent skills gap, and problems ensuring actor financing (e.g. for start-ups, for R&D initiatives, etc.). While never explicitly evoked, (multi-level) governance formed a large part of the discussions, particularly with respect to the coordination of internal (government) and external stakeholders, the importance of an enabling environment (e.g. supportive regulator and administrative frameworks), the value (and dearth) of effective performance measurement systems, and how stakeholder engagement contributes to successful programming. The cohort also recognised a need to balance what they can influence and what they cannot, for example culture and tradition, the political dimension and the impact of election cycles, as well as European and national level frameworks and policy objectives. Despite this, the strong regional dimension and role that regional governments can and should play for successful industrial transition was readily apparent in all workshops.

3. This report follows the structure of the seminar series, dedicating a chapter to each theme. In all cases, an overview of OECD research and findings is provided, incorporating examples of how these findings are reflected in the participants' own experiences. Each chapter includes highlights of practices shared by different regions and country, and concludes with a set of potential policy levers emanating from the workshop on the topic that participants may wish to consider as they develop their smart specialisation strategies. An abbreviated set of these policy levers is presented below (Table 0.1), showcasing those that were either most often used, which appear to be most successful, or that hold significant promise moving forward.

Table 0.1. Highlights of policy responses for each Workshop theme

Workshop theme	Policy challenges	Objective (Strategic/Policy)	Possible policy response	Potential implementation mechanism	Rationale/additional benefits
Preparing for jobs of the future	Limited capacity of smaller and older firms to adopt new technologies and to adapt to a changing employment environment	Ensure job opportunities across larger/newer and smaller/older firms	Support firms (especially older firms and SMEs) with specific R&D, technology adoption, and internationalisation	Financing programmes for ICT investment, innovative business models, management training, partnership programs between SMEs and universities/research centres	Increases regional productivity
	Intra- and inter-regional disparities in adapting to a changing employment environment	Ensure job opportunities across territories	Encourage knowledge exchange and cooperation through industry clusters and collaboration/network platforms	Cluster policies, partnerships between strategic and disadvantaged regions, public-private partnerships	Cross-industry innovation
Broadening innovation and innovation diffusion	Intra- and inter-regional territorial disparities in innovation capacity	More even diffusion of innovation across territories	Encourage knowledge exchange through innovation clusters and collaboration/network platforms	Regional-level cluster policies and/or cluster collaboration schemes; create open innovation systems	Increase in productivity
	Limited innovation capacity for smaller firms	More even diffusion of innovation across larger and smaller firms	Support smaller firms with R&D and non-technological innovation activity and entrepreneurial activity	Financial mechanisms for smaller firms such as grants, tax incentives for innovative product-driven activity, facilitated loans, incubation and accelerator programmes	Creates an attractive innovation eco-system
Preparing for the low carbon transition	Address the short-term costs of a transition to a low-carbon economy (e.g. inequalities, unemployment)	Ensure a fair and inclusive low-carbon transition	Support communities and assets put at risk by a low-carbon transition	Forecasts, monitoring and evaluation systems, and/or impact assessments	Mitigate social and economic risks; Builds evidence bases and informs long-term policy
	Balance the long-term strategic dimensions of a low-carbon transition with short-term action	Reconcile a long-term low-carbon transition with short-term priorities	Support existing low-carbon initiatives and firms (to fulfil their potential as international competitive players)	Financial and strategic support schemes	Strengthens the existing innovative eco-system, and internationalises companies
Promoting entrepreneurship and mobilising the private sector	Limited access to finance of start ups and scale ups	Support entrepreneurs to secure financing	Facilitate access to credit mechanisms for start ups and scale ups	Business angel networks, microfinance projects, crowd funding, public-private venture capital funds, equity financing, co-investment funds, interest-free loans	Creates an attractive innovation eco-system
	Limited access to skills, knowledge and networks of start ups and scale ups	Support entrepreneurs with business development throughout the entrepreneurial process	Attract and retain highly skilled workers	High-level positions financing programmes, employee benefits, intellectual property	Greater job-related well-being and satisfaction
Inclusive growth	Disparities between urban and rural areas	Use spatial linkages to enhance productivity and reduce territorial disparities	Improve accessibility through investment in infrastructure	Road networks, new stops on high-speed or other rail routes	Extends the benefits of agglomeration economies/increases GDP
	Ensure inclusiveness policy and programming coherence among different levels of government	Incorporate inclusiveness and/or well-being into regional development strategies/policies or objectives	Coordinate and engage relevant stakeholders in common development and investment plans (government, private sector, universities, NGOs, civil society)	Multi-level partnerships, political coordination committees, local working groups, collaborative open networks/platforms/agencies,	Fosters stakeholder engagement

Note: All policy response tables in the report are based exclusively on the information directly provided by the regions/country, during the innovation workshop and in corresponding PowerPoint presentations. The different categories (i.e. the policy challenges, objectives, policy responses, implementation mechanisms and additional benefits/rationale) were collected systematically when they were mentioned in the workshops or related documents, or when the description of a certain process/mechanism mentioned in the workshops or related documents corresponded precisely to an identified category. This process was applied to all the collected data.

Chapter 1 Preparing for Jobs of the Future

4. Rapidly evolving technologies can disrupt the structure and nature of work, posing potential challenges but also bringing opportunities. Technologies, like the mobile internet, cloud-computing, 3D printing, and others help firms gain market access regardless of geography, facilitate lifelong learning for individuals through online skills upgrading, and help make individuals and firms more efficient, boosting regional productivity. Seizing these opportunities is paramount if industrial transition regions want to boost growth and productivity. This is not always easy however, as the economic, political, and cultural contexts can be resistant to change. Workers may not have the necessary skills to meet rapidly evolving employment or employer demands; and firms may have limited capacity to adopt new technologies. The inherent unpredictability of technological advances on sectors, firms, and people can render the timing and targeting of policy interventions particularly tricky.

5. Ultimately, regional policy makers must consider a supply and demand dynamic with respect jobs of the future. Their policy interventions must help ensure that *i*) employers have job opportunities available and *ii*) that workers have the appropriate skills needed to fill those jobs. Addressing this dynamic through regional-level policies and initiatives, for example to reinforce social systems and encourage business creation, will help industrial transition regions better manage the disruptive changes.

6. This chapter presents recent OECD insights into how the labour market is adjusting to a new technological and industrial environment, particularly with respect to job creation and skill supply. It highlights strategies, mechanisms and tools currently employed by the cohort, and presents a set of possible policy responses that can support regions in industrial transition mitigate negative impact and reinforce benefits.

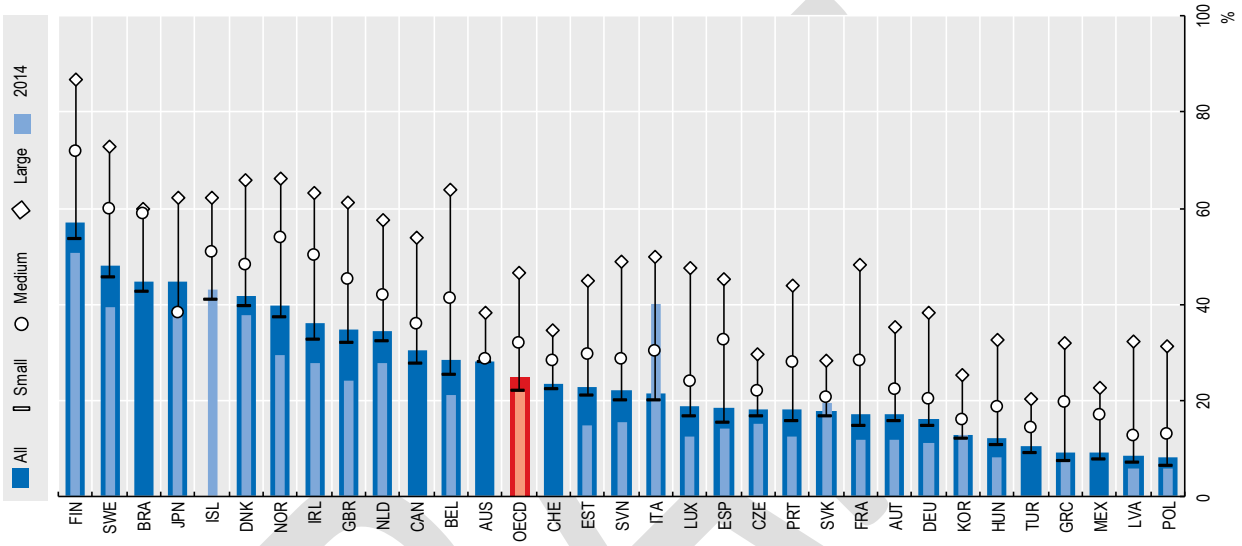
OECD insights on jobs and skills and the experience of Cohort 1 regions

7. Globalisation, an ageing population, and technological advances are fundamentally altering labour markets across the OECD. This is coupled with a “production revolution”, which is transforming how firms, workers, and jobs operate and interact with each other. The production revolution is driven by emerging technological trends, including developments in advanced materials, biotechnology, energy alternatives, and environmentally-focused innovations, such as marine and tidal power technology. The potential applications and benefits of these new technological advances are large, ranging from smart manufacturing and services to smart cities and smart government. They are not, however, guaranteed. Benefiting from these advances requires good policies and an enabling environment, including quality digital infrastructure and the investments supporting it, effective regulatory frameworks in areas such as data privacy, liability, and standards, and cooperative research frameworks to create the necessary scale for advancing the science (OECD, 2018a).

Targeting support to firms

8. SMEs in industrial transition regions can have trouble keeping up with technological advances. Several factors may account for this, including firm size and firm age. OECD findings indicate that technological up-take (as measured by cloud-computing) is stronger among larger firms than among SMEs (Figure 1.1). Newer firms are also more likely to implement new technology and innovations than older ones. For the industrial transition regions in this cohort, these are particularly critical findings.

Figure 1.1. Enterprises using cloud computing services, by size (2016)



Source: OECD (2017), *OECD Science, Technology and Industry Scoreboard 2017: The digital transformation*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264268821-en
Stats link: http://dx.doi.org/10.1787/888933619638

9. The enterprise base within the cohort is dominated by SMEs, many – or most – of which have demonstrated a limited capacity to adapt to a changing industrial and employment environment, something often attributed to low innovation and technology take-up capacity (OECD, 2018c). A number of factors may drive this, including low levels of R&D, a focus on serving the region's leading industry, and minimal incentive to change traditional methods of working (OECD, 2018c). Low SME capacity in R&D and technology adoption was cited as a key challenge by Cohort 1, and the mechanisms to address this appear limited. Saxony and Wallonia provide specific support in this area. In Saxony, training programmes for firms are offered, and in Wallonia, a digital innovation hub has been developed to assist SMEs undergo a digital transition. Both regions have projects supporting digital adoption in universities and schools and equipping public actors with knowledge around cyber security. Overall, however, regions may need to ensure that a larger proportion of SMEs are sufficiently advanced technologically to capture the benefits of the production revolution.

10. There are also business capability challenges, for example, with respect to strategy design, business intelligence, and innovation management. This can be exacerbated by a funds mismatch when governments emphasise funding for building innovation and R&D capacity among SMEs, with limited attention placed on supporting innovation and R&D in

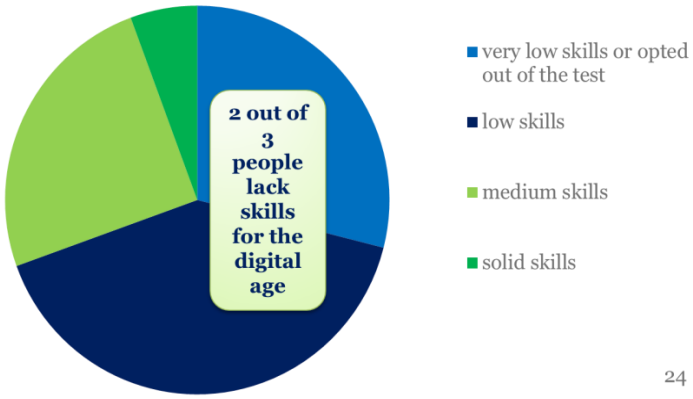
traditional companies. This issue links back to regional – and often national – priorities in terms of industrial profiles and development.

11. In light of these findings, policy responses should be targeted to firm type. For new firms, responses will have to encourage business development and innovation. For old firms, policies should support adoption and adaptation processes. For example, investment in ICT, innovative business models, and management training can help old (and new) firms adopt new technologies.

Advancing and updating labour force education and skills

12. Education levels also contribute to the difficulty in keeping up with the employment demands of technological advances. Compared to more traditional forms of employment, technology-rich employment requires higher levels of literacy, numeracy, and problem-solving capabilities among workers. Currently, two-thirds of adults are unsuitably skilled to participate in technology-rich environments (Figure 1.2). For workers without a tertiary education this changing environment lead to greater difficulty in finding employment, given a higher demand for workers with technical expertise (OECD, 2018f). All regions in this cohort, except Saxony, have a labour force with lower than national-average levels of tertiary education[1] (OECD, 2018d). Keeping up with the need to upgrade skills is critical for managing potentially large inter- and intra-regional disparities in education, and ultimately income.

Figure 1.2. Adult preparedness for the digital age



Source: OECD Survey of Adult Skills, 2015

13. The regions in this cohort expressed no doubt that education, and higher education, are of utmost importance when it comes to jobs of the future. The challenge they face, however, is finding answers to such questions as: education in which areas or fields? Should universities focus predominantly on the demands of local employers? How does R&D and innovation fit into the picture? Should regional governments play a stronger role skills training, for example in leadership and entrepreneurship?

14. Some regions are grappling with a need to balance the place of tertiary education in the local industrial system versus the international research system (OECD, 2018d). In other words, to what degree do universities have a responsibility for meeting local skill

[1] Slovenia is not considered here as it is participating as a country rather than a region. However, it registers below average when comparing EU countries.

demands, versus taking a broader perspective with a stronger research emphasis? This is a tricky question, as both have their advantages and disadvantages. However, these approaches need not be mutually exclusive. There are some higher education systems, for example in the US, were research-driven, "world class" universities co-exist with regional (state) universities as well as "community colleges" (OECD, 2018d). This latter category offers pre-tertiary (but post-secondary) education as well as occupational (VET) training. As their student body is local and tends to remain local, they are better placed to focus on some of the skills required by local employers.

15. Regions are also looking for ways to build stronger links between academia and industrial partners, as doing so can help reduce the skills gap in a very targeted way. Piemonte, for example, is encouraging university research teams to build their interaction with SMEs by helping make university-owned infrastructure available to industry, and by using a voucher system to help industry implement small projects that improve researcher/industry interaction (Piemonte, 2018). Piemonte also supports incubators within universities to build such links, and is actively promoting apprenticeships that can create stronger ties between academia and business (Box 1.1).

Box 1.1. Apprenticeships for higher education and research

Piemonte's "Apprenticeship for Higher Education and Research" is a pilot project dedicated to helping apprentices obtain tertiary level diplomas (technical or academic) or doctorate degrees. It brings together companies and universities/institutes to provide training focused on the labour skills required by the firms. Through the programme, apprentices gain specialised and rapidly employable competencies. At the end of the apprenticeship, the company can confirm whether the apprentice receives a job contract.

The initiative has been well received by participating companies, and as of March 2018 350 apprentices had received employment contracts. The programme also aims to increase innovation processes and technology transfers by supporting the placement of young researchers and highly specialized professionals in regional firms. Initially established for large firms, Piemonte intends to incorporate SMEs into the programme as well

Source: Piemonte (2018, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template, *Apprenticeship for Higher Education and Research*. Prepared for the Peer Learning in Industrial Transition Regions Workshop: *Preparing Jobs of the Future*, 8-9 March, 2018, Brussels, Belgium.

16. There is also a multi-level governance dimension to addressing education and skills gaps. Very often, regions do not have much margin for manoeuvre with education or training policy as changes in the educational system are national-level competences. Thus, effective multi-level governance practices and frameworks are needed for regional and national governments to work together, including to identify, implement and support effective regionally-led interventions.

17. Technological changes also lead to reorganising how people work and engage with firms, as firms increasingly move to employ external support for tasks previously done in-house (OECD, 2018c). The result of this is an increase in "alternative" work arrangements between firms and workers at the expense of "traditional" employment positions (Eurofund, 2015). Alternative work arrangements have some advantages, like flexibility and relatively high levels of freedom, but can also be uncertain, unstable and unprotected (OECD, 2018c). In general, all regions reflected on the importance of protecting workers during a period of

industrial transition, though in-depth discussion was limited (OECD, 2018d). Saxony offers an example of steps taken to ensure workers are adequately protected during periods of change or instability (Box 1.2). Establishing social protection measures that can help smooth the transition to these "alternative" arrangements is important. Yet, setting social protection measures are often not a responsibility of regional government, which may explain the general lack of discussion regarding the topic.

Box 1.2. The "Decent work for Saxony" Programme

Saxony's "Decent Work for Saxony" programme aims to promote better jobs with attractive pay and working conditions in the region, as well as to boost collective bargaining capabilities. The programme offers training and skills upgrading, and supports reinforced health and safety regulations. It offers firms bonus funding for those enterprises with a union presence. Overall, the programme provides a comprehensive strategy to help protect workers right while also acquiring skills needed for technologically driven changes in the economy.

Source: Sachen Freistaat (2018, unpublished), "Sachen", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: *Preparing Jobs of the Future*, 8-9 March, 2018, Brussels, Belgium

Meeting the challenge of automation

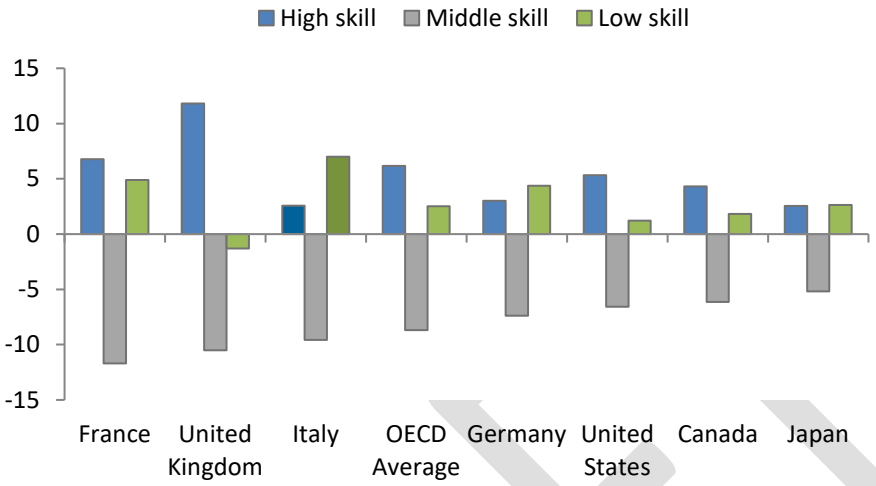
18. Providing firms with the tools necessary to harness digitisation and automation technologies – cornerstones of the production revolution – can contribute to encouraging innovation, new products, and job creation, all of which have net benefits for regional growth and productivity. At the same time, automation can lead to a loss of jobs: about 32% of jobs in OECD countries[2] face a 50%-70% probability of automation (Nedelkoska and Quintini, 2018). However, job destruction due to automation and artificial intelligence may not be as large as expected. It can depend on job families and the skill levels required, and it is unlikely that a job or job category will be altogether eliminated (Nedelkoska and Quintini, 2018). This said, jobs across the skill spectrum should expect some degree of automation.

19. Labour market polarisation resulting from differences in an automation risk profile may be a more significant policy challenge than the increased automation. Such polarisation can widen gaps in productivity, jobs and skills, put pressure on the quality of jobs available and ultimately exacerbate inequalities (OECD, 2018b). There is evidence of such polarisation between highly-paid, higher skilled occupations that require professional training and/or tertiary education, and the occupations requiring lower-level skill sets, especially middle-level skills. Such positions not only tend to demand less skill, they also pay less, and are frequently occupied by youth. They are jobs that involve routine – or repetitive – tasks, and require basic to low levels of education (OECD, 2018c). Demand has increased for individuals with transversal skills such as making sense of new unstructured information, negotiating and striking deals, or caring for others (OECD, 2018f). What these tasks have in common is that they do not follow a precise set of rules, and are therefore more difficult to articulate and codify, thus they are more difficult for a computer to execute. Because these tasks tend to be associated with either high-skilled or low-skilled occupations, automation is said to lead to a so-called hollowing-out of middle-skilled jobs (Figure 1.3) (Autor, 2015; Brynjolfsson and McAfee, 2014; OECD, 2016). The result is a decline in the

[2] Specifically those participating in PIAAC.

number of jobs available to those with medium skill levels, while quite often employment shares rise for jobs requiring high and low skills.

Figure 1.3. Labour market polarisation in selected OECD countries, 1995-2015



Source: OECD (2018c–unpublished), "The Future of Work: A Place-based Perspective", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Preparing for Jobs of the *Future*, presented by Sylvain Giguere, 8-9 March, 2018, Brussels, Belgium

20. From a policy perspective, this makes industry and skills mapping a particularly valuable exercise, particularly when the results can be overlaid to identify matches and mismatches. While time consuming and intricate, an exercise of this type can help regions identify which skills are in short supply or face limited demand, and then provide stronger evidence for strategic policy and decision-making. An exercise of this type was undertaken in North Middle Sweden within one of its key enterprises (OECD, 2018d). In Wallonia, the Public Employment Service is undergoing an extensive exercise to identify skills needed in specific business sectors (Box 1.3).

Box 1.3. Wallonia: Industry and skills mapping by the Public Employment Service

Wallonia's Public Employment Service (PES) is undertaking a prospective analysis – the *Le Forem* Study – to identify the skills needed by specific sectors. The objective of the exercise is to develop appropriate training offerings for the Wallonia's competitive and business clusters, and to communicate the identified skill needs to relevant audiences. The analysis first takes a sectoral perspective, using as a basis the sectors associated with *Domaine d'Action Stratégique* that focuses on eight domains, in order to identify future occupations and associated skills. It then identifies a set of related or secondary skills that could subsequently arise from on developing the first set of sectors. The approach is based on a five step qualitative process:

1. Reports by sector are produced by the analysts from the PES, based on OSINT (open source intelligence) documents

2. A panel of experts, interviewed individually, is asked a set of questions that are then included in the sector reports. The objective is to check the sectorial trends and particularly to detect the effects that these trends may have on occupations.
3. New reports are then produced and disseminated.
4. The Abilitic2Perform method is used to identify the skills required for each occupation or skills group. Four expert workshops, organised by occupation, identify the key evolution factors and the potential evolution scenarios. They then select the most likely (or desired) scenario, identifying also the associated skills needs.
5. These training engineering elements are given to the training department in order to start designing appropriate training programmes. They are also disseminated through the web and sent to the education authorities.

The sectors and associated industries value the programme since they themselves do not have the capacity or resources to undertake such an extensive study.

Source: Wallonia (2018a, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template, *Le Forem, the Public Employment Service.* Prepared for the Peer Learning in Industrial Transition Regions Workshop: *Preparing Jobs of the Future*, 8-9 March, 2018, Brussels, Belgium

21. Other ways to mitigate the risk of labour polarisation and the impact of automation include ensuring that workers receive technical training, that opportunities for skills development are constantly offered, and that the use of new skills is consistently supported (OECD, 2018f). Improving worker skills has an additional benefit – it can yield gains in aggregate productivity, from about 3% in the US to about 10% in Italy (OECD, 2018f). Making the most of the productive benefits associated with skills upgrading can require re-thinking how employment services and skills development programmes are designed and delivered, and encouraging firms to offer and support skills training and use. In this way, regional governments can help reduce the possibility of job loss while increasing innovation and the productivity of their entire firm eco-system – a win/win for regions in industrial transition

22. Specifically with respect to the five regions in Cohort 1, evidence regarding the risk of automation paints a mixed picture. In some regions, such as in North Middle Sweden, occupations at high risk of automation are declining, and there is an increase in jobs among health and teaching professions, which call for skills that are less able to be automated. Meanwhile, in Pas-de-Calais (as a proxy for Hauts-de-France) there is a rise in employment within job categories that are at high risk of automation (OECD, 2018b). The types of jobs created and the skills they draw upon are important for a region given the medium and long-term consequences on the labour market. This makes training and upskilling critical, together with ensuring the resources for such activities. In addition, policies aiming to support the labour market in the face of industrial transition should be sufficiently flexible or adaptable to specific regional contexts since the challenges faced may be very different.

Key themes in preparing for jobs of the future: opportunities, skills and financing

23. To prepare for jobs of the future regional governments and stakeholders in industrial transition have three critical tasks: *i)* to ensure that there are job opportunities for workers to fill; *ii)* to ensure that workers have the appropriate skills to successfully fill those

opportunities; *iii)* to ensure adequate and appropriate financing mechanisms to realise policy and programming objectives.

Creating job opportunities

24. Higher than average levels of unemployment is a challenge for the regions in this cohort. This is driven by the changing industrial profile of the regions and is compounded by generally lower than national average levels of tertiary education attainment (except in Saxony), as well as difficulty ensuring a labour force with the demanded skill set. Youth unemployment is also a worry for almost all if not all participating regions (OECD, 2018d). Key contributing factors is the skills level at which youth unemployment is concentrated – generally lower skilled and lower paid – as well as a skills mismatch. One worry generated by youth unemployment is its potential to become structural, particularly if the types of jobs that tend to be filled by lower-skilled youth become more limited within a region.

25. Taking stock of labour force demographics can also be important. Women and migrants may be an underutilised workforce and engaging them could help boost productivity. In addition, ensuring that the region is an attractive place to live and work is fundamental, as it can help retain human capital, and attract firms. If not seriously considered it can contribute to intra-regional disparities with respect to employment opportunities – in terms of job number and job type – as population and productivity rates decline in smaller cities and/or rural areas. For example, in Hauts-de France, those areas which are close to Lille in the north, and close to Paris in the south[3] are growing more rapidly and offer more opportunity than in the rest of the region, which continues to risk depopulation. Saxony sees the same phenomenon, where larger towns and the areas surrounding them are well developed, which is not the case in rural areas where there are problems with unemployment, income levels, and health outcomes. The dynamic in Piemonte is similar to that of France with a pull toward Torino, but also along the region's eastern border, toward Milan (OECD, 2018d).

26. A region's capacity to create jobs, ensure a sustainable and sufficiently diverse job market, and design and/or implement the necessary policies (national, regional or a combination of both) to support creating employment is one of the most critical components in the conversation regarding jobs of the future. There is no single way to create jobs, and "new companies" are often spin-offs from larger ones, keeping the field rather narrow. Given the role that industry sectors play in the potential for automation and the demand for skill level, it may be increasingly important for regions to consider sectors on an individual basis, identifying those where jobs are currently available and those where, strategically, the region would like to increase productive opportunities. This may need careful consideration in terms of job category, and the level of skills required (high, medium or low).

SMEs and start-ups as future employers

27. SMEs are significant industry players in this cohort, and are very often anchored by larger national or multi-national firms. Their job-demand (beyond a need for specific skill sets) may be linked to global value chains, to an enabling investment and regulatory environment, or to the level of ambition of the leadership. Product or service diversification can be helpful for creating jobs, as additional knowledge or skills may be needed to develop and bring new products to market, etc. It can also have spill over effects to other, supporting industries. Alternatively, a move can be made to increase the number of firms. Often these

[3] The southern border of Hauts-de-France extends to the Ile-de-France region.

are "spin-offs" from larger, existing firms, and may not necessarily have a significant impact on the number of jobs available. They may become an SME that links back to the "mother firm" as a contractor (OECD, 2018d).

28. This leads to a question regarding the role of start-ups. As a category, start-ups have lower capital investment and human resource needs than SMEs, making them relatively easy to launch. Yet, while they can strongly contribute to an innovative environment, they may take a significant amount of effort and time to grow. Their location can be a growth generator or inhibitor, as well. For example, North Middle Sweden's experience is that start-ups in Stockholm grow faster than those in the region. In addition, their human resource needs are more limited, thereby limiting their overall contribution to the job market, despite some spill over effects to ancillary industry or service providers. A successful start-up, one that moves past its inception stage, brings products to market, and sustains a positive growth trajectory could, with time, generate more job opportunities. Developing policies that encourage investment in start-ups is an option to help take advantage of the innovation that start-ups might represent and strengthen their job generating possibility.

Cluster policies can contribute to job creation

29. Cluster policies are a popular policy mechanism with the regions in this cohort, and can represent significant sources of employment. For example, Piemonte's seven clusters translate into 10 000 jobs (spread across 1 500 companies). In North Middle Sweden, within the paper and pulp cluster, 100 member companies create 7 000 jobs. This does not consider the broader workforce connected with the industry4, comprising about 30% of the total workforce. It should be noted, however, that clusters do not create jobs overnight.

30. Given the power of clusters, regions actively foster cluster initiatives in a number of ways. North-Middle Sweden established programmes for cluster managers, and Piemonte has adjusted its policy approach to emphasise innovation clusters rather than industrial clusters. Wallonia has used clusters to help build bottom-up SME networks and engagement as a complement to more top-down policy approach (OECD, 2018d).

Addressing the skills challenge

31. Ensuring that the labour force has the necessary skills to adapt to industrial change is a concern in all regions, though specificities can vary. For example, in some cases a skill mismatch or a skills gap is a significant challenge, while in others the difficulties are linked to a low skill base. Understanding the skills needed in a region is important, and as previously mentioned a skills map could help. These may be resource intensive, particularly if done at an individual firm level, but can also help paint a clearer picture as to the skills that are available and the skills that are necessary, highlighting mismatches and helping target training or reskilling programmes.

32. There is no single "skills solution" as every region has a different skills profile. However, there are several areas that regional and national governments can consider addressing to better adapt employment and skill systems to the future of work.

Supplying the skills needed by the local economy

33. One challenge facing skills systems is ensuring the ability to rapidly and effectively respond to the changing world of work. The new, technology-rich world requires a different

[4] Workers whose jobs are associated with or feed into the industry but who are not directly employed by it.

set of problem solving skills, both cognitive and IT, than in the past, and a large percentage of the working age population may not have skills adapted to this need. For example, across the OECD, 60% of the working age population has poor ICT skills. This translates into a workforce that is not likely to fare well as labour market needs change and the divide between high and low skilled workers increases (OECD, 2018c). It also can hold the economy back, as employers are not finding workers with the skills they need and can drag productivity.

34. Perhaps the most evident way to address this mismatch is by increasing the responsiveness of education systems. In Hauts-de-France there has been substantial funding to help universities and secondary schools offer the training necessary to prepare for a new employment context. For example, the University of Lille dedicating EUR 11 million to help provide life-long learning opportunities. Teaching and nurturing entrepreneurial skills from a young age is also on regional agendas, with Hauts-de-France and Wallonia introducing programmes to this effect. In Hauts-de-France, schools help students hone their entrepreneurial skills by encouraging them to build companies. This can serve a dual purpose. On the one hand, it equips students with skills useful in today's start-up culture. On the other, it supports firm creation, a central challenge among participating regions. Potentially it could also have some incidence on youth unemployment. Initiatives targeting VET programmes are also a popular mechanism among the participating regions, especially to better ensure that VET offerings can successfully bridge the gap between skills needed by firms and skills provided by (potential) workers.

35. While regional governments often have limited authority in the education sector, they can ensure greater local level flexibility with respect to programming. One way to do so is by encouraging greater coordination between regional/local economic development policies and skills and employment practices. Greater flexibility can also be introduced into the system through budget lines, eligibility criteria for programming, programme targets that are negotiated between the national and subnational levels of government, etc. This flexibility supports a "bottom up" response that can advance local needs in a national-level policy area.

Upgrading the skills of low- and middle-skilled workers

36. In an ideal situation, low and middle skilled workers move up the skill ladder so that skill mismatches are addressed and people can progress and earn more. It appears counter intuitive to call for an increase in middle-level skills as evidence shows that opportunities this skill set are declining. However, the risk of not increasing such skills – and jobs that demand the skills – is that workers with medium-level skills will compete with low-skilled workers for the same jobs (OECD, 2018f). This will effectively crowd out the market for low-skilled workers and could depress salaries.

37. Tools to address skills upgrading include apprenticeships and training courses. These can be useful and benefit for all parties, yet, they tend to have limitations as students often apprentice in larger firms. This can result from to the programme design, the interest of the apprentices, and the capacity of SMEs to absorb and appropriately utilise apprentices. Ensuring that the education and apprenticeship systems align with local labour market needs is fundamental, and helping SMEs increase their participation in skills development programmes can be helpful. Consideration may need to be given to techniques that make apprenticeships in SMEs appropriate for firms and students. Such incentives can be financial for the firm, and pedagogical for the student (i.e. a requirement of the technical or professional curriculum). Training programmes also need to be flexible (e.g. modular

learning, part time, e-learning, etc.) in order to make it easier for workers to participate. Ireland's Skillsnet programme is a good example of how a government can support businesses identify needed skills and then ensure that there is a workforce adequately trained to meet these (Box 1.4). Another approach is seen in Wallonia, where its 25 *Centres de Competences* emphasise training and skills development across the labour force spectrum – from students, workers, and the unemployed, to teachers and CEOs.

Box 4. The Skillnets Programme in Ireland

Established in 1999, Ireland's Skillnets programme actively supports and works with businesses to identify and address their skills needs, and works with unemployed workers to train and upskill workers. The programme funds 65 training networks, supporting over 14 000 companies and 50 000 trainees. Member companies determine their training needs and how and where the training is offered. Programmes are optimised to suit the needs of already employed learners through formal and informal learning that ranges from further education to higher education provision. The Skillsnet networks support enterprise networking and offer businesses a flexible, agile way to respond to changing skill demands. They help companies achieve economies of scale and greater efficiency in the provision of staff training. Programmes include the Finuas Networks Programme, targeting the international financial services sector, the Future Skills Needs Programme, which designs innovative training to address future skill needs; a workplace activation initiative to help job-seekers obtain employment, and a programme for management development which supports SME owner-managers. Skillnets is funded through the National Training Fund, associated with Ireland's Department of Education and Skill.

Source: OECD (2018c–unpublished), "The Future of Work: A Place-based Perspective", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Preparing for Jobs of the *Future*, presented by Sylvain Giguere, 8-9 March, 2018, Brussels, Belgium; Skillsnet (n.d.), *Skillsnet Statement of Strategy*, Skillsnet, Dublin, Ireland, available: http://www.skillnets.ie/sites/skillnets.ie/files/imce/u3/statementofstrategy2016-2019summary.pdf; Skillsnet (n.d.), "About Us", Skillsnet, Dublin, Ireland, available: http://www.skillnets.ie/about-skillnets

38. Local and regional governments can play an important role in stimulating and coordinating employer engagement. For example, London promoted apprenticeships using the Mayor of London brand to recruit existing and new employers to participate in apprenticeships. The city also set up a call centre to provide specific and specialised support to employers with questions about the administrative process of participation (OECD, 2018c). Elsewhere in the UK, local apprenticeship hubs have been established, acting as a central coordinating and marketing organisation to engage with employers and individuals on apprenticeship programmes. Subnational governments can also use their spending capacity to shape the demand for skills and number of apprenticeships offered by employers. Swiss cantons, for example, have modified legislative and regulatory frameworks to give preferential treatment for public procurement contracts to employers that agree to offer and train apprentices. Some municipalities in the Czech Republic are moving in the same direction (OECD, 2018d).

Boosting skills use in the workplace

39. Companies more often focus on reducing costs to improve competitiveness than on effective skills utilisation to increase productivity. Improving skills, using them more effectively, and building job quality across the skills spectrum will be critical to help manage job polarisation (OEDC, 2018d; OECD, 2018f).

40. There are additional benefits associated with the better use of skills. For individual workers, these include greater job related well-being and satisfaction, higher job quality and higher wages. For employers, this can yield better worker retention, high productivity, and better relations between workers and management. Finally, the impact on the local economy cannot be overlooked, as more skilled and productive workers can lead to gains in aggregate productivity and a better investment climate (OECD, 2018f). The OECD has seen a correlation between skill use and high performance work practices in enterprises, including flexible job descriptions, problem solving approaches, and leadership training.

41. Boosting skill use in the workplace does not always mean significant or large changes. Small improvements in work organisation and production processes can make a difference. Some techniques that can support stronger skill use include supporting employers to reshape workplaces, for example through profit sharing programmes (used in the US); an enterprise training scheme (seen in Singapore); working at the sector level and through employer networks such as the UK Futures Programme; and increasing awareness of the link between skills and productivity and helping employers become better leaders and create better workplaces, a mission of Australia's Centre for Workplace Leadership, for example (OECD, 2018f).

Supporting knowledge diffusion

42. Knowledge diffusion can create links and networks among public and private sector actors, and build innovation capacity among a region's firms and its workers. Regions have a particular role to play in this effort given their ability to act as an anchor or a hub from which other actors can link-up. Piemonte for example, established institutes for higher technical education to help students further develop their skills before moving to graduate studies, bringing together students, companies, innovation clusters, and the public sector. North Middle Sweden's Academy of Smart Specialisation incorporates a student-firm component, rooted in S3 themes. These types of institutions and the links they foster help fulfil the need to better associate the skills requested by firms with students who either have the skills or are in the process of developing them. In Saxony, there has been significant activity around knowledge diffusion particularly to support policy development. This ranges from roundtable discussions and strategy workshops to spreading knowledge on the future of industry and offer insight into future industrial priorities, to having a clear strategy for digitalisation focused on encouraging digital competence. Policy areas that contribute to linking digital capacities and industries include mobility infrastructure master plans connecting the automotive industry and e-mobility; climate and energy, and support programmes for clusters.

Ensuring sufficient and well-targeted financing and investment

43. Ensuring sufficient and well-targeted financing and investment in areas that can help prepare firms and workers for jobs of the future is a challenge for all of the regions. Managing it, however, may require a more nuanced approach. Currently, there is an emphasis is on funding higher levels of R&D and technology. While this has been successful, it tends to favour larger and more innovative firms, and risks leaving behind businesses that are inherently "lower-tech" or not-so-innovative. The subsequent policy question that arises, however, is a strategic one: what is the future of these types of businesses in the region's firm eco-system, based on its strategic objectives for industrial change and growth? The response to this will affect whether there is enough investment to support these types of businesses, and may require a multi-pronged approach.

44. First, consideration needs to be given to the "traditional" sectors that contribute to a region's industrial profile and their need to adjust to new technologies, new production techniques and new consumer demands. The textile industry is a good example. Increasingly, high-value textile products and technical innovations are leading to a use of textiles beyond the garment industry. To further develop the associated opportunities, it is important first to pause and evaluate the region's greater business model and identify where the value added lies on the value chain. Doing so, may help better design mechanisms that encourage companies to move up the value chain and channel investment to processes supporting product production.

45. Second, is a matter of matching aims and means. For example, if the objective is to increase technological and non-technological innovation among SMEs and in the process to stimulate growth and jobs, then effective spending may include programmes linking SMEs to universities, research centres and non-technological innovation platforms.

46. The last prong is potentially the most challenging – attracting capital to support start-ups and small businesses. Start-ups frequently suffer from poor financing and limited access to investment mechanisms, such as venture capital, which in turn can inhibit the development of certain, promising industrial sectors. Wallonia is experiencing this in its biotech field and Hauts-de-France in its textile industry. Ultimately, the obstacle is the combination of limited capital, risk aversion, and a culture where start-ups and SMEs are considered "personal investments" with limited desire to engage in partnerships, limited ability to generate resources, and limited capacity to grow. Some regions, such as Wallonia have introduced public funding mechanisms to help meet the financing challenge (Box 1.5). Others, such as North Middle Sweden provide indirect support by establishing programmes that help young firms identify capital opportunities, in addition to advising on their general development and techniques to move into the production stage.

Box 1.5. Wallonia: the Sowalfin Group

Wallonia's Sowalfin Group is a public interest limited enterprise that facilitates financing, for the region's firms. Prospective entrepreneurs and businesses, including start-ups, can receive capital based on the various stages of their businesses' development, including creation, innovation processes, growth, and internationalisation. Sowalfin Group's financing capacity, including guaranteed bank loans, originates in the 2015InnovFin Agreement, and counter-guarantees come from the European Investment Fund. Thus far, the initiative has supported 58 SMEs and provided EUR 1.8 million in guarantees, with a leveraging effect of EUR 32 million.

Source: Wallonia, (2018, unpublished), "Wallonia", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: *Broadening Innovation and Innovation Diffusion*, 12-13 April, 2018, Lille, France.

Conclusions and an initial overview of policy responses

47. In preparing for the jobs of the future, one side of the equation is supporting skills development, including better linking firm needs and employee skills, revamping VET programmes, supporting life-long-learning capacities, and encouraging the establishment of technology-focused institutions. The other side of the equation focuses on firms, especially SMEs, and job creation. Supporting firms meet the technology challenges associated with

the production revolution – helping them adopt technologies, adapt to a changing environment and innovate in their businesses – could help stimulate job creation, contribute to regional growth and boost productivity. Ensuring that the proper skills are available must go hand in hand with supporting firms, particularly SMEs. Innovative funding mechanisms, strategies that can assist in better understanding and targeting investment resources, and better mechanisms/processes to gauge SME's needs are all mechanisms that could contribute to this. Table 1.1 highlights a series of actions that regions could consider to meet the challenges associated with jobs of the future.

Table 1.1. Potential policy responses and implementation mechanisms for preparing for jobs of the future

Policy challenge	Objective (Strategic/Policy)	Possible policy response	Potential implementation mechanism	Rational/additional benefits
Limited capacity of smaller and older firms to adopt new technologies and to adapt to a changing employment environment	Ensure job opportunities across larger/newer and smaller/older firms	Support firms (in particular older firms and SMEs) with specific R&D, technology adoption, and internationalisation	Financing programmes for ICT investment, innovative business models, management training, partnership programs between SMEs and universities/research centres	Increases regional productivity
		Support new firms with business development and innovation		
		Encourage knowledge exchange and cooperation between larger and/or newer firms with smaller and/or older firms	Cluster policies, digital innovation hubs, strategic dialogue between industry and universities	Knowledge spill-overs
Intra- and inter-regional disparities in adapting to a changing employment environment	Ensure job opportunities across territories	Foster the integration of migrants, disabled people and women in the labour market		Retains human capital and attracts firms
		Encourage knowledge exchange and cooperation through industry clusters and collaboration/network platforms	Cluster policies, partnerships between strategic and disadvantaged regions, public-private partnerships	Cross-industry innovation
Skills gap between the current labour force skills-base and skills necessary for industrial transition	Ensure supply of appropriate skills to fill new job opportunities	Map regions, industries and skills to identify matches and mismatches	Prospective analysis by panels of experts, effective communication of findings to relevant audiences, *centres de compétences*	Informs policy-making
	Upgrade the skills of low- and middle-skilled workers	Consistently implement and support training and upskilling programs	Scholarships, facilitated loans, grants for apprenticeship programmes, vocational education schemes, life-long learning programmes; Modular learning, part-time, e-learning platforms	Workers gain highly specialised competencies needed by firms; Greater job-related well-being and satisfaction
	Protect vulnerable workers during the period of industrial transition	Support low-skilled and older workers through active labour policies	Social protection measures, industry-transition arrangements, collective organisation and bargaining	Allows workers to adapt to new forms of employment

Financing the transition to jobs of the future	Ensure sufficient and well-targeted financing and investment	Support "traditional" sectors to adjust to new technologies		Facilitates access to and benefit from global value chains
		Encourage the creation of start ups	Investment incentive policies, venture capital, micro-credit, loans, incubators in schools and universities	Creates an attractive innovative eco-system
		Implement effective multi-level financial and pedagogical incentives	Regulatory frameworks to give preferential treatment for public procurement contractors to employers agreeing to train apprentices; funding universities to offer appropriate training programmes for in-demand skills	

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Chapter 2 Broadening Innovation and Innovation Diffusion

Introduction

48. Building, supporting and promoting the innovation potential among firms of all sizes is one way to improve productivity outcomes – a key priority for regions in industrial transition. Yet, these regions can face particular barriers to improving productivity through innovation, including insufficient institutional capacity, fragile industrial links and/or an unsuitably- or low-skilled workforce. They can find it difficult to attract the investment levels necessary to encourage innovation or to form commercial research structures and promote firms that could contribute to industrial modernisation. Paradoxically, regions in industrial transition, including some in this cohort, may be home to firms at the national or European technology frontier, yet their firm ecosystem has difficulty with innovation take-up and diffusion. Given these challenges, it is essential that regional innovation policy focuses on not only cutting-edge, frontier innovation, but also on the adoption of processes or technologies that already exist. To this end, regional innovation policy and smart specialisation strategies could take a more active role in encouraging and facilitating innovation through the diffusion.

49. This chapter shares insight into recent OECD thinking on innovation, the need to broaden its definition and drivers for its diffusion. It shares the cohort's experience in this area, and provides a series of potential policy levers that could help regions in industrial transition advance with their innovation objectives.

OECD insights on broadening innovation and the experience of Cohort 1 regions

50. Innovation can yield positive returns on human, physical and knowledge-based capital by increasing aggregate incomes and raising living standards. Innovation also contributes to the process of creative destruction in the economy. While this can result in job displacement and the reallocation of labour and capital within the economy, it can also bring new opportunities, enhance incomes and create new jobs.[5] Approaching innovation in new ways – for example by applying a broader definition and supporting its diffusion – can help regions take advantage of its benefits. Shifting policy approaches to innovation are currently underway in OECD countries and regions as they strive to boost productivity. One motor for success is an enabling environment, and a second is attention to the place-based characteristics of a region's innovation potential.

Taking a broader perspective of what innovation means

51. Innovation is most often associated with R&D and technological change. However, for policy makers to fully exploit the potential of innovation as a source of growth,

[5] OECD work indicates that most new-job creation comes from young firms (less than five years old) (Criscuolo et al, 2014).

expanding the definition of R&D and technological change appears to be fundamental (Box 2.1) (OECD, 2018a).

Box 2.1. Unpacking innovation – broadening how innovation is understood

A broader understanding of innovation can help policy makers expand its impact, while also contributing to other policy concerns, such as sustainability, inclusiveness and social issues. Key elements supporting a broader understanding of innovation include:

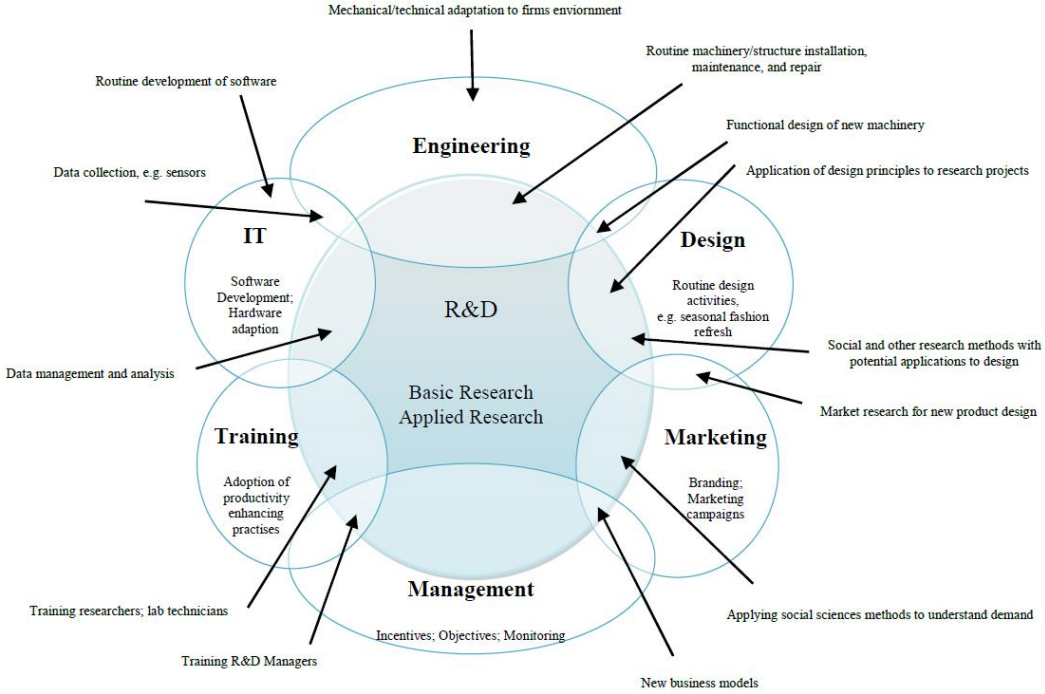
- Innovation as concept spanning the whole chain of knowledge production from fundamental research to market launch;
- A 'systemic understanding' of innovation, in which innovation is seen as the result of the cooperation and interaction of a multitude of various actors;
- A notion of innovation policy that is not restricted to promoting innovation as an end in itself, or for purely economic motives, but that considers innovation as an important tool in overcoming major societal challenges;
- A broad understanding of innovation policy, which extends beyond traditional science and technology policy, embracing education as well as other directly relevant sectorial policies and indirectly related socioeconomic policies in addressing major global challenges such as climate change, health or biodiversity.
- Exploring the links between R&D and non-R&D routines and activities in firms.
- Greater attention to public sector and social innovation

Source: OECD (2018b–unpublished), "OECD Experience on Broadening Innovation and Innovation Diffusion", Scoping Paper for Peer Learning Workshop, Lille, 11-12 April, OECD Paris.

Supporting "mixed-modes" of innovation

Empirical studies find that investing in non-R&D innovation activities produces spill-overs, such as increased systems efficiency, correlates with the economic value of innovation, and is complementary to R&D (Figure 2.1) (OECD, 2018a). Significantly, complementarities between non-R&D and R&D innovation suggest that non-R&D innovation can be a stepping-stone to more systematic and more valuable R&D (Pontikakis, 2018). This finding becomes particularly relevant for regions or firms with limited R&D capacity or resources to support R&D growth.

Figure 2.1. The overlap and differences between R&D and other innovation activities



Source: Pontikakis, D. (2018, forthcoming), "Innovation: what it is, how to measure it and how to get more of it." Unpublished draft working paper. European Commission, Joint Research Centre, Seville, Spain, originally adapted from Galindo-Rueda, F. and V. Millot (2015), "Measuring Design and its Role in Innovation", *OECD Science, Technology and Industry Working Papers, 2015/01*, OECD Publishing, Paris http://dx.doi.org/10.1787/5js7p6lj6zq6-en

52. Innovation strategies that are grounded in "mixed modes" of innovation (i.e. R&D and non-R&D driven) can better capture the value that innovation offers (OECD, 2018b). Such strategies support the R&D dimension and promote associated product and process innovations, without ignoring the value of new marketing or organisation methods. It should be noted that the relationship is somewhat circular as new organisational methods can facilitate the introduction of a new production processes or new products, which can eventually lead to additional developments in organisational methods, etc. (OECD, 2018e). This possibility applies to both large and small firms. Despite this, evidence indicates that large firms are more likely than SMEs to introduce at least one innovation in a referenced time period, and are also more likely to introduce new-to-market product innovations (OECD, 2018a).

53. A broader definition of innovation can generate a series of "how to" questions that should be considered when designing an innovation policy (OECD, 2018a). These include how to localise R&D and science to push forward change and create value; how to encourage innovation; how to shift demand and reduce cost; how to use existing knowledge in new ways and generate new knowledge; and how to manage the uncertainty associated with promoting innovation, as outcomes are never guaranteed – a factor that affects investment and investment potential.

Diffusing innovation to better support regional productivity and development

54. The extent to which technology and knowledge are generated and diffused in an economy largely determines comparative advantage and hence, economic performance. This means that engaging companies not close to the technology frontier and paying attention to the demand side is critical. Increasingly, governments are focusing on innovation and technology diffusion as keys to reviving productivity growth. The ability of firms to change or adapt, and of workers to obtain and hone new skills contribute to determining a firm's ability to absorb innovation and exploit new technologies and opportunities. There are indications that firms and industries using advanced technologies and demonstrating innovative behaviour have above-average productivity and employment growth (OECD, 2015). From a policy perspective, this highlights a need for regions in industrial transition to help firms connect more easily with different channels of innovation diffusion.

The spatial dimension to innovation diffusion

55. The spatial dimension to innovation diffusion appears to be a fundamental challenge in the cohort, with a particular need to ensure innovation is more evenly diffused across the territory. This can be exacerbated by territorial disparities, for example in education (including the concentration of academic institutions) or GDP. In Slovenia, there is a difference in innovation capacity between the eastern and western parts of the country, with the east needing support in catching up to the west (OECD, 2018e). In Saxony, the territorial disparities manifest in innovation potential measured by the number and distribution of universities or non-university research centres, as well as the percentage share of companies with continuous R&D activities (Freistaat Sachsen, 2018). Hauts-de-France has difficulty spreading innovation beyond its cities, which may be compounded by intra-regional territorial disparities in terms of industrial profiles, GDP levels, universities, etc. (OEDC, 2018e). Creating or optimising a territorial network of innovation support for greater diffusion is simultaneously a policy option and policy challenge for the region. Meanwhile, innovation diffusion in North-Middle Sweden faces similar challenges to Hauts-de-France regarding territorial disparities, but with contextual differences. Here territorial disparities are inter-regional, arising from an outward migration of firm headquarters to larger metropolitan areas and the outsourcing of R&D capabilities. Being a large territory and having low population density are contextual, contributing factors. The result, however, is similar: a series of spatial gaps in innovation activity leading to "pockets of excellence" which does not support the even diffusion of innovation across the territory.

56. The tendency to concentrate large-scale innovation investment (e.g. national or European-level research institutes) in leading areas can be a result of and simultaneously sharpen intra- and inter-regional disparities. Underlying this is an issue of critical mass, in terms of territory's size, population, population density, and firm density, i.e. an insufficient number people or firms in the territory to sustain investment outside leading areas. The result can be gaps in centres of innovation, and lead to "weaker" or "secondary" centres falling into a spiral of decline as innovators move to places with greater innovation activity, further weakening the area. With respect to firms, in regions where the business eco-system is populated by small-SMEs, there may be insufficient scale (mass) within a business or industry to actively support greater innovation. Overall, the situation represents a double-edged sword for firms and regional policy makers. For a firm, if it does not innovate it may not remain competitive and can either stagnate or disappear. For a region in industrial transition, limited innovation can translate into limited change, which foreshadows limited growth.

57. Creating opportunities for knowledge exchange and building networks seems to be key for innovation diffusion. To this effect, cohort participants use a variety of mechanisms to foster it. Innovation clusters, innovation parks, competence centres and competitive poles are all popular, and form part of the cohort's current policy approach. This is illustrated, for example, by the innovation park network in Hauts-de-France with its eight centres; Piemonte's seven themed clusters[6]; Saxony's Competence Centres that promote cross-industry innovation; and Wallonia's competitiveness poles that support SMEs with training, R&D support, investment, innovation and internationalisation Hauts-de-France, 2018; Piemonte, 2018b; Freistaat Sachsen, 2018; Wallonia, 2018). These mechanisms, however, can take time to bear fruit, and so the challenge is balancing these with tools offering short-term impact as well. Supporting innovation education and collaboration platforms for learning and research may be valuable in the short (and long) term. This is an approach taken by North Middle Sweden, helping bring those with diverse competences together to identify new solutions to current or potential problems. Supporting collaborative R&D projects among firms associated with a cluster, and collaboration among university researchers and firms as seen in Piemonte, can promote technology transfer and bring together diverse innovation actors, including universities, SMEs, service providers and others.

58. Moving forward, cohort regions identified a variety of needs, including educating firms on ways to innovate (e.g. open innovation, design thinking, etc.) and to move beyond a technology focus; better utilising research infrastructure; reinforcing innovation skills and an innovation culture; applying a holistic perspective to innovation; and broadening the market perspective (greater internationalisation). To better factor in demographic, firm ecosystem, education, or resource capacity nuances, ensuring that innovation policies are truly regional in their approach should be given serious consideration.

Shifting the innovation policy perspective

59. OECD countries are shifting away from innovation based predominately on R&D activity towards a more diverse definition and broader innovation approach (OECD, 2018a). Evidence of this is grounded in changes in innovation objectives, forms of innovation, actors involved, and instruments used. For example, there is growing interest in the direction of innovation rather than in its rate. In other words, it is becoming less a question of how many start-ups there are and more a question of whether the start-ups are fulfilling an economic objective (OECD, 2018e). There is also a move towards more open or user driven innovation, as well as knowledge diffusion, not just knowledge creation.

60. Industrial policy is also evolving, encompassing innovation policy, smart specialisation, and contributing to the business environment and its activities. Actors are shifting, too. Traditionally led by national ministries, innovation policy now sees greater regional-level involvement, for example through regional development agencies, subnational government collaboration with local universities and companies, and more actively engaged citizens. Finally, the instruments used to support innovation are also adapting, moving from the supply side to the demand side. For example, start-up laws are being introduced, there is increased support to targeted groups (e.g. lagging companies), financing mechanisms are expanding to include grants as well as tax incentives, policy supportive procurement is taking hold, and more private sector funding is underway. Reliance on competitive and cooperative mechanisms, such as science funding, networks, clusters, platforms and PPPs, is also on the rise, as is the digitalisation of innovation policies.

[6] These clusters are: Mesap - Smart Products and Manufacturing; Cgreen - Green Chemistry and Advanced materials; Clever - Energy and Clean Technology; ICT; Agrifood; Pointex – Textile; Biopmed - Life Sciences.

All of these shifts underscore the multi-faceted nature of innovation and innovation policy, and highlight the need for an attractive innovation eco-system.

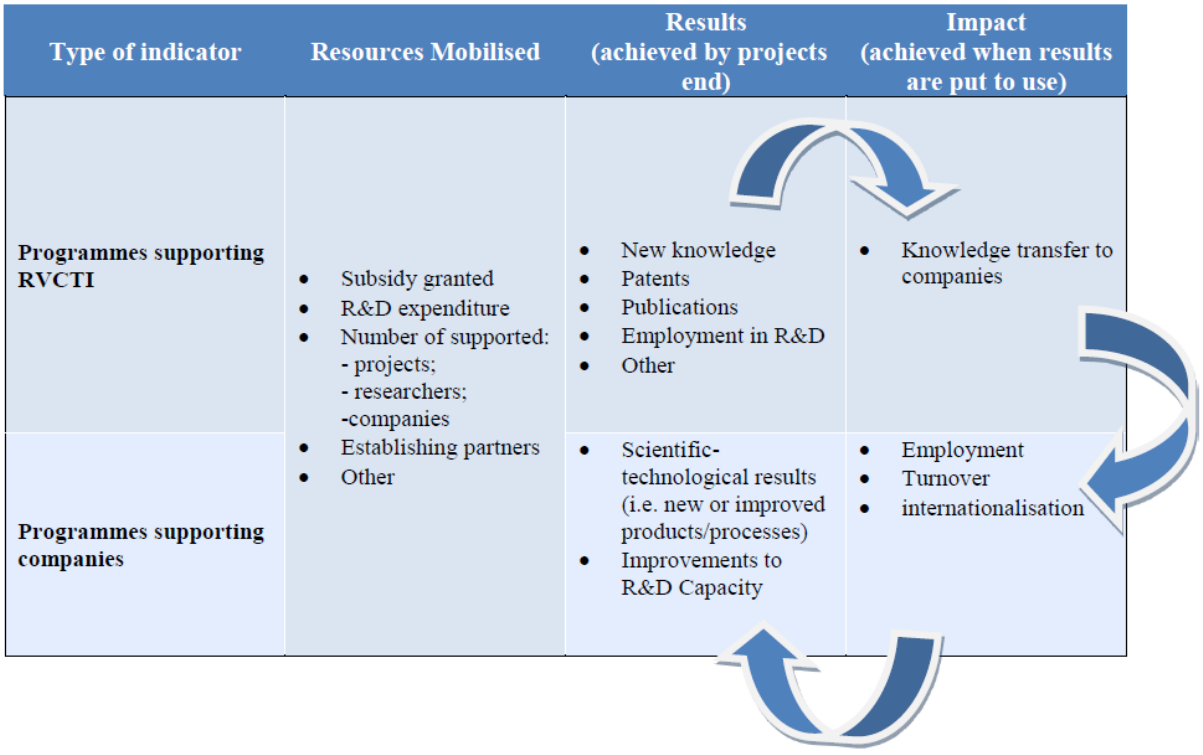
61. Creating such an eco-system depends on bringing multiple and diverse actors (e.g. regional government, public organisations, universities, science parks, clusters, firms, incubators, etc.) together to take an integrated and whole-of-government approach to policy design and implementation. Given the wide range of sectors that interact with innovation, it is important to ensure alignment between innovation policy and other relevant policy sectors. This is important not only at the national level (i.e. among line ministries), but also between the central government and regional and local authorities, since it is at the subnational level is where innovation activities are most often carried out. The role of the regulatory environment is a critical framework component for supporting innovation since the degree or intensity of regulation can vary by sector and affect innovation and its diffusion.

62. The governments in this cohort are clear on the need for a multi-stakeholder, integrated approach to industrial transition and innovation policy. They find, however, that stakeholder coordination can be a challenge and incentive mechanisms to encourage exchange may be limited.

Measuring innovation to support evidence bases

63. One large challenge in innovation policy, and an issue keenly felt by this cohort, is the difficulty in measuring and evaluating innovation. Because innovation and innovation policy operate in a complex, dynamic and uncertain environment, a commitment to monitoring and evaluation of policies is fundamental. It can be a question of measurement systems and techniques, and it can also be a question of time. For example, Spain's Basque Country has been gradually implementing its monitoring and evaluation system. In 2012, it began monitoring and evaluating results by trying to unite different inputs and assess a programme's contribution in terms of input, output and impact indicators (Oyón, 2018). Resources and results are monitored, and companies are regularly surveyed to determine whether input indicators are clear, and on expected output. Only after three years did the Basque regional authorities for innovation begin to ask for results and with this information they then were able to begin measuring impact (Figure 2.2). While it is difficult to change the time dimension, it is possible to streamline the measurement approach. For example, the Basque system focuses on indicators to measure two specific objectives linked to their industrial and innovation policy: increasing employment and supporting internationalisation.

Figure 2.2. Monitoring system indicators for R&D funding programmes in Spain's Basque Country



Type of indicator	Resources Mobilised	Results (achieved by projects end)	Impact (achieved when results are put to use)
Programmes supporting RVCTI	• Subsidy granted • R&D expenditure • Number of supported: - projects; - researchers; -companies	• New knowledge • Patents • Publications • Employment in R&D • Other	• Knowledge transfer to companies
Programmes supporting companies	• Establishing partners • Other	• Scientific-technological results (i.e. new or improved products/processes) • Improvements to R&D Capacity	• Employment • Turnover • internationalisation

Source: Adapted from Oyón, C. (2018), "PCTI EUSKADI 2020: A smart specialisation strategy oriented to boost Economic and Sustainable Development", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Broadening Innovation and Innovation Diffusion, presented by Mario Cervantes, 11-12 April, 2018, Lille, France.

This question of how to better measure innovation was a key concern for the cohort. Currently, measurement tools generally focus on R&D levels, which are unlikely to capture activity and results from non-R&D innovation and thus are less able to support a broader approach to innovation policy (OECD, 2018e). In addition to the approach taken by Spain's Basque Country, regions may want to consider developing innovation programme reviews where there is a qualitative and quantitative evaluation of specific programme initiatives in terms of cost (value for money), results, and return on investment. This type of evaluation could be tested with a limited number of initiatives – especially experiments and pilots – associated with smart specialisation strategies in order to determine what can and cannot be assessed, and how much information this type of assessment provides policy makers. In other words, is the information sufficient to determine what is working with the programme, what might need adjustment, and how can programme funding be better managed (e.g. increase, decrease, desist, etc.)? At the same time, sensitivity to how long it can take for innovation policies and programmes to yield results should be considered as well.

The role of regional governments in redefining innovation and innovation policy

64. Regional governments have an active role to play in ensuring that their governance, policy and productive environments support all forms of innovation. To this end, the OECD

identified a set of five policy principles and a series of characteristics that support an enabling environment for innovation (Box 2.2)

Box 2.2. OECD principles and characteristics of an enabling environment for innovation

The OECD Innovation Strategy identifies five policy principles and four characteristics of an enabling environment for innovation that can help guide policy makers as they think through innovation policies and programming.

Innovation policy principles

1. Empowering people to innovate;
2. Unleashing innovation in firms;
3. Creating and applying knowledge;
4. Applying innovation to address global and social challenges;
5. Improving the governance and measurement of innovation policies

Characteristics of an enabling environment for innovation

- *A skilled workforce* – one that has the knowledge and skills to generate new ideas and technologies, to bring them to the market, and to adapt to technological changes across society.
- *A sound business environment* – one that encourages investment in technology and knowledge-based capital, and that also enables innovative firms to experiment with new ideas, technologies and business models, helping them to grow, increase their market share and reach scale.
- *A strong and efficient system for knowledge creation and diffusion* – one that engages in the systematic pursuit of fundamental knowledge, and that diffuses this knowledge throughout society through a range of mechanisms, including human resources, technology transfer and the establishment of knowledge markets.
- *Policies that encourage firms, and consumers, to engage in innovation and entrepreneurial activity* – more targeted innovation policies that can help strengthen markets for innovation, and focus policy on specific challenges and opportunities, e.g. green growth, including at the regional or local level. Moreover, well-informed, dynamic, engaged and skilled consumers are important for innovation, and their role can be facilitated by specific consumer policies.

Source: OECD (2010), *The OECD Innovation Strategy: Getting a Head Start on Tomorrow*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264083479-en

65. Government can also help make innovation more concrete and practical. A regional level map of innovation types, systems, actors, etc., can help policy makers gain a clear understanding of the current state of innovation and innovation policy in their territory, while helping identify where innovation can or should go in the future. Such mapping is also valuable for clarifying and understanding policy options, and can support prioritising innovation in regional development strategies and policies. Given their convening and coordinating power, all levels of government, and especially regional governments, are well positioned to design and/or promote programmes that help large firms engage with smaller ones. Smart specialisation strategies bring together actors and instruments, and can build links with other national policies. Part of the solution lies in thinking about innovation both

as a creative process and as a functional one. Another part of it lies in understanding the region's innovation needs, capacity and firm dynamics. Spain's Basque Country experience helps illustrate how a strategic and sequential regional policy approach that incorporates innovation into industrial policy can support meeting development objectives (Box 2.3).

Box 2.3. How regional governments can design and implement innovation policy for territorial development: Spain's Basque Country

Over the past 40 years, the Basque government has developed and implemented its industrial and competitiveness policies as part of a broader regional development strategy. It adopted a four-phase industrial policy, beginning with the creation of a specific scientific research and technology network with 4 000 researchers that belong to a private, non-profit system – thus generating the supply. The second phase (launched in the 1990s) focused on demand by fostering and supporting clusters, using for example cluster collaboration schemes. The third phase went into specialisation, as a natural extension of the existing policy. The fourth phase, to be implemented post 2020, looks to complement a top down dimension where, for example, horizontal and vertical priorities, objectives and the governance elements are established, with a bottom up component that has identified priorities for specialisation.

The Basque model uses steering groups as an implementation mechanism, and relies on a large and varied number of actors and stakeholders, ranging from the government and the regional development the regional business development agency (SRPI), to steering groups for implementation, company clusters, science and technology players, SMEs, and leading companies. Often the level of involvement of these various actors has depended on the strategy's implementation phase. Critically, innovation policy in the Basque Country has always been part of a broader industrial policy which in and of itself is part of the region's development strategy. Policy implementation also relies on a combination of private (59%), government (35%), and international (6%) funding.

Source: Oyón, C. (2018), "PCTI EUSKADI 2020: A smart specialisation strategy oriented to boost Economic and Sustainable Development", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Broadening Innovation and Innovation Diffusion, presented by Mario Cervantes, 11-12 April, 2018, Lille, France

66. There is also a strong regional dimension to innovation financing, which represents some challenges for the cohort. Overall, emphasis appears to be placed on funding R&D oriented projects rather than on non-R&D activities. In addition, where R&D investment is insufficiently coordinated, the effectiveness of the investment can be limited.

67. Regional governments need sufficient financial capacity and resources to help foster, broaden and diffuse innovation, together with an appropriate level of autonomy to ensure that the use of funds reflects their regional innovation priorities and needs. To support this, in addition to the benefits offered by EU funds, for example through the European Regional Development Fund (ERDF), regions may need to innovate and broaden their own financing mechanisms. At national levels, the OECD has observed changes with respect to instruments for innovation financing, primarily a shift from the supply side to the demand side. This is illustrated by an increase in government support to targeted groups (e.g. lagging companies), and an expanded menu of financing mechanisms, including grants, tax incentives, policy supportive procurement, and more private sector funding. The use of cooperative and competitive financing tools, such as science funding, networks, clusters,

platforms, PPPs and co-financing (often in association with EU funds), is also on the rise. Through ERDF co-financed projects, Wallonia has actively emphasised financing tools as part of its innovation approach (Box 2.4). Ultimately, a region's capacity to finance innovation reflects its ability to help firms acquire the resources to innovate: these are two sides of the same coin.

Box 2.4. Using co-financing to support innovation financing in Wallonia

Wallonia facilitates financing for innovative product-driven activity, targeting SMEs and entrepreneurs while also supporting other policy objectives with an innovation component, such as energy and climate.

Through ERDF funds, Wallonia was allocated an EUR 50 million budget for EasyUp, which offers subordinated loans for "close to market" projects, helping businesses with the final stages of new product development. A maximum of EUR 500 000 may be allotted to any given project, and can cover a maximum of 40% of an SME's global financial needs. To date, EasyUp has financed 187 projects.

Similar to EasyUp, EasyGreen funds initiatives that reduce CO2 emissions through energy efficiency (e.g. production processes, heating, insulation materials, etc.) and renewable energy production systems. Wallonia's allocated funds amount to EUR 47 million disbursed in the form of loans or equity participation

Source: Wallonia (2018, unpublished), "Wallonia", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Broadening Innovation and Innovation Diffusion, 12-13 April, 2018, Lille, France.

New ways to think about and build productivity

68. Overall productivity growth comes from at least from two sets of sources: countries where productivity gaps are being narrowed – driving up productivity growth, and countries where productivity leaders are pushing growth upwards, without significant contributions from other (non-leader) regions. What is increasingly evident from this dynamic is that in frontier regions or places where firms pull away from the pack inequality is increasing compared to those regions where growth capacity is more evenly spread (OECD, 2018c).

69. Supporting the proper functioning of cities, and promoting the development of tradable sectors are two dimensions that can help close productivity gaps, and are areas where national- and subnational-level policy makers have considerable leverage (OECD, 2018c). Well-functioning cities are often home to knowledge-intensive (traded) sectors, have markets large enough to support economic diversity and dynamism including with respect to labour market options, and tend to benefit from agglomeration economies[7] (OECD, 2018c). This territorial dimension, particularly with respect to urban agglomerations is fundamental, and is a factor this cohort grapples with. For example, Hauts-de-France has difficulty ensuring that the full territory is participating in an innovation process, as currently innovation tends to be centred or clustered in cities. Meanwhile, tradable sectors can offer strong links to other regions and global markets but face competition and are highly exposed

[7] If well managed, there is evidence indicating that spillovers from agglomeration economies can extend out by up to 300 kilometres.

to market shifts and shocks. To counter this, supporting their capacity to be innovative, open and forward-looking is critical. (OECD, 2018c).

70. Three particularly relevant regional-level policy levers can help address the productivity gap and which link to innovation capacity. The first is public investment. This has dropped since pre-crisis levels and has not quite recovered. Taking an innovative approach to financing subnational public investment, including through green investment and climate financing. The second is structural reform with complementary policies at the local level, and the third is effective multi-level governance practices and territorial reforms. This can include integrated, strategic regional development planning, increased subnational scale, more subnational resources (human, financial and infrastructure), and appropriate levels of subnational autonomy in management, administration and fiscal matters. Diversifying regional economies is important for closing productivity gaps, and especially effective when regional endowments are nurtured. Specialised regions are more productive and diversified regions grow faster, thus identifying and building on local strengthens can also help. Helping regions in industrial transition overcome their productivity challenges may also depend on building regional specialisation and diversification as these attributes can lead to greater productivity and faster growth. This means, on the one hand, supporting firms and creating an enabling environment for innovation, and no the other investing in and leveraging the region's human capital – their skills, capacities and social capital (OECD, 2018c).

Additional themes in the innovation discussion: skills, intangibles and networks

71. There are direct and indirect inhibitors to ensuring that innovation – in all of its definitions and formats – is sufficiently diffused. Among the direct obstacles are insufficient resources, knowledge, and skills, to support and promote innovation, and limited capacity to adopt innovations when they appear. Among the indirect obstacles – inherently harder for regions to influence – are the question of time or speed, a need for greater rather than less openness, and cultural norms that do not support risk taking or change.

Ensuring innovation skills and adoption capacity

72. Institutions, research teams and individuals all innovate. The capacities and skills needed, however, may vary based on what or who is doing the innovating. Firms require solid capacities in terms of financial and human capital, framework conditions (e.g. regulations and laws that support innovation) and appropriate infrastructure. Research teams and individuals will require the same, together with the necessary soft skill set formed by education and experience, as well as sufficient opportunity to nurture new ideas.

73. The enterprise ecosystem in cohort 1 regions is generally dominated by SMEs, which, as previously noted, are less likely to introduce a new innovation or new-to-market product innovations than large firms. This finding can explain remarks that their SMEs demonstrate limited innovation levels (OECD, 2018e). This may be due to a limited understanding or definition of innovation including by executive management, low levels of R&D, and insufficient or insufficiently trained staff to assist or lead in innovation transition or adoption. The question of tertiary education levels, examined in the previous chapter, may also be a factor, particularly with respect to the last point.

74. The cohort is highly focused on building innovation capacity among its firms. This is an aim in Piemonte, as well as in Wallonia, where high-potential SMEs are proactively accompanied by the government (OECD, 2018e). The question of capacity may also be one

of the drivers in the Hauts-de-France experience. Here innovation has often been in the hands of a few "industrial champions" and the innovation potential of many other companies, including SMEs, is not being realised. This could be rooted in the limited capacity of the region's firms to launch innovative projects (e.g. new products or process) as well as a limited capacity to manage innovation at the executive levels (OECD, 2018d).

75. Limited innovation education and innovation marketing are other contributing factors. The need to make sure that the right "innovation skills" are in place was noted by the Cohort, as without such skills the innovation capacity of firms can be constrained. To counter this, Piemonte has introduced a group of seven technology-focused institutes to ensure the region's population is sufficiently skilled to participate in the new, technologically-driven economic environment. The private sector actively participates in the programme, contributing to the curricula design and teaching courses – 40% of the instructors come directly from industry (OECD, 2018d).

76. The cohort identified the problems relating to innovation capacity within their SME ecosystem, and highlighted some of the tools they are using to address this, such as Piemonte's technology institutes, noted earlier, clusters, and the use of new technologies. For example, in North Middle Sweden there are some early initiatives to introduce firms to new technologies, including digital technologies, particularly as research indicated that 70-75% of the region's SMEs acknowledged a need to digitalise, with only 15% having a plan to do so (OECD, 2018c). Despite this, there appear to be fewer tools that clearly promote capacity building in non-R&D innovation and that support innovation-adoption. Success in innovation and innovation diffusion certainly requires knowledge transfer, networks, skills and education. Yet, it also requires a business, academic and policy environment that is conducive to attracting and retaining talent that innovates, and ensuring that innovative companies, including SMEs, develop in a sustainable way. Here is where policy makers, and a cross-sector or integrated approach to policy making for innovation become critical – innovation policy, including smart specialisation strategies, must work with industrial policy, as well as with education and skills policy, finance strategies, and broader regional development planning. Ultimately, in order to promote innovation and its adoption, not only must firms and individuals be innovative, but public authorities as well.

Addressing the intangibles: speed, openness and culture

77. Innovation can often be perceived as a "race against the clock" – to create, produce, and launch – before the idea is no longer "new". Speed is important but may depend on the sector. In sectors where the innovation rate is exponential, it is easier for leading frontier companies to monopolise the market. In such cases, the challenge is to get companies that are not as fast in technical innovation to be competitive innovators. One way is to support innovation around business systems, as the complexity of an innovation can compensate for a lack of speed. At the same time, from a policy perspective, the issue of speed can make thinking in the long-term more challenging given the inherent uncertainty and change that comes with innovation.

78. The cohort also highlighted openness as an important driver of innovation. This could be in the form of open data for example, permitting easier access to a broad range of inputs for innovation. It can also be openness to networking, sharing ideas and collaborative processes (e.g. co-production). Conversely, the current trend towards "closed", towards looking inwards (regionally or nationally), rather than outwards (cross-border or globally) for example, is counter-productive to engendering the types of networked environments that foster innovative thinking the knowledge circulation that supports it. Adjusting certain

framework conditions may be helpful for promoting or maintaining openness, including a broader regulatory environment and an appropriately open approach to trade. While this may often be outside the scope of regional-level intervention, it does should not inhibit building capacity among firms to innovate and share their innovations as broadly and across as many boundaries as possible.

79. Innovation generates change, something many people and cultures are wary of, and so citizens need time to get accustom to innovation. At the same time, innovation is not a spontaneous process. Placing societal value on innovative capacity can help nurture and generate more of it, and active programming to support "innovation education" could be a valuable tool. Like entrepreneurship, the skills that support innovative thinking and action, and the attractiveness and benefits of innovation itself, may need to be taught from an early age. Also like entrepreneurship, where not everyone is an entrepreneur, not everyone is an innovator; yet this does not diminish the possibility of instilling, early on, an openness of spirit to innovation and innovative environments.

Building collaborative networks and the seemingly mixed results of clusters

80. Building and maximising opportunities for establishing networks to promote knowledge exchange and collaboration among innovation actors is fundamental to successfully broadening and diffusing innovation. One way that this cohort contributes to network development is by active support of diverse platforms that can promote better diffusion. The effectiveness of the platforms themselves, however, appears to be mixed. For example, clusters, a tool used by all participants in the cohort, may be good at building ties within a sector, but not necessarily across sectors or actor type (e.g. firms, research institutes, academia).

81. North Middle Sweden has been using cluster development and cluster policy to build innovation capacity for more than a decade. These are considered quite successful for increasing inter-firm collaboration and helping improve firm performance, particularly during economic downturns. However, their impact is more limited with respect to promoting greater collaboration and building ties with research institutes, academia, other sectors, and new markets (OECD, 2018d). In Wallonia, cluster policy is a central component to the region's innovation approach. There is some expectation that clusters could help deepen the participation of SMEs in collaborative innovation projects (OECD, 2018d). Clusters are also considered key to building innovation capacity in Hauts-de-France, particularly those with an international scope (OECD, 2018d). Like North Middle Sweden, Piemonte's clusters have helped build SME collaboration and supported technology transfer yet the policy may not be performing as well as desired, as the number of SMEs associated with clusters is not growing OECD, 2018d). This may be a result of limited cross-sector collaboration, as experienced by North Middle Sweden, but it is uncertain. Establishing public/private labs may be one way to address this difficulty in building cross-sector, cross-actor collaboration. Competence centres, such as those in Saxony may be another.

Conclusions and an initial overview of policy responses

82. To make the most of what innovation can offer, innovation policy should not be limited to the supply of R&D or direct innovation support. It should also strive to support education and capital investment that match the need of local industries, increasing their absorptive capacity and innovative capability. Public policy can stimulate the effective transfer of knowledge through labour mobility and collaborative networks, fostering knowledge circulation and interactive learning. Policies in this context can be platforms for

knowledge diffusion, e.g. based on the idea of supporting "related varieties", with policy makers acting as intermediaries.[8] Policy may also need to consider institutional capacity building,[9] as some regions lack hard institutions, good governance and political goodwill, all thought to be essential for innovation to "trickle down". Finally, beyond institutional factors, public action can help foster links between industries and regional and national innovation systems.

Table 2.1. Potential policy responses and implementation mechanisms for broadening innovation and innovation diffusion

Policy challenges	Objective (Strategic/Policy)	Possible policy response	Potential implementation mechanism	Rationale/additional benefits
Intra- and inter-regional territorial disparities in innovation capacity	More even diffusion of innovation across territories	Encourage knowledge exchange through innovation clusters and collaboration/network platforms (e.g. between large firms, SMEs, research centres, universities)	Regional-level cluster policies and/or cluster collaboration schemes	Increase in productivity
			Financial support to collaborative R&D projects for firms associated with a cluster	Cross-industry innovation
		Support R&D innovation in structurally disadvantaged territories	Financial programmes and investment schemes	Ensures access to innovation
			Partnerships between strategic and disadvantaged regions	
Limited innovation capacity for smaller firms	More even diffusion of innovation across larger and smaller firms	Support smaller firms with R&D innovation and entrepreneurial activity	Financial mechanisms for smaller firms such as grants, tax incentives for innovative product-driven activity, facilitated loans, incubation and accelerator programmes	Creates an attractive innovation eco-system
		Support smaller firms with specific skills-training	Training schemes for smaller firms' employees	Diversifies regional economies
		Inform smaller firms of good innovation practices and examples	Collaboration programmes between larger and smaller firms	
		Evaluate the impact of financial mechanisms and training schemes for smaller firms	Monitoring and evaluation systems	Supports building evidence bases; Facilitates policy, programme and financing adjustments;
Changing nature of innovation processes	Ensure the right innovation skills and capacity, adapted to the new technologically-driven economy	Implement and supporting training and upskilling programmes	Scholarships, or apprenticeship programmes	Employees gain highly specialized competences needed by the company
				Ensures continuous access to innovation capacity

[8] Cooke, P. (2009), "Economic development policy as an evolutionary envisioning process". *Report for the OECD LEED programme*, mimeo, and Boschma, R.A. (2009), "Evolutionary economic geography and its implications for regional innovation policy", *Report for the OECD LEED programme*, mimeo.

[9] Rodríguez-Pose, A. (2013), "Do institutions matter for regional development?" *Regional Studies*, 47 (7), 1034–1047.

	Encourage knowledge exchange between leading research institutions and industry	Collaboration partnerships between universities/research centres and industry	Knowledge spill-overs
	Accelerate the technological transfer towards SMEs	Funding technological transfer projects and R&D investments	Effective participation in the changing economic environment
	Strengthen and support leading innovation companies	Long-term governmental development plans for high-innovation-potential firms	
	Encourage openness to foreign sources of knowledge and innovation		

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Chapter 3 Preparing for the Low Carbon Energy Transition

Introduction

83. A historic reliance on fossil fuels shapes the way our societies work, live, and travel. In order to move away from this reliance and toward a low-carbon future, the structure of contemporary economies must be reconsidered. While the transition to a low-carbon economy can actually be a pre-condition for well-being and economic growth, any region undergoing such a transition incurs transition costs that need to be addressed in the short-term in order to be able to benefit from the transition in the long-term.

84. The specific policies that can support a low-carbon transition will likely vary from one region to another as there is no "one size fits all" pathway to a low-carbon economy, a characteristic of transition exemplified by this cohort. Yet, regardless of the individual policy, it is fundamental for actions to be rooted in long-term strategies. When weighing the short-term structural changes that can represent risks for already vulnerable populations, with the economic and environmental potential of a low-carbon transition, carefully designing policies that can harness benefits and limit downsides to a fair transition becomes imperative. Several core climate-policy characteristics are needed in order to achieve climate goals, including: stable and predictable climate policies; a strong price on carbon in order to make low-carbon investment competitive; strong regulatory support, and targeted policies for low-carbon innovation- for example, higher R&D investment and aligning innovation frameworks with the emergence of low carbon technology.

85. This chapter focuses on the opportunities and challenges associated with transitioning to a low carbon economy, and what this represents to the cohort participants. It includes OECD insights on the topic, highlights practices in the cohort, and provides an initial overview of policy responses.

OECD insights on a low-carbon transition and the experience of Cohort 1 regions

86. Investing in a climate agenda and transitioning to a low-carbon economy has a positive impact on economic growth (OECD, 2017a), offering opportunities for national and subnational governments in terms of macro-economic effects, addressing structural inequalities particularly at the household level, and engendering infrastructure and infrastructure investment. The pathway to a low-emission future however, will differ according to the starting point of each by region and country. These starting points may vary depending on the carbon intensity of a nation's energy supply, the energy intensity of GDP, and the country's energy mix, as well as on its resource endowment and model of development.

87. The low-carbon challenge confronts both national and subnational governments. However, particular consideration should be given to the role of the regional and local levels as it is here were international agreements and national level policies are often implemented, and where a significant amount of public investment takes place. Preliminary estimates

indicate that during the period between 2000 and 2016 in 30 OECD countries, cities and regions were responsible for 64% of public investment in selected sectors that have a direct implication on climate change (OECD, 2018a). Given the differences in terms of starting points, and implementation capacities ensuring a just or fair transition is fundamental (Box 3.1).

Box 3.1. An OECD checklist for a just transition

In order to ensure a just (fair) low-carbon transition, all levels of government need the proper tools to develop integrated and coherent policies. In particular, consistency between climate, social, and economic goals is crucial for a successful transition. The OECD has identified a series of actions to help guide a just transition, including:

1. *Political and corporate commitment*: Obtain a clear commitment from the public and private sector to achieve a common vision and objective and provide funding for the transition.
2. *Develop long-term strategies*: Develop a long-term strategy to implement low-emission pathways that goes beyond electoral cycles. A long-term strategy can also identify the communities and assets put at risk due to the transition before adverse effects occur, and ideally identify mechanisms to mitigate the impact.
3. *Look at policy effects*: Identify the impact of policies on the population and on the private sector in the short and long term, and across administrative boundaries. The effects of low-carbon policies go beyond city and regional limits, so the implementation of a functional approach to territory is important.
4. *Integrate approaches to implementation*: Ensure policy alignment between sectoral policies (e.g. energy and environment).
5. *Align policies between levels of government*: Clearly define implementation responsibilities and actions, in accordance with competencies.
6. *Stakeholder participation*: Develop vision documents and long-term strategies with the participation of key stakeholders, including trade unions, individual communities, private sector, other government levels and entities, etc. There should be an active social dialogue regarding the transition.
7. *Monitoring and reporting*: Report on and measure the impact of the strategy, and review it accordingly

Source: Adapted from OECD (2017b), *Policy Coherence for Sustainable Development 2017: Eradicating Poverty and Promoting Prosperity: Building blocks for coherent implementation of the Sustainable Development Goals*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264272576-4-en

The macro-economic effect: balancing short-term interests and long term gains

88. The macro-economic effects of the low-carbon transition must be considered taking a short- and long-term perspective. In the short term, combining climate action and economic reforms can lead to an increase in GDP of about 1% (Marchal, 2018). The short-term positive impact on growth coming from additional investment in infrastructure and green innovation could be offset, however, by a short-term rise in energy prices for households and industries. The result can be a net neutral impact on GDP in the short-term. In the long-term, however (i.e. to 2050), the growth effect is estimated to be a 3% increase in GDP (Marchal, 2018).

This estimate does not take into account economic disruption linked to climate impact. In the future, climate change will cause extreme weather events to be more regular, and their effects, for example lower agricultural yields, need to be taken into consideration. In the short-term, economic and environmental interests may not align, but in the long-term low carbon transition can go hand-in-hand with growth. The experience in North-Rhine Westphalia illustrates this tension and highlights the balance between the economic and environmental considerations behind low-carbon transitions (Box 3.2). In some cases, economic and environmental drivers may align to drive the transition in regions, necessitating careful policy making in order to facilitate the process for workers. In other cases, trade-offs between environmental goals and economic opportunities may be necessary, and which could lead to uncertainty concerning the timing and outcome of a low-carbon transition.

Box 3.2. Keys to a successful low-carbon transition: North-Rhine Westphalia

North-Rhine Westphalia is one of Germany's most populous states (population approximately 18 million; GDP EUR 670 billion). Highly industrialised and with a historical dependence on lignite and hard coal mining, it is home to the Ruhr Valley, where the phase-out of hard coal mining is considered a generally successful example of a low-carbon transition.

North-Rhine Westphalia's experience reflects the interplay between two drivers of the low-carbon transition: economic and environmental concerns. The driver behind the phasing out of hard coal mining in the Ruhr Valley was economic, as low global coal prices made it less profitable. For years, the lack of competitiveness was supported by subsidies as hard coal mining was a traditional structure with a strong lobby. However, the last five decades have seen a conscious restructuring from its coal and steel-based specialisation to a more diversified service economy. Measures to ensure a smooth transition for workers included social protection, retraining, early retirement, and other long-term strategies negotiated with key stakeholders. There have also been initiatives to regenerate the physical landscape of the energy-intensive mining sector, with industrial sites being preserved and converted into tourist attractions for those who want to experience the Ruhr industrial culture. One of the largest industrial coal facilities, the "Zollverein", was named a UNESCO World Heritage Site. The current debate centres on lignite mining in the Rhine area. Since power prices are very low, environmental ambitions (i.e. meeting climate goals) would be the primary driver for phasing out lignite mining.

Source: Freistaat Sachsen (2018, unpublished), Low-Carbon Energy Transition: A Saxon Perspective. PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Low-Carbon Energy Transition, 14-15 May, 2018, Brussels, Belgium; Marchal, Virginie, (2018, unpublished), "For a Sucessful Low-Carbon Energy Transition", Scoping Paper for Peer Learning Workshop, 14-15 May, 2018, OECD Paris.

89. Regions are aware of the economic and new business opportunities that can be generated through a low-carbon transition, and the impact these can have on the economy, particularly if there is an ability to promote innovative solutions for the low carbon transition, and expand these across borders or sectors. Hauts-de-France has concentrated on helping existing enterprises fulfil their potential as internationally competitive players. North Middle Sweden's electric highway, now being tested for freight transport, could potentially also be used for emergency services (OECD, 2018b). In Piedmont, the Energy Centre was established as a competence centre or think tank to provide strategic advice on energy

policies based on the interaction between industry, research, and public authorities, and to promote new business ventures. In Saxony, the WindNODE project aims to create new markets for renewable energies by identifying flexibilities in industries and then marketing them to make the low-carbon shift viable for companies. Highlighting the business opportunities that can be associated with a low-carbon transition can help build and ensure collaboration and commitment among a broad range of actors.

The structural impact: jobs and inequalities

90. It is estimated that the low-carbon transition will have a relatively small impact on labour markets overall, with 0.3% of jobs affected in OECD countries, and 0.8% of jobs affected in non-OECD countries (OECD, 2018d). Yet, these numbers depend on the sectors and regions in which the transition takes place. For example, the mining and fossil-fuel electricity sectors could see an estimated 8% job reduction, and this will affect men more than women[10]. Older workers are also more likely to feel the impact of a low-carbon transition. In light of this, current and/or new policies should target the workers most affected in order to minimise transition costs. For example, in order to reallocate workers from the mining and fossil fuel sectors to the construction and renewable energy sectors, which benefit most from the low-carbon transition, it is essential to develop tailored skills strategies to fill the skills gap between start and destination jobs.

91. There is also a geographic dimension to consider: the decentralisation of renewable energy production compared to centralised and clustered fossil-fuel and mining industries can lead to a disparity between the jobs lost and those created, and contribute to inter- and intra-regional inequalities, certainly in terms of GDP and income, but also in terms of services and access to these. The structural changes that will affect the labour market make clear the need to understand who will be affected by the low-carbon transition, and where the alternative jobs are located. Governments must ask themselves how skill gaps can be filled and who can fund retraining programmes or other policies relating to job transitions. They also need to identify mechanisms to create or sustain diversified economies, as these are more resilient in the face of change.

92. Transitioning to low-carbon economies can have negative implications for some regional labour markets. At the same time, not taking action to support transition can further entrench structural inequalities. For example, low-income households are more exposed to climate risk than others, leading to a greater loss of lives and livelihoods. This is mainly because lower-income households tend to concentrate in areas with higher climate-related risk as a result of property prices. The benefits of such a transition for vulnerable households are clear in the long-run. In the short run, however, policies related to a low-carbon agenda may have unintended consequences, particularly for such households. Thus, it is even more imperative to ensure a just transition.

93. Low-income and poorer households could also be disproportionately affected by carbon pricing, as energy and transport tend to make up a higher proportion of their spending (Mcinnes, 2017). Carefully designed social policies can counteract this. For example, recycling revenues of carbon taxes could become a powerful tool to invest in programmes that address the roots of poverty and inequality. Low-income populations often do not have access to schemes associated with increasing energy efficiency, for example building retrofits. Local or regional government programmes that facilitate access for tenants and

[10] The share of male employment in high-carbon sectors is higher than that of women: 97% male employment in mining, and 77% in electricity.

low-income households to retrofitting schemes can help make whole urban areas more energy efficient and resilient, thus reducing energy expenditures (Box 3.3).

Box 3.3. Seoul's Energy Welfare Public-Private Partnership (PPP) Programme

Seoul, Korea is addressing the disproportional effects that climate change has on low-income families by increasing the access of low-income households to building retrofitting schemes. The Seoul Energy Welfare Civic Fund has raised over USD 500 000 in monetary and in-kind contributions from 34 businesses and 1 800 citizens. In addition, 17 public buildings and 16 universities have pledged to donate the profits earned from selling the electricity they saved in order to expand energy-welfare programmes and combat energy poverty.

The programme has allowed the city to install solar power panels and replace outdated lightbulbs with LED-bulbs in many public apartments and low-income households, lowering their fuel spending and energy consumption. The scheme also regularly recruits underprivileged job seekers as energy consultants and welfare workers.

This initiative is an example of how subnational governments can create a more inclusive transition, lower energy consumption, create economic opportunities and also harness innovative financing methods.

Source: C40 Cities (n.d.), "Seoul: Energy Welfare Public-Private Partnership (PPP) Programme", https://www.c40.org/awards/2016-awards/profiles/116.

94. Governments often consider introducing congestion charges as a tool to lower carbon emissions, particularly in high-density urban areas. However, these can raise a barrier for low-income households living far from the city centre to access jobs. While recycling the revenue from such charges into improving connectivity by public transport could be beneficial, not all public transport systems manage to connect the low-income periphery with the urban core. At the same time, investment in the neighbourhood in the form of new amenities, including improved transport systems, may lead to an increase in housing prices, resulting in the potential displacement of the lower-income people that the amenity means to serve. Ensuring a just transition can also help mitigate such impact, and ensure greater inclusiveness in the transition process.

The critical role of infrastructure

95. Most carbon emissions emanate from transport, cities, and other large infrastructure, meaning that the type of infrastructure built, or renewed, in the near future will have a large impact on the ability to achieve emission targets. To align with the low-carbon transition objectives, a 10% increase in infrastructure investment is needed (OECD, 2017a). This increased infrastructure spending would be more than offset by a savings in fossil fuel expenditures (OECD, 2018 unpublished). The key challenge in re-orienting infrastructure investments to align with the low-carbon transition agenda is bridging the infrastructure gap that already exists.

96. Infrastructure investment – and its impact – is particularly relevant for subnational governments, as almost 60% of public infrastructure investment occurs at this level (OECD, 2018e). The decisions made by regions and cities regarding infrastructure are extremely relevant and can influence a country's ability to achieve emissions and other climate-related targets. Subnational governments are also often responsible for decisions regarding land use

planning, integrated transport planning, and buildings (construction, retrofitting, demolition) in their territories, all of which can play a large role in the low-carbon transition.

Ensuring sufficient financing and investment

97. It is estimated that infrastructure investments must increase by 10% in order to build the capacity needed to pursue a low-carbon transition (OECD, 2017a). This can push national, regional and local governments to become more innovative with climate finance and better leverage private sector support. First, developing innovative financial instruments such as green bonds should be encouraged. Second, the financial system's bias toward a short-term perspective should be addressed in order to move toward a system that fully accounts for climate factors. To accomplish this, the disclosure of climate risk in investor portfolios and a better evaluation of environmental assets are possibilities. Lastly, public development banks can be catalysts for climate action because of their capacity to build knowledge and help regions develop low-emission plans, while allowing them to borrow at a low rate. As the cost of capital is a key barrier in the transition, dedicating more than the current one third of portfolios to the low-carbon transition could have a large impact. The broader investment environment has the potential to accelerate or decelerate a low-carbon transition, and so while specific policies are important, evaluating and reconsidering the investment environment is crucial.

98. Regions in this cohort are aware that the economic benefit of a low carbon transition is essentially a long-term proposition, which makes financing a particular challenge. On the one hand there may be budget (fiscal) constraints, especially among smaller or less wealthy subnational authorities. On the other, private funds may not be easily accessible, either due to national regulations limiting borrowing by subnational authorities, due to lack of interest among private financial institutions to invest, or to limited capacity or experience in developing and managing PPPs.

99. There is also a question of SME capacity, as they, too, may also face difficulties raising capital for a low-carbon transition, highlighting the need to target financing models to specific actor groups. Innovative financing can help foster innovation and promote a low-carbon transition as well. Wallonia's Easy Green project supports SMEs with financing and creates incentives for SMEs to travel down a low-carbon path (Box 3.

Box 3.4. Innovative financing for innovation and low-carbon transition in Wallonia

Easy Green is a financial tool launched in November 2017. With a budget of EUR 47 million for the whole region, its purpose is to ease innovation and energy transition investment for Wallonia's SMEs. The tool specifically targets SMEs in order to balance the information deficit on the economic and environmental benefits of investment in renewable energies. It also serves to illustrate the opportunity presented by using a new form of branch agreement – one dedicated to SMEs – as a means to manage low SME capacity (a regional challenge) and improve SME sustainability.

Energy audits are an essential component of Easy Green, giving SMEs information on how to harness the low-carbon transition for economic and environmental gains. Undergoing energy audits and obtaining information on how to invest in renewable energy can lower SME carbon and greenhouse gas emissions and increase resilience, thereby also contributing to the region's sustainability

Source: Wallonia (2018, unpublished), *Novalia: Financial Instrument for Innovation and Energy Transition in Wallonia*. PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Low-Carbon Energy Transition, 14-15 May, 2018, Brussels, Belgium.

Multi-level governance: a critical component of the low carbon discussion

100. Transitioning to a low-carbon economy presents a set of complex governance challenges for policy makers. One of these is a capacity for policy making in multiple temporalities and a need to balance the long-term strategic dimension with short-term action. In other words, while the transition calls for long-term strategic thinking and policy-making, it also requires an ability to accommodate electoral cycles and the associated desire of governments and other stakeholders to see – as quickly as possible – the results of implemented projects. One common challenge facing this cohort is ensuring their multilevel governance structures and practices can support regional ambitions for a low-carbon transition. These can include ensuring action at a proper or even "improper" scale, balancing long-term strategies and shorter-term priorities, ensuring an enabling environment for change despite some framework conditions being outside of their control, and building stakeholder engagement.

The matter of territorial scale and capacity

101. Acting and investing at the relevant territorial scale is a challenge for some governments in the cohort. For example, in North Middle Sweden, tests for the electric highway have been promising, yet the issues of scale and capacity were identified as potential challenges. At the same time, small scales can also be seen as an opportunity to support small and/or remote public administrations, which may face similar issues as SMEs regarding the low-carbon transition – i.e. limited resources, limited access to credit, and limited attractiveness to the private sector as investment partners. Targeting support to these municipalities can open up opportunities associated with creating sustainable and low-emission municipalities. In Piemonte, the large number of small public administrations in the territory combined with the poor construction quality of public buildings generates a huge potential for energy efficiency gains. This potential is harnessed by the region's Together 2020 project that specifically targets small public administrations (Box 3.5).

Box 3.5. Supporting energy efficiency in Piemonte's small public administrations: Together 2020

Together 2020 is an investment programme based on Public Private Partnerships and Third Party Investment (TPI) to increase the energy efficiency of public buildings and institutions in Piemonte's small public administrations.

Bringing a low-carbon approach to smaller municipalities was a challenge for the regional government. A lack of financial resources at the local authority level hindered municipal authorities from undertaking infrastructure investments that could increase the energy efficiency of public buildings and in turn save them money. On the public market, time-to-tender was significant due to the need for high quality energy auditing work, and there was difficulty in keeping a strong level of commitment in small public municipalities. The relative lack of interest among companies in the call for tender by small municipalities was another challenge, driven by municipal size and a perceived lack of critical mass.

Thus far, the programme has been successful: 18 small municipalities have been involved, 50 public buildings have undergone energy auditing, and, without drawing on the public budget, energy-saving investments were have resulted in a 12% decrease in energy consumption

Source: Piemonte Region (2018, unpublished), *Workshop "Low carbon energy transiton"*. PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Low-Carbon Energy Transition, 14-15 May, 2018, Brussels, Belgium

Taking a strategic approach and aligning actors

102. Several cohort participants described policies in which managing the challenges in the low-carbon transition came with the opportunity to improve the region's sustainability in the long term. One example comes from Piemonte, with a planned initiative to create a Bioeconomy Technology Platform. The platform is targeted to promote large and strategic R&D projects in the circular economy, particularly focusing on the priority sectors of Green Chemistry/Clean Tech and Agrifood. The aim is to set the basis for developing the region's bio-economy in the long-term. Hauts-de-France's REV3 initiative is part of its larger regional development strategy, and focuses on lowering carbon emissions, creating jobs, and bringing stakeholders together to create a regional identity anchored in renewable energies (Box 3.6). It is a very good example of how low-carbon goals can be embedded in broader regional development strategies and objectives. Some regions find themselves lagging in strategic positioning relative to other regions or to the national level, and specific policies are needed to build greater competitiveness while also managing short-term structural changes. Thus, can also become a strategy to drive the low-carbon transition. Hauts-de-France is tackling this issue directly in its *Industrie du Futur* initiative by aiding 7 000 enterprises which show potential for international competition reach this new playing field (Hauts-de-France, 2018a).

Box 3.6. Good practice in Hauts-de-France: REV3

REV 3, standing for the third industrial revolution, part of the Hauts-de-France regional development strategy. It aims to integrate the energy transition, the digital revolution and new economic models in order to decarbonise the region's economy by 2050, create jobs, boost local innovation, and mobilise civil society, territories, enterprises, academia, as well as institutional actors. The goal is to make the third industrial revolution process part of the region's identity and improve the region's long-term sustainability.

REV 3 mobilises several initiatives that were launched as early as the early 2000s, including research-oriented clusters such as MEDEE (*Maîtrise Énergétique des Entraînements Electriques*), competitiveness clusters such as *Industries Agro Res*sources, and poles d'excellence such *Energie 2020* and the *Centre de Développement des Eco-Entreprises*. As part of the regional development strategy REV 3 is embedded in regional plans and schemas, which is very important in order to ensure regional policy coherence.

Source: Hauts-de-France Region (2018, unpublished), *Hauts-de-France region*. PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Low-Carbon Energy Transition, 14-15 May, 2018, Brussels, Belgium

103. Another strategy to advance the low-carbon transition is to refashion or adapt existing initiatives to suit the transition's needs and goals. Several regions consider existing initiatives, industries, and/or technologies as assets and opportunities to build upon as a means to facilitate and drive the low-carbon transition. Piedmont's planned biotechnology platform would draw on the regional presence of leading companies both in the field of green chemistry and agri-food to build on and expand existing expertise (Piemonte, 2018a). Wallonia's branch agreements for SMEs builds on a successful initiative that already exists in order to benefit new stakeholders. Voluntary branch agreements for industries have successfully led to a measurable reduction in emissions (Wallonia, 2018a). However, they are not adapted to the specific needs of SMEs. Using this successful initiative as a platform and adapting it to the specific needs of key stakeholders, in this case SMEs, is an opportunity to use previously acquired expertise and include a broader range of actors in the low-carbon transition. In Saxony, existing structures such as the Saxon Energy Agency (SAENA) are being mobilised to move towards new goals in reducing emissions (Freistaat Sachsen, 2018).

Coordinating actors and ensuring sustained commitment

104. Building cooperation among a diverse set of actors is one of the keys to a successful low-carbon transition, as it can help identify and align priorities and focus effort across sectors and among diverse groups, such as civil society, industry, SMEs, banks, academia and different levels of government. Many initiatives tackle the challenge of coordinating diverse stakeholders and ensuring their collaboration. Hauts-de-France, with REV3, identified this challenge as one of their key issues. Similar challenges are observed in Piedmont's Energy Centre, which aims to foster collaboration between industry, research and government, in Wallonia, and in Saxony where efforts are underway to include the private sector in the transition (Box 3.7)

Box 3.7. Engaging different stakeholders for sustainable energy development in Saxony

The energy technology cluster Energy Saxony includes 68 actors from industry, research and government. It combines their competences and expertise to drive the sustainable development and commercialisation of new technologies in the energy, electro-mobility and digitalisation sectors. Financed in equal parts by the state of Saxony and industry, the cluster seeks to answer diverse issues arising from the low-carbon transition. These include the sourcing of hydrogen, building value chains from wind and solar energy to green hydrogen, as well as technical questions such as planning train lines that run on green hydrogen, and how to replace fossil fuels in the agricultural sector. Currently, one of Saxony's the largest projects concerning the low-carbon transition is the shift from fossil fuels to hydrogen for energy production. The high density of research institutes and larger corporations in the region is an asset that this cluster seeks to harness for the transition.

Source: Freistaat Sachsen (2018, unpublished), *Low-Carbon Energy Transition: A Saxon Perspective*. PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Low-Carbon Energy Transition, 14-15 May 2018, Brussels, Belgium

105. While coordinating diverse stakeholders and their interests is generally challenging, and especially in an area as potentially sensitive as climate matters, it can represent an opportunity to identify and develop joint solutions and build consensus. Many projects presented by the regions highlight such opportunities, often bringing together actors form the public, private and research centres – the case, for example, with Piedmont's Energy

Centre and Saxony's energy technology cluster (Piemonte, 2018b; Freistaat Sachsen, 2018). Some consideration may need to be given to ensuring that diverse actors, even within these groups, form part of the mix, for example SMEs, technical training institutes, incubators, etc.

106. The low-carbon transition will require sustained commitment by all stakeholders involved. The importance of creating long-term strategies was already introduced, and this aspect is fundamental if economies are to profoundly change. The challenge of creating a sustained commitment and interest among different actors and politicians was voiced by several regions. Hauts-de-France's REV 3 concept is ambitious in its vision and necessitates a long-term commitment beyond electoral cycles, a factor that can elevate it to a marker of regional identity (Hauts-de-France, 2018b). Piedmont faces different challenges stemming from the lack of interest by the private sector – a factor it is addressing through its Together 2020 programme for small public administrations (Piemonte Region, 2018).

Ensuring an enabling environment

107. To ensure a fair low-carbon transition, policies targeting carbon emissions must align with a broader policy framework given the ubiquity of fossil fuels. Mapping how various sectors and their policies that can support or hamper the attainment of low-carbon goals is one possible mechanism to accomplish this. For example, fossil fuel subsidies, and regulations on investment like Basel III, can impede granting the long-term loans necessary for investment in low-carbon infrastructure. Most policies standing in the way of effective climate policies are those that hamper growth more generally (OECD, 2018d). Tax rebates for innovation can be an example of this, as they often favour established companies with large revenues, but may overlook small companies and start-ups where radical innovation can occur. A lack of flexibility in labour markets is also a barrier for the low-carbon transition, as it may prevent governments from taking action to move away from industries based on fossil fuels and coal. It is crucial, therefore, to re-evaluate the framework conditions that directly and indirectly relate to low-carbon policies, and restructure the conditions so that an enabling environment for low-carbon energy transition is established.

108. The role and interests of governments in supporting fossil fuel activities should also be considered as many are strongly tied to fossil fuel economies through royalties, taxes, and other revenues linked to fossil fuel intensive development[11]. This financial interest can be a large barrier unless the revenue stream is compensated. Other barriers to climate action are stranded assets and heavy industry. Losses incurred through stranded assets or facilities such as coal plants that will have to be retired before the end of their economic lifespan, are a large disincentive to a low-carbon transition. Transitioning heavy industry to align with the low-carbon objectives will likewise incur costs for government and the private sector, and calls for elaborating new business models.

109. The cohort agreed that framework conditions – often outside of their control, though not always outside of their capacity to influence – can stymie innovative approaches for low-carbon transition. In Slovenia, for example, framework conditions can impede investing in new priorities, a challenge that confronts the country's Entrepreneurial Discovery Programme (Box 3.8).

[11] As a percentage of total government revenue, dependence on fossil fuel rents has increased to an average of almost 7% in G20 countries, and 9.9% worldwide (OECD, 2017a).

Box 3.8. Designing major pilot transformative projects through continuous EDP in Slovenia

In Slovenia, efforts toward a low-carbon transition have partially centred on the concept of the Entrepreneurial Discovery Process (EDP). This refers to the systematic discovery and pursuit of emergent RDI investment priorities. The global outlook on this process revolves around a smart specialisation strategy with nine clusters, and targets the development of pilots, international partnerships, and financing.

Current initiatives include investment in broadband infrastructure and a Smart Grid for "prosumer-centric" energy supply, in which citizens can become energy producers and consumers. Smart mobility platforms are also being developed, and new regulation has been adopted to enable frequencies for research, development and experimentation.

Source: Slovenia (2018, unpublished), *Slovenia Peer learning in industrial transition regions; low carbon energy transition.* PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Low-Carbon Energy Transition, 14-15 May, 2018, Brussels, Belgium.

110. Of particular concern within the cohort were procurement rules. While procurement guidelines are meant to foster a competitive environment, they often focus strictly on cost, without encouraging or supporting broader policy objectives such as innovation or sustainability. In North Middle Sweden, municipalities have found that regulations around public service procurement can be antithetical to sustainable development, as they can dissuade actors from choosing local options. Public funds are a powerful tool and procurement can be used as a mechanism to engender change and encourage low-carbon options. While procurement guidelines may be set at a national level, regions may have a margin to use their purchasing power in a way that upholds regional and local objectives and benefits local goods, services and practices. This is the idea behind North Middle Sweden's initiative to deliver locally-sourced food to the elderly, with one result being lower emissions from transport (Box 3.9). In Piedmont, Together 2020 is using a model based on procurement to increase the energy efficiency of public buildings.

Box 3.9. Sustainable procurement for food delivery to the elderly in North Middle Sweden

North Middle Sweden has started using procurement as a tool to promote changes in the meal-situation of the elderly. A project-based initiative was launched in four different municipalities. In all cases, the model developed was based on cross-disciplinary knowledge and a holistic and collaborative approach, where the real needs of each involved actor is first assessed. This insight then formed the basis of a procurement process for meal-solutions for the elderly.

From the outset, a set of goals were established for each of the municipalities. Specifically, to:

- Create added-value and quality of life for the end-users
- Create new products and services that open up possibilities for new actors to participate, or to open up new directions for established stakeholders
- Not be more expensive for the procuring stakeholder, from a holistic perspective
- Be compatible with current legislation

Despite the somewhat different needs of each municipality, the results of the process revealed less waste, decreased transport, increased engagement, and an improved quality of life for both the elderly and personnel, for instance through increased outdoor activity, enhanced appetite, and a stronger sense of community.

North Middle Sweden found that it is possible to identify and implement solutions that are fundamentally new and not necessarily more costly for municipalities. Success, however, can rest on a procurement procedure developed by a cross-disciplinary group that is aware of the diverse effects and clear on the desired outcomes, and when the procedure is based on knowledge about the real needs of the end-users

Source: Innovationsupphandling X – med focus på äldres måltidssituation (Innovation procurement X – with focus on the meal-situation for the elderly), http://www.innovationx.se/dokumentation.php

Stakeholder engagement: mobilising and encouraging stakeholders to participate

111. Inclusiveness is a one key to a just low-carbon transition. In regions that rely heavily on the coal and fossil fuel industries for their economic production, traditional activities may be lost in the short term, and conditions should be created that make it smoother for workers to transition to new jobs. Including civil society in the process can alleviate misinformation and ensure that everyone is aware of the economic and environmental benefits of the transition.

Creating incentives for enterprise and communicating information

112. In the current climate, and without any external incentives, the expected drawbacks of a low carbon transition can discourage engagement in the process. Policy makers at all levels of government are faced with navigating an environment that has few incentives for actors to engage in the low-carbon transition. Wallonia has grappled with the challenge of limited incentives in its policies to advance the low-carbon transition. Limited incentives to take part in the low-carbon transition and invest in renewable energies exist for SMEs as well, which may lack the expertise needed to fully realise the economic potential that the environmentally-friendly, low-carbon transition brings with it. Targeting specific actors in the transition is as important as creating a broad consensus among stakeholders. Creating support schemes or initiatives for the private sector, and in particular SMEs, can become an opportunity to overcome challenges of asymmetric information regarding the long-term benefits of the transition. Projects and initiatives such as Piedmont's Biotechnology platform and Wallonia's Easy Green project (Box 3.4) use the potential of SMEs to further the low-carbon transition. The capacity of governments to inform stakeholders of the benefits of transitioning to low-carbon pathways and the risks they face if they do nothing is essential for inspiring civil society, industry, and other actors to move on climate action. In Wallonia, the challenge of communicating benefits of taking part in the low-carbon transition to enterprises has been front and centre in its Easy Green Programme.

Conclusions and an initial overview of policy responses

113. In the face of climate change and the severe economic disruptions it appears to bring, the development of low-carbon pathways is of utmost importance for long term, sustainable regional growth and development. The long-term benefits of the low-carbon energy transition will offset the short-term structural changes and the large social and economic costs faced by regions in transition. Nonetheless, these short-term changes must

be identified and prioritised by policy makers in order to ensure a fair transition for all stakeholders. Active labour market policies, targeted carbon policies, structural reforms and innovative policy making will be the keys to transitioning to low-carbon economies without leaving anyone behind. As regions face challenges and create new opportunities to benefit from the low-carbon energy transition, special attention should be paid to infrastructure, where regions and other subnational governments play a large role in determining investment. Financing will continue to be a main challenge in this transition, so creating innovative ways of financing low-carbon developments and of thinking about tax bases will play an integral role in the transition.

Table 3.1. Potential policy responses and implementation mechanisms for preparing for the low carbon transition

Policy challenge	Objective (Strategic/Policy)	Possible policy response	Potential implementation mechanism	Rational/additional benefits
Balance the long-term strategic dimensions of a low-carbon transition with short-term action	Reconcile a long-term low-carbon transition with short-term priorities	Support existing low-carbon initiatives and firms (to fulfil their potential as international competitive players)	Financial and strategic support schemes	Strengthens the existing innovative eco-system, and internationalises companies
			Strategic cluster- and collaboration-policies	
		Encourage the creation of new low-carbon initiatives, R&D projects, and firms	Financial support mechanisms (e.g. venture capital, green bonds)	Creates an attractive innovation eco-system
			Strategic advice from think tanks or working groups	Cross-industry innovation
		Create new low-carbon markets for renewable energies, green transport systems, and low-carbon infrastructure		Creates new business opportunities
				Improves infrastructure
Address the short-term costs of a transition to a low-carbon economy (e.g. inequalities, unemployment)	Ensure a fair and inclusive low-carbon transition	Support communities and assets put at risk by a low-carbon transition	Forecasts, monitoring and evaluation systems, and/or impact assessments	Mitigate social and economic risks; Builds evidence bases and informs long-term policy
		Support mining- and fossil fuel-sector workers with specific 'green jobs' training and upskilling programs	Training schemes	Workers gain specialised competencies needed by firms
		Support lagging regions in the low-carbon positioning	Partnerships between strategic and lagging regions	Ensures access to the low-carbon transition
		Regenerate/reconvert the physical landscape of the mining and fossil fuel sectors into tourist attractions	Government and/or private funding	Generates tourism revenue for the region
		Provide green space in high density, urban low-income neighbourhoods to create a 'cooling effect'	Government and/or private funding	Better quality of life, and health benefits

	Protect low-income households (i.e. those disproportionately and/or negatively affected by a low-carbon transition)	Support low-income households through active labour policies	Social protection, income support, reallocation to other sectors, early retirement schemes, tax schemes	
		Support low-income households through low-carbon-derived financial mechanisms	Recycle carbon taxes, redistribute congestion charges, donate profits earned by public buildings that sell saved green energy	
Limited investment capacity of SMEs and of small-scale public administrations	Ensure an even low-carbon transition across larger and smaller firms/public administrations	Support SMEs with low-carbon R&D investment	Strategic advice and information through energy audits	Generates business opportunities for SMEs
			Loans, tax benefits for energy efficiency, financial incentives to invest in low-carbon technologies	Generates energy savings for local public administrations
Coordinate a low-carbon transition at different levels of government	Ensure an enabling environment	Map targets and investment priorities for the progressive decarbonisation of the economy	Long-term strategies and plans	Increases efficiency in the long-term
		Foster the cooperation of different stakeholders at different levels (different levels of government, SMEs, banks, academia)	Strategic cluster policies, *pôles d'excellence*, dialogue platforms	
		Mobilise civil society through communication campaigns, conferences, forums	e.g. Projects for schools	Fosters stakeholder engagement
		Implement incentives and market-based mechanisms to reduce carbon emissions	e.g. Restrictions on diesel and/or older vehicles, price on CO_2 emissions,	

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Chapter 4 Promoting Entrepreneurship and Mobilising the Private Sector

Introduction

114. Entrepreneurship can play a large in regional economic development through its potential to disrupt, innovate and promote growth, with entrepreneurial SMEs and start-ups acting as drivers of technological innovation, employment growth, and productivity (OECD, 2018a). New businesses and SMEs support innovation in crucial ways. New firm entry and SME scale ups contribute to increasing the aggregate productivity of an economy by displacing firms with lower productivity and by competing with incumbent enterprises (OECD, 2010). They also play a role in commercialising knowledge and contributing to breakthrough innovations.

115. Entrepreneurs are key actors in provoking economic change and development since their innovations disturb the prevailing market equilibrium and thus challenge existing economic structures (Schumpeter, 1934). However, careful attention should be paid to how the concept of entrepreneur is defined. Confusing the opening of businesses with entrepreneurialism ought to be avoided. Less than 30% of businesses have an entrepreneurial element to their product or service. New businesses entering local services sectors such as retail or hospitality promote high firm churn but do not make an aggregate contribution to productivity growth (OECD, 2018a). Therefore, it is important to understand entrepreneurship as linked to innovation: unsatisfied with the *status quo* and compelled to improve it, the entrepreneur continuously innovates, improves, and grows their business.

116. This chapter identifies and explains key areas that contribute to developing entrepreneurship at a regional level. It highlights the experiences and initiatives of the cohort participants with respect to this topic, offering insight into diverse initiatives underway, and closing with potentially relevant policy tools to support regions build their entrepreneurial environment.

OECD insight on promoting entrepreneurship and the experience of Cohort 1 regions

117. The workshop highlighted the strong regional dimension in building entrepreneurship and the pivotal role that regional governments can play in its development and sustainability. There are however, a number of factors that need to be kept in mind, including the entrepreneur's access to financing and skills, generating collaboration and networks, and ensuring an enabling environment. Much of this is also captured in an OECD framework highlighting areas for regional intervention presented here.

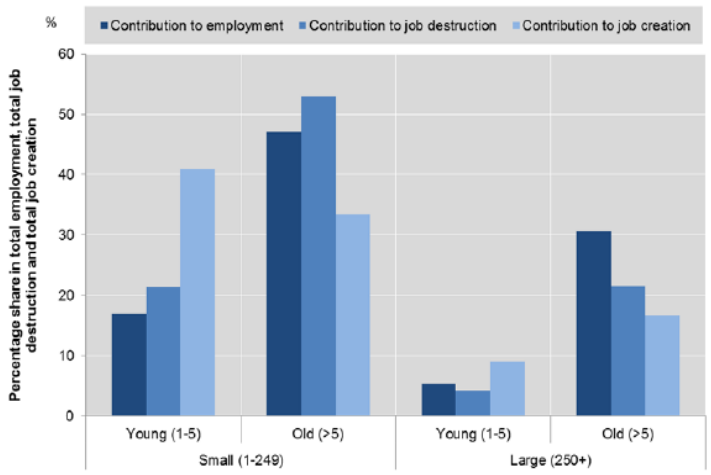
A highly prominent regional dimension to entrepreneurship

118. Regional governments are well-positioned to create and help sustain an environment that is conducive to entrepreneurial activity. Entrepreneurial environments will vary by place, as will the challenges and opportunities associated with promoting entrepreneurship. Thus, when designing policies to generate or support entrepreneurship, taking the regional context into consideration is fundamental, and a factor behind policy success. Subnational authorities have a clear understanding of their area's needs, challenges, and capacities, and are generally better placed to define a contextually appropriate vision for

how entrepreneurship can fit into their regional development ambitions. They can also better take into consideration the region's strengths, opportunities and weaknesses; gather and analyse data for stronger evidence-based policy making; develop a regionally-specific strategy that helps capitalise on opportunities and realise the vision over time; tailor policies and programmes to overcome weaknesses and take advantage of strengths to nurture the entrepreneurial environment; and set appropriate objectives and targets to help support performance measurement. Furthermore, regional authorities can enhance the knowledge transfer between research and industry to encourage spillovers and promote entrepreneurship.

119. Promoting entrepreneurship can help regions in industrial transition benefit from the new economic activity generated by locally-housed, innovative start-up and scale-up enterprises. These firms can compensate for a decline in traditional industrial activities and stimulate the emergence of new regional growth paths (OECD, 2018a). They can also help create jobs and/or generate employment (Figure 4.1).

Figure 4.1. Employment, job creation and job destruction by firm age and size



Source: Criscuolo, C., P. Gal and C. Menon (2014), "The Dynamics of Employment Growth: New Evidence from 18 Countries", OECD Science, Technology and Industry Policy Papers, No. 14, OECD Publishing, Paris. http://dx.doi.org/10.1787/5jz417hj6hg6-en.

120. The success of a regional approach to building entrepreneurship, its challenges and the opportunities it offers is illustrated by Ben Franklin Partners. The state of Pennsylvania, with its significant history of steelmaking and manufacturing, been undergoing a period of industrial transition, in which entrepreneurship is helping increase job creation and productivity. Recognising the untapped potential of entrepreneurship in the state, the economic development programme Ben Franklin Technology Partners demonstrates remarkable results in supporting regional entrepreneurs (Box 4.1).

Box 4.1. Taking a strong regional approach in Pennsylvania, US: Ben Franklin Technology Partners

Ben Franklin Technology Partners is a technology-based economic development programme in Pennsylvania, US. Launched in 1983, the programme was originally designed as a grant-giving institution to help commercialise research. Today, it consists of

four regional bodies that link young companies with funding, expertise, universities and other resources to fill gaps in the entrepreneurial system that may otherwise discourage entrepreneurialism. Ben Franklin Technology Partners helps young firms in a variety of ways: by making them more attractive to different kinds of investors, providing incubator space, creating networks with colleges and universities, and helping to develop and commercialise products. The programme is funded by the state of Pennsylvania, and while it is accountable to the state government, it is completely independent in its funding decisions. The majority (51%) of its board members must be from the private sector in order to avoid bringing a political dimension into investment decisions. The programme concentrates its support to young enterprises in three main areas: capital, networks, and knowledge. In addition to providing entrepreneurs and young firms with capital, the programme's experts and mentors provide specialised support in marketing and other areas. The impact of the programme has been striking. In 2017, there were 1 900 jobs created and 189 new companies formed thanks to Ben Franklin Technology Partners. Furthermore, third party evaluation has shown that for every USD 1 invested into the programme, there is a return of an additional USD 3.60 in state tax revenues.

The programme's success is owed to several key lessons learned throughout its decades-long existence. These include:

- *Regionalisation is crucial*. Initiatives should encourage local decision making and allow regions to act autonomously in order to respond to their specific challenges and opportunities.
- *Politically motivated investment decisions should be avoided*.
- *Entrepreneurship is hard*. It is estimated that 50% of start-ups will fail within their first five years.
- *A holistic approach to investment is essential*. It does not suffice to invest in either capital or mentoring services- instead, young firms must be provided with access to a broader network, mentoring, and capital in order to help them grow.
- *The entrepreneurial environment plays a large role in encouraging entrepreneurship*. The culture surrounding entrepreneurship can act either as a "bonus" or a "tax".
- *It is beneficial for initiatives such as Ben Franklin Technology Partners to focus on high growth enterprises*, as they can provide the most employment, growth and return on investment.
- *Industries, technologies, and generations change*. Initiatives promoting entrepreneurship must be as innovative as their clients.

Source: Glenn, Ryan (2018, unpublished), Entrepreneurship: An Economic Development Strategy. PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Promoting Entrepreneurship and Mobilising the Private Sector, 7-8 June, 2018, Turin, Italy.

The question of "related variety"

121. The regional context is particularly important when considering the issue of "related variety". There has been an ongoing debate over the growth potential associated with local sectoral diversification versus regional specialisation. This debate eventually gave way to a line of argumentation that suggests that the relationships between specialisation and

diversification are much more subtle, especially regarding start-up and scale-up activities. This argument – the 'related variety' argument (Frenken, 2008) – posits that regions develop more strongly if new entrepreneurial ventures are in sectors, activities or technologies in which the region already has strong competences and capabilities. A planned initiative in North Middle Sweden that builds on the existing forestry industry illustrates this concept (Box 4.1).

Box 4.2. Forest Industry Innovation Ecosystem in North Middle Sweden

Building on existing industrial activity to promote innovative practices

North Middle Sweden's planned initiative for a Forest Industry Innovation Ecosystem intends to become a leading enterprise and industry hub for the commercialisation of new technology and businesses in a series of value chains, including in those of pulp and paper, bio replacement in fossil value chains, and consumer products made from wood-based raw materials.

The region is already a centre for the classic forest industry, with a large number of production facilities, such as pulp and paper mills, machinery manufacturers and service providers. With the transition towards low-carbon economies and the decline in employment within the industry, the region is looking to the future and creating new links between research and industry in order to support innovation in entrepreneurial activity associated with the forestry sector and secure regional wealth

Source: North Middle Sweden (2018a, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template, Forest Industry Innovation Ecosystem. Prepared for the Peer Learning in Industrial Transition Regions Workshop: Promoting entrepreneurship and mobilising the private sector, 7-8 June, 2018, Torino, Italy

122. At the heart of the matter is an issue of knowledge transferability and the ability of firms, sectors and regions to build on existing knowledge resources as well as exploit new knowledge and information sources. The ability to build on and exploit different fields of knowledge and information depends on how far apart these knowledge arenas are. If new entrepreneurial actions are in knowledge and technology fields that are close to the existing knowledge and skills competences of the region, then the likelihood of success or longevity of the entrepreneurial action tends to increase. Conversely, if the new entrepreneurial actions involve major leaps between largely unrelated fields of knowledge or technology then the likelihood of success or longevity falls significantly (OECD, 2018b).

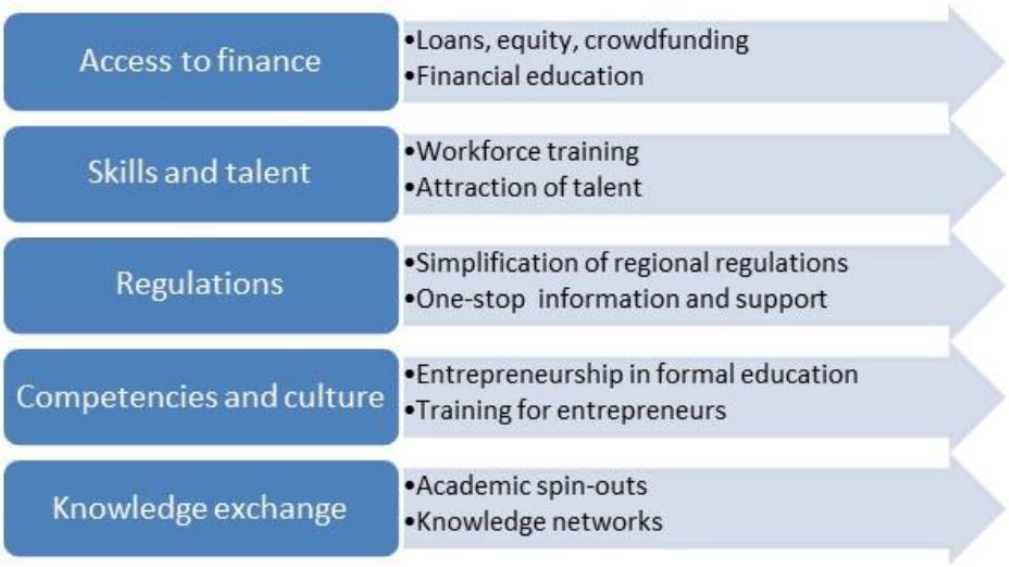
A framework for designing and implementing entrepreneurship policy

123. Fostering and sustaining entrepreneurship is a multi-faceted and cross-sector endeavour. It brings together diverse but related policy areas such as innovation and industrial policy and skills and education policy. It also requires effective multi-level governance practices, for example with respect to ensuring an enabling environment, supporting access to finance, and creating links to regional development policy.

124. Key areas for regional intervention aimed at promoting and strengthening entrepreneurship include access to finance, skills and talent, regulations, competencies and culture, and knowledge exchange (Figure 4.2). Each of these areas may require its own type of policy or programming intervention, and thus one point for regional policy makers to

consider is how these different areas interact and how to ensure policy and programming coherence among the various dimensions.

Figure 4.2. Key areas for regional intervention



Source: OECD (2018b, unpublished), "Promoting Entrepreneurship and Mobilising the Private Sector", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Promoting Entrepreneurship and Mobilising the Private Sector, presented by Jonathan Potter 7-8 June, 2018, Turin, Italy.

125. Three main functions for regions can be extrapolated from these five potential areas of intervention.

1. An *intelligence function*: In order for regional-level entrepreneurship policies to be successful there needs to be a clear sense and vision of the nature of the challenges and opportunities the region faces in stimulating entrepreneurship. Regions can thus play a role in economic visioning and defining smart specialisation.
2. A *support function:* Regions have play pivotal role in building and strengthening the local entrepreneurship system in order to support burgeoning enterprises and start-ups, as well as SMEs.
3. A *linkage function:* The key role of networks in enhancing knowledge spill-overs between research and industry can be enhanced by regions to promote innovative entrepreneurship

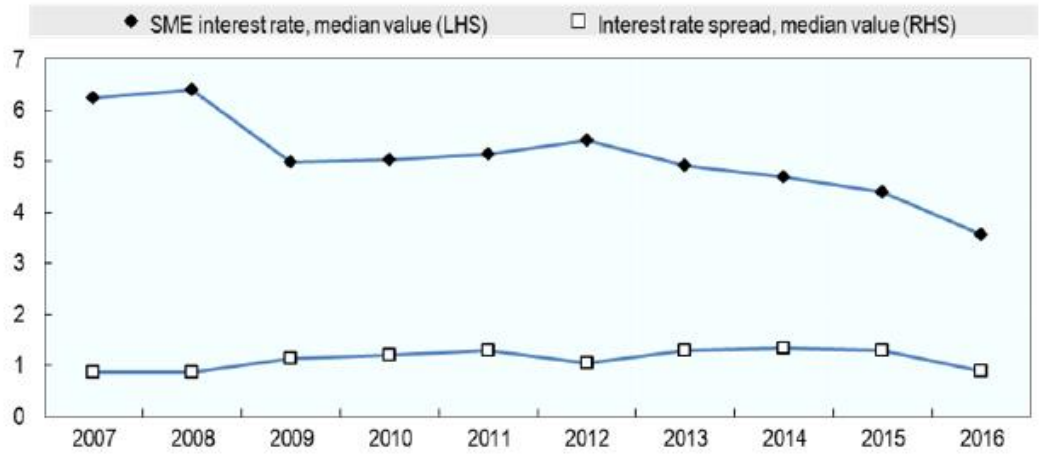
126. The specific experiences of workshop participants in promoting entrepreneurship and mobilising the private sector highlight both the breadth of challenges faced and the variety of opportunities available to encourage growth.

Access to finance

127. Access to finance is critical for all companies, and represents a particular challenge for entrepreneurs. New and small enterprises often face higher credit constraints than large ones due to higher risk profiles, low levels of collateral and limited credit history (OECD, 2018a). Among these companies, high-growth start-ups and scale-ups are disproportionally affected by credit constraints as their business models may rely on intangible assets or be

unable to provide credit histories (OECD, 2018a; OECD 2015). Despite a considerable decline in interest rates, there remains a large difference in interest rates charged to SMEs and large firms (Figure 4.3). In 2016, this difference was almost 33% across OECD countries, reflecting the fact that banks consider lending to SMEs riskier (OECD, 2018a). Non-bank finance for SMEs is also limited, making small businesses heavily reliant on straight debt – not always the most appropriate way to finance innovative start-ups or scale-ups, which often may have irregular initial cash flows and limited collateral to offer (OECD, 2018a).

Figure 4.3. Interest rate spreads between loans to SMEs and to large enterprises, 2007-15

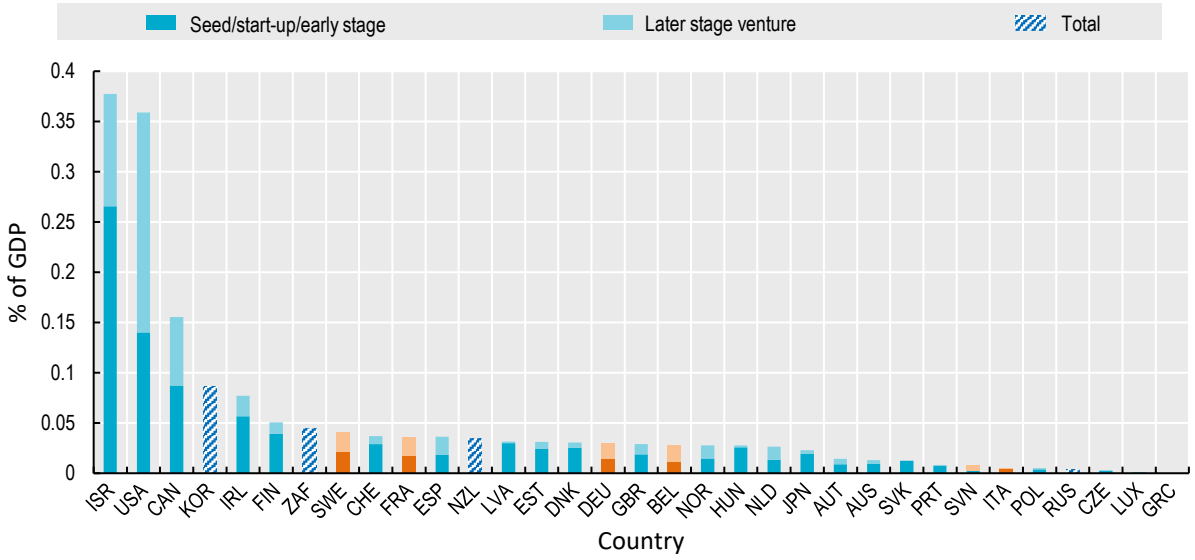


Source: Data compiled from the individual country profiles of Financing SMEs and Entrepreneurs 2017. (OECD, 2017a).

128. Regional governments can play an important role in helping facilitate access to financing for innovative start-ups and scale ups. Regional interventions are possible in a number of areas, such as the establishment of business angel networks and microfinance projects. In addition, regions can facilitate the development of alternative sources of finance such as crowdfunding or venture capital investments. Stimulating equity investment through co-investment funds (public and private sector) that can address finance gaps along the various stages of venture development can also prove useful – a mechanism successfully adopted in Scotland with the Scottish Co-investment Fund (SCF) (OECD, 2018a). While such support schemes should support the private market in the provision of credit, they should take care not to crowd out the private sector. Furthermore, helping start-ups and scale-ups to develop their business planning and financial management skills makes them more attractive clients to financial service providers.

129. Many cohort participants identified financing as a large challenge in promoting entrepreneurship. They see a high dependence on debt-based instruments among their SMEs, and limited access to venture capital, which accounts for a small percentage of GDP across OECD countries (Figure 4.4). Many of the initiatives for supporting entrepreneurship are linked to helping entrepreneurs secure financing.

Figure 4.4. Venture capital investments by country



Note: Cohort countries are represented in orange.
Source: OECD (2017d), Entrepreneurship at a Glance 2017, OECD Publishing, Paris http://dx.doi.org/10.1787/entrepreneur_aag-2017-en.

130. Participants agreed that new financing strategies and paths that help connect funding with companies are one way to improve entrepreneurship conditions. In Saxony, a public-private venture capital fund is seeking to provide innovative start-ups and scale-ups with funding (Box 4.2), as is the INVEST'INNOV initiative in Hauts-de-France.

Box 4.3. The TGFS venture capital fund in Saxony

Using state and private capital to invest in young firms and start-ups

TGFS is a venture capital fund that uses both private and public funding in order to support innovative start-ups. The fund's investors are the region of Saxony, regional saving banks, and two regional investment companies. The programme offers an alternative to debt-based funding methods by providing fully liable equity. Innovative young firms may receive between EUR 100 000 and EUR 5 million, generally granted in stages. TGFS invests as a minority stakeholder, a silent partner or through subordinated loans. Companies are expected to exit the fund after three to six years.

Thus far, 56 investments have been made, with 459 jobs created and a financial leverage effect of EUR 53 million. Regional capital investment companies manage the fund and invest in Saxon SMEs that are active in emerging high-tech and innovative industries.

Source: Saxony (2018, unpublished), TGFS: The Venture Capital Funds for Saxony. PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: Promoting Entrepreneurship and Mobilising the Private Sector, 7-8 June, 2018, Torino, Italy.

Access to skills, knowledge and networks

131. Innovative start-ups and scale ups need to attract and retain talent in order to continue growing and innovating. Academic studies suggest that certain types of skills are particularly relevant for increasing firm performance and innovation. These include cognitive skills but also soft skills related to communication, creativity, problem-solving and interpersonal interaction (OECD, 2018a). Skills related to Information and Communication Technologies (ICT) are also increasingly important for growing firm competitiveness and innovation (Bharadwaj, 2000; Santhanam and Hartono, n.d.).

132. Compared to large firms, small firms tend to depend more on regional labour markets for the skills they need and for providing workforce training (OECD, 2018a). Several types of policy instruments that can support workforce development for start-up and scale-up enterprises. These include providing information and guidance, training design and training voucher schemes, tax incentives, direct training subsidies to smaller firms and the right to training-leave. These types of initiatives can often be more effectively and efficiently delivered to networks of SMEs, for example those participating in clusters. Involving small firms in the planning of regional skills development initiatives is also effective. For example, engaging with regional employer councils in the co-design and delivery of training initiatives with vocational and training colleges, universities and large firms can better target training, involve diverse perspectives, and build networks (OECD, 2018a).

133. The cohort raised several key issues regarding the skills and talent needed to support start-ups and scale-ups. One of these is a region's ability to attract highly talented individuals with a high propensity to entrepreneurship. This is often linked to the region's ability to offer an attractive residential and working environment. Another is difficulty imbuing their population with entrepreneurial skill. There is also a reverse issue: keeping entrepreneurial skill and its innovation in the region once it is developed. The risk of entrepreneurial "flight" is can be high, and ultimately does not contribute to the region's growth. There are different views and practices on how to manage this issue. Ben Franklin Technology Partners, for example, will take a lean on the intellectual property when providing a grant or other funding, and they have exercised the right more than once. Finally, knowledge generation requires a different skill set than knowledge and product dissemination. Participants underscored the fact that researchers often lack entrepreneurial, managerial and business skills; and that entrepreneurs may lack higher-level management skills. Commercialising the fruits of research often means matching the researcher and their innovations or products with the entrepreneur(s) and/or ensuring the appropriate skills at the higher levels of the business pyramid, for example CEOs, CFOs and CIOs (Box 4.3)

Box 4.4. Support to management of spin-offs, spin-outs and innovative SMEs/ CXO in Wallonia

Wallonia's programme to support the management of innovative start-ups and scale-ups aims to facilitate the hiring of highly qualified, executive-level staff (CEO, CFO, COO, business developers, etc.) in young, innovative companies. The programme finances high-level positions by funding 75% of the position's salary. To qualify, firms must be spin-offs, spin-outs, start-ups, or young innovative companies. The idea is to help these firms acquire the management skills necessary for their development, which can facilitate access to financing. The measure is also open to "orphan projects" – i.e. research projects that have already ended but which can be translated into industrial projects.

The initiative is implemented by SOWALFIN, a regional actor for financing of SMEs, in collaboration with incubators, local stakeholders for SMEs financing, and SRIW, a regional investment company. Between 2010 to 2017, more than 100 projects were supported, with a total programme budget of EUR 11 million

Source: Wallonia (2018, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template, CXO. Prepared for the Peer Learning in Industrial Transition Regions Workshop: Promoting entrepreneurship and mobilising the private sector, 7-8 June, 2018, Torino, Italy

Stakeholder collaboration and networks

134. Entrepreneurship can thrive when networks allow knowledge complementarities to be exploited. However, participants including North Middle Sweden, Saxony and Slovenia highlighted that their regions had not fully harnessed all the potential benefits of stakeholder collaboration and networks. Network failures can include a lack of complementarity between local knowledge exploration and exploitation. Higher education institutions are key providers of new knowledge in a regional economy that can potentially be exploited by entrepreneurs. However, there may be barriers to the spill-overs of that knowledge towards entrepreneurship. Researchers may not be entrepreneurs, and thus the commercialisation of knowledge generated in research institutions can benefit from regional support. Such support can be throughout the entrepreneurial process, namely from the idea generation stage embarking on the venture. In Piemonte, this is accomplished through mentoring from both academic and research support staff, as well as by providing the incubation space where the entrepreneurs can work (Box 4.4).

Box 4.5. Supporting innovative start-ups and spin offs resulting from public research in Piemonte

Piemonte is supporting innovative start-ups and spin-offs with their origins in public research. The initiative is managed by Finpiemonte, a regional development agency and investment firm, and is implemented by university incubators. The aim is to support the creation of new enterprises in three sectors: *i*) knowledge and technology-intensive manufacturing; *ii*) ICT; and *iii*) tourism and culture. The target groups, i.e. potential entrepreneurs, are academic researchers, youth, and/or unemployed people with innovative ideas and a secondary-school diploma.

The programme revolves around four specific services or sub-schemes. First, there are preliminary advisory services to stimulate entrepreneurial attitude and identify promising entrepreneurial ideas. Second, training and tutoring services are available to candidate entrepreneurs to verify the validity of the entrepreneurial idea and to prepare the business plan. Third, ex post consultancy and tutoring services are also available in order to move from business plan to enterprise creation. Lastly, the scheme provides financial support in the first stages of the business creation.

Source: Piemonte (2018, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template. Prepared for the Peer Learning in Industrial Transition Regions Workshop: Promoting entrepreneurship and mobilising the private sector, 7-8 June, 2018, Torino, Italy

135. Entrepreneurs can also be nurtured through networks outside of higher education institutions. Mentorship programmes throughout the entrepreneurial process can support

stakeholder collaboration from knowledge generation to adaptation and commercialisation. This is being adopted by a number of regions, and notably in Slovenia, where the Start:up Slovenia initiative has found success by providing young firms and scale-ups with tailored mentors (Box 4.5).

Box 4.6. Start:up Slovenia

Established in 2014, Start:up Slovenia aims to raise the level of active of entrepreneurial talent by developing networks that encourage company growth on international markets, contribute to higher capital accessibility, and activate various ecosystem stakeholders. The initiative mobilises a network of mentors from various backgrounds to provide entrepreneurs and young firms with tailored advice. Through this personal mentorship, new networks are opened to young firms, helping them grow and fulfil their potential.

The expected outcomes on a yearly basis are:

- Creating a 1 000 new jobs in start-ups
- Connecting at least 50 start-up companies with the most important ecosystem
- Creating or attracting at least 150 start-up companies with global potential

Source: Slovenia (2018, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template, Start:up Slovenia. Prepared for the Peer Learning in Industrial Transition Regions Workshop: Promoting entrepreneurship and mobilising the private sector, 7-8 June, 2018, Torino, Italy

Improving the enabling environment

Along with specific policies aiming to strengthen entrepreneurship, the broader regional or national environment may play a role in enabling or restricting possibilities for entrepreneurship. Areas affecting the entrepreneurial environment include framework regulations and the culture surrounding entrepreneurship.

A friendlier regulatory environment

136. Lengthy and costly company registration procedures are known to be a major business constraint and their impact is most heavily felt by micro and small-sized enterprises (van Stel and Stunnenburg, 2006). They can discourage entrepreneurial activity and act as a significant barrier for new start-ups (Smallbone et al., 2010). For instance, a study has found a negative correlation between barriers to starting a business and the total number of businesses registered as a percentage of the economically active population aged 15-64. The number of registered firms increases as the cost and the number of procedures fall: for every 10 percentage point decrease in entry costs, the total number of businesses registered as a percentage of the economically active population increases by about 1 percentage point (Klapper and Love, 2010). In most countries, the complexity of regulatory procedures remains the main administrative obstacle to start-up. This is largely related to complicated license and permit systems, whereas important progress has been made in the communication and simplification of rules and procedures (OECD 2018a).

137. There are a number of policy approaches that can be adopted at the regional level to reduce the regulatory burden on start-ups. These include regular public consultations with the business sector in order to identify the regulatory requirements firms perceive as burdensome, the introduction of matrices to measure compliance costs with regulations for

small businesses, and the application of regulatory impact analysis (RIA), which is meant to ensure that regulators reduce the burden on SMEs as much as possible (OECD, 2018a). In addition, regional governments can support regulatory improvement with a one-stop service that offers entrepreneurs information about national and regional regulations as well as public support programmes. This can be in the form of a web portal potentially backed up with a call centre. One stop centres work most effectively when co-ordinated with national and local government. Italy's "Single Counters" or *Sportelli Unici* are an example. Operated through cooperative agreements between municipal authorities and local chambers of commerce, they provide all administrative authorisations necessary to either locate and start-up a new business activity, or to expand, innovate, or restructure an existing business activity (OECD, 2018a).

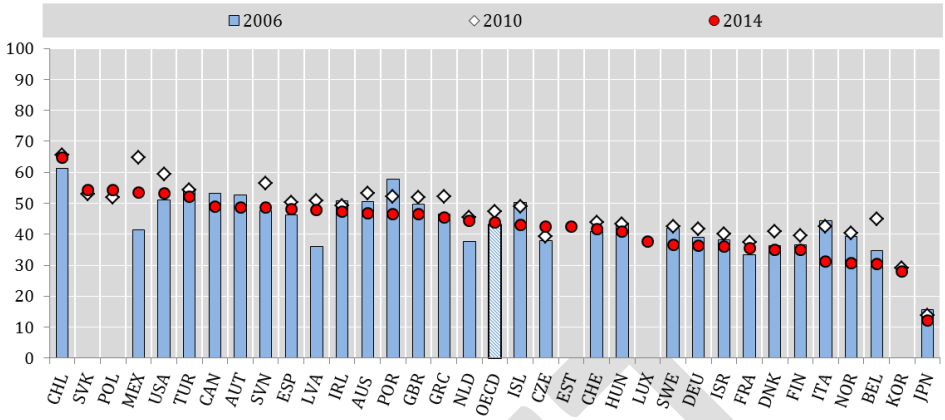
138. Another avenue to improve the regulatory environment for start-ups is the introduction of e-government systems to deliver a variety of services. By adopting information and communications technology (ICT) solutions, national and regional governments can cut transaction costs for entrepreneurs and improve the efficiency of public administration, generating savings on data collection and transmission, provision of information and communication with businesses, and enhanced government information.

139. Some regions expressed that certain national or regional level regulations and EU-level instituted rules, for example for funding, can inhibit the region's ability to properly support entrepreneurial SMEs and start-ups. This was especially apparent when contrasted to Ben Franklin Technology Partners in Philadelphia, which receives state funds, but remains independent in its funding decisions. Because the allocation of some funds (e.g., EU structural funds) depends on a firm's proven stability for five years, young firms have difficulty qualifying. Adjusting regulations can be an opportunity to support entrepreneurship, seen in Wallonia with its effort to reform funding for research, development and innovation (RDI). By changing framework regulations, Wallonia is hoping to ensure a better policy mix to support entrepreneurs.

Entrepreneurship culture

140. Weak entrepreneurial culture can manifest itself through a low presence of start-ups and scale-ups in the region. Entrepreneurial culture is also closely related to the self-perception of entrepreneurial skills (OECD, 2018a). Even where people are motivated to start a business they may be constrained by the perception that they do not have sufficient capabilities to successfully do so. The share of people reporting that they possess the knowledge and skills to start a business has not grown significantly between 2006 and 2014, with many countries even showing a downwards trend (Figure 4.5).

Figure 4.5. Perceived capabilities for entrepreneurship, 2006, 2010 and 2014



Source: OECD (2017c), Small, Medium, Strong: Trends in SME Performance and Business Conditions, OECD Publishing, Paris. http://dx.doi.org/10.1787/9789264275683-en.

141. In addition to a lack of perceived skills, the cultural attitude toward failure can affect entrepreneurial culture. Failure is a likely outcome of entrepreneurialism, which is a high-risk undertaking. Cultures in which failure is considered a chance to learn and improve before starting on the next venture provide better environments for entrepreneurialism to flourish than cultures in which failure is seen as a deficiency. This is a problem faced by regions such as North Middle Sweden and Wallonia. One way to strengthen a weak entrepreneurial culture is to normalise entrepreneurship and teach entrepreneurial skills in formal education systems. Another is to provide programmes centred on entrepreneurship outside of the formal education system, an approach taken by Hauts-de-France (Box 4.6). Creating an enabling culture of entrepreneurship entails both clear and concise framework conditions and empowering potential entrepreneurs, including students and other young people, to see themselves as entrepreneurs by providing them with the necessary entrepreneurial skills and access to networks.

Box 4.7. WENOV Innovation Square in Hauts-de-France

Instilling entrepreneurial culture from the very beginning

WENOV Innovation Square is a planned, mixed-use urban project led by Euratechnologies. In addition to providing people with entrepreneurial and digital skills in order to match the skills of the work force to the jobs available in the region, this initiative aims to continue instilling a culture of entrepreneurship in the region by reaching younger generations. In 2012, Euratechnologies launched sessions aimed at 6 to 12 and 15 to 25 year-olds in order for them to adapt to an entrepreneurial culture. In 2017, EuraTech Kids was launched, introducing an entrepreneurial spirit to about 700 children per year. The Innovation Square, set to open in 2020, is positioning to become a digital hub to train people for the jobs of tomorrow and continue to change attitudes toward entrepreneurship.

Source: Hauts-de-France (2018a, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template, Innovation Square. Prepared for the Peer Learning in Industrial Transition Regions Workshop: Promoting entrepreneurship and mobilising the private sector, 7-8 June, 2018, Torino, Italy

142. Industrial transition regions often face more negative social attitudes towards entrepreneurship than regions where industry size has traditionally been diverse (i.e. not dependent on one or two large-scale industrial sectors). This can constrain people's intentions to start a business. Even where people are motivated to start a business, they may be held back by a perception that they lack the capabilities needed to successfully start and run a business. This can be expressed in terms of a lack of entrepreneurship competencies that allow individuals to identify, create and act upon opportunities in order to create value as entrepreneurs and entrepreneurial employees. These competencies include marshalling resources, demonstrating self-efficacy and confidence in ability to achieve, and persisting in the face of obstacles (Zhang, Duysters and Cloodt, 2014).

143. The cohort remarked that a risk-averse entrepreneurial culture can permeate through several other spheres, such as the financing decisions made for new enterprises that may not provide an immediate return on investment or have not proven themselves to be stable due to their youth. It also works against young firms and scale-ups continually needing to leverage human and financial capital and thus are in a constant "race against insolvency". This creates a dichotomy, particularly in risk-averse cultures: entrepreneurs need to work rapidly to ensure revenue, but changes to legal, administrative and cultural norms that can more strongly support entrepreneurship may require years or even generations to take root. Nevertheless, challenges and opportunities should be identified so they can be effectively engaged.

Rethinking evaluation frameworks

144. Lastly, a key challenge for regions is the lack of appropriate evaluation frameworks for entrepreneurial activity. This creates difficulty in evaluating policies and initiatives, and difficulty in evaluating business ideas.

Evaluating policies and initiatives

145. Regions may not have the necessary tools or capacity to evaluate the effectiveness of policies dedicated to strengthening entrepreneurship. Policy evaluation is crucial to ensure that the best possible efforts are being made to support entrepreneurship, but there is currently no standard practice for evaluating initiatives. In such instances, it is important that the policy is designed in such a way that it already takes into consideration the requirements needed for proper evaluation. In terms of quantitative assessments, a random control trial may give some measure of evaluation. However, qualitative evaluation can also contribute, with possible measures being satisfaction with the programme and self-reported outcomes.

Evaluating business ideas

146. It can be argued that evaluation is key to the entrepreneurial discovery process, as it allows regions to identify the most promising areas in which to develop entrepreneurship. However, regions and financing institutions may lack effective mechanisms to evaluate entrepreneurial business ideas prior to investment. For example, if evaluation is based on financial outcomes, start-ups may not have financial history or balance sheets to prove performance, which is not reflective of the validity or market potential of their idea or product. This in turn can affect their ability to benefit from private or other financing sources that require a financial history beyond initial financial projections. Innovative ways to evaluate business ideas that do not rely only on a firm's financial background need to be identified in order to support start-ups and scale-ups. For example, evaluation based on the

composition of the management team or the predicted demand for a product before its market entry could be alternatives, but need to be more fully developed.

Conclusions and an initial overview of policy responses

147. Entrepreneurial start-ups and scale-ups can be a crucial source of economic activity and dynamism for regions in industrial transition. In order to leverage opportunities that support entrepreneurs, each region will need to overcome a specific composition of challenges.

148. This cohort was particularly concerned with a lack of entrepreneurial culture in their region, manifested by a sparse regional presence of innovative start-ups and SMEs, as well as the challenges posed by financing practices and framework regulations. In risk-averse cultures where failure is seen as a personal fault rather than a learning experience, financial opportunities tend to mirror this attitude, with innovative start-ups and SMEs regarded as especially high-risk ventures for which interest rates are kept particularly high and private funds (e.g. venture capital) are scarce. Furthermore, accountability mechanisms attached to public and EU funds may unintentionally constrain support for innovative ventures. However, new opportunities for financing, adjusting regulations, building on networks and existing activities, all provide potential for entrepreneurship to flourish across regions.

Table 4.1. Potential policy responses and implementation mechanisms for promoting entrepreneurship and mobilising the private sector

Policy challenge	Objective (Strategic/Policy)	Possible policy response	Potential implementation mechanism	Rationale/additional benefits
Limited access to finance of start ups and scale ups	Support entrepreneurs to secure financing	Facilitate access to credit mechanisms for start ups and scale ups	Business angel networks, microfinance projects, crowd funding, public-private venture capital funds, equity financing, co-investment funds, interest-free loans	Creates an attractive innovation eco-system
				Generates employment
		Strengthen the financial literacy of start ups and scale ups	Training and mentoring programmes, provide accessible information and guidance	Makes firms more attractive clients to financial service providers
Limited access to skills, knowledge and networks of start ups and scale ups	Support entrepreneurs with business development throughout the entrepreneurial process	Support workforce development for start ups and scale ups through training and upskilling programmes	Direct training subsidies, training vouchers, training-leave allowances, tax incentives	Workers gain highly specialised competencies needed by firms
		Involve start ups and scale ups in the planning and design of regional skills-development initiatives	Participation in employers councils, collaborations/partnerships with vocational schools, universities and large firms	Targets training more efficiently
		Attract and retain highly skilled workers	High-level positions financing programmes, employee benefits, intellectual property	Greater job-related well-being and satisfaction
			University and entrepreneurial incubators, mentoring programmes, cluster policies, technology transfer platforms	Supports innovative entrepreneurial activity and commercialises knowledge

		Establish networks between industry and universities throughout the entrepreneurial process		Knowledge spill-overs
Improve the entrepreneurial enabling environment	Ensure a friendly regulatory environment	Simplify regional regulations and registration procedures (e.g. license and permit systems)	Consult with firms to identify the regulatory requirements perceived as burdensome, measure compliance costs, regulatory impact analysis, self-employment support structures	Improves efficiency
		One-stop service centres for entrepreneurs and businesses, including with information about regulations and public support programmes	Web portals, call centres, e-government systems, "brick-and-mortar" one-stop offices	Cuts transaction costs for entrepreneurs
	Foster an entrepreneurship culture	Teach entrepreneurial skills in formal education systems	Organise public events for children/students, IT-specialised schools, digital hubs to raise awareness about the importance of entrepreneurship	
Lack of appropriate evaluation frameworks for entrepreneurial activity	Encourage the evaluation of policies, initiatives, and business ideas	Include evaluation requirements in policy design	Quantitative assessments (e.g. random control trial), qualitative assessments (e.g. measures of satisfaction)	Supports building evidence bases, facilitates adjusting policies, programmes and financing W
		Develop innovative ways to evaluate business ideas that do not rely only on a firm's financial background	Base the evaluation mechanism on an analysis of the management team's composition or the predicted demand for a product (prior to market entry)	Informs decision-making

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Chapter 5 Inclusive Growth

Introduction

149. Since the economic and financial crisis, most OECD regions have been experiencing moderate, positive productivity growth. Despite this, inequality in income, wealth, opportunities, and/or well-being remain persistently high or have even increased (OECD, forthcoming). Between 2010 and 2016, about two-thirds of OECD countries observed a convergence of productivity levels among their regions, yet the remaining approximately one third, saw a widening of the productivity gap their between most and least productive regions. In 2016, the most productive region was on average twice as productive as the least productive region within OECD countries. Even within the same region, large spatial disparities can exist, in particular between urban and rural areas (OECD, 2018a).

150. Productivity growth drives the evolution of wages and thus the income of local residents, which is, in turn, related to other outcomes that affect quality of life, such as housing, health and education. Inclusive growth implies providing the conditions that enable all people to have a good quality of life and the chance to actively participate in and contribute to growth and societal progress. The OECD has identified two fundamental dimensions to inclusive growth that are particularly relevant to regions in industrial transition. One is the importance of adopting an integrated territorial approach to development and creating links between territories. The second is placing citizens at the centre of policy-making that itself is focused on individual and societal well-being.

151. This chapter highlights current OECD findings on the dynamics behind more inclusive growth at a regional level, and specifically within this cohort. It offers insight into the cohort's perspectives on inclusiveness, and highlights how of the policy practices the participants use to address territorial inequalities, can also support growth, productivity and overall well-being. The chapter ends with a summary of potentially relevant policy tools to support regions generate an inclusive transition.

OECD insights on inclusive growth and the experience of Cohort 1 regions

152. To one degree or another, common inhibitors to inclusiveness, such as low economic growth and productivity, unemployment, and skills gaps, are affecting the cohort's ability to transition and develop. Spatial disparities are a contributing factor, as they can generate unequal access to quality services, and ultimately affect well-being. Added to these factors, the cohort identified numerous other factors, such as social isolation, cultural sensitivities, poverty, environmental challenges, and declining populations. Responses to the challenge of ensuring an inclusive industrial transition – ultimately a question of growth with equity – tend to be cross-sector and multi-stakeholder, usually involving more than one level of government and more than one type of actor (public, private, civil society, etc.). This can pose governance challenges that the regions must manage, particularly with respect to strategy development, horizontal and vertical coordination, and stakeholder engagement.

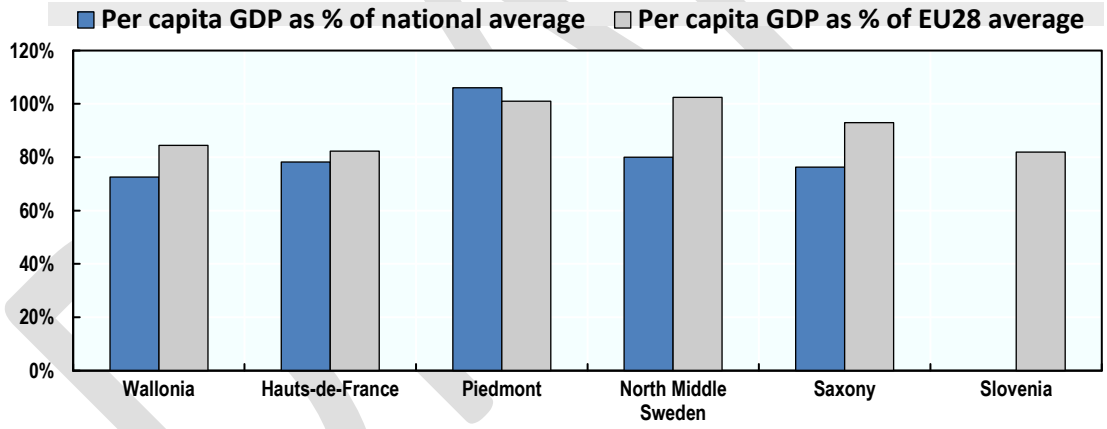
Building inclusiveness is a complex proposition requiring an integrated response – a fact acknowledged by the cohort, and one that, to differing degrees, they are putting into practice.

Challenges to inclusive growth in the cohort

153. Focusing strictly on productivity and economic growth as industrial transition mechanisms will likely not provide a sufficient basis for lasting change. A more integrated, and potentially innovative approach may be necessary – one that generates growth, but which also promotes overall well-being in the region. Many of the initiatives shared by the cohort focus on mechanisms used to address the very specific, yet often broad challenges associated with generating and ensuring inclusiveness.

154. Industrial transition regions face two major impediments to inclusive growth: *i)* slow, sluggish growth, which has resulted in relatively low prosperity; *ii)* the loss of employment in traditional, low-skilled jobs, resulting in concentrating the negative consequences associated with transition in certain groups. With the exception of Piemonte, the participants in this cohort are less prosperous than their respective country in terms of per capita GDP (Figure 5.1). Unemployment is one contributing factor. On average, the unemployment rate was 9.2% in 2016, and in four out of five regions, plus Slovenia, already high unemployment rates increased significantly in comparison to pre-crisis years (Figure 5.2) (OECD, 2018a).

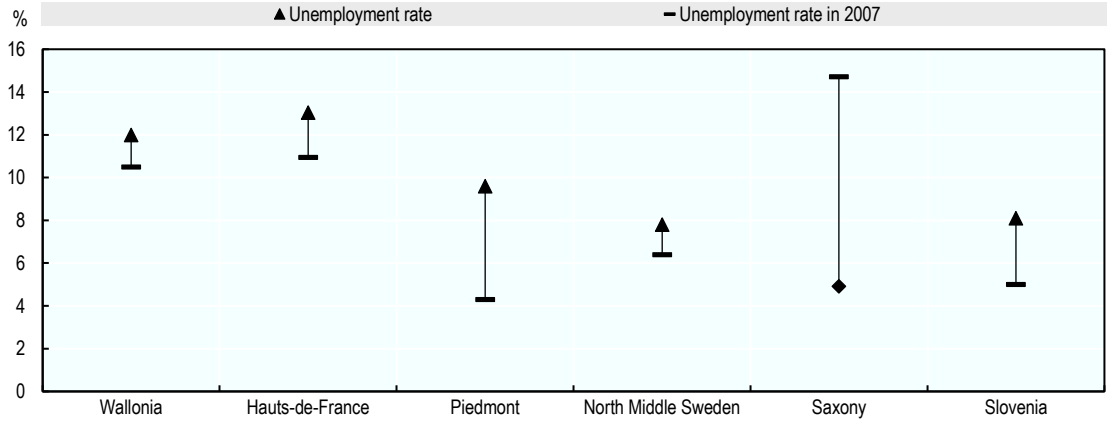
Figure 5.1. GDP per capita in Cohort 1 regions



Source: OECD Regional Database.

Figure 5.2. Unemployment in Cohort 1 regions

2007 and 2016



Source: OECD Regional Database.

155. The impact of low incomes and high unemployment rates goes beyond simple monetary terms, however. Unemployment, low incomes, or a lack of opportunities can cause mental and physical health problems, which can further affect capacity to find employment and/or increase income, generating a negative cycle (Strully, 2009; Martikainen and Valkonen, 1996). With the exception of Slovenia where life expectancy[12] is higher than EU average, all other participants mark life expectancy rates lower than their country's average, and sometimes significantly so (OECD 2018a).

156. Labour market integration can be a challenge in some of the regions, and it affects everyone, but in particular the long-term unemployed, women and minorities, and youth. Unemployment, and especially long-term unemployment can deteriorate skill sets and income, it can also affect health (mental and physical), and relationships, and it can have a large impact on social inclusion. Cohort members recognise this and have established initiatives that take a comprehensive approach to strengthening labour market participation. In Piemonte, the regional government is working with families with small children to combat poverty and social exclusion by linking economic assistance to participation in other programmes and services. In this way, the region can better ensure that individuals receive comprehensive support, including in health, education and training. Saxony's Tandem programme takes a comprehensive, family-based approach to supporting labour market integration, and in Wallonia the Self-Employment Structures (SAACE) are offering support to individual job seekers who wish to be self-employed (Box 5.1).

Box 5.1. Labour market policies to integrate long term unemployed and supporting self-employment

Tandem: Taking a family-based approach to labour market integration in Saxony

Saxony's Tandem programme supports labour market integration of long-term unemployed by working with the entirely family unit for 12 to 18 months. The programme seeks to ensure: *i)* employment for at least one parent; *ii)* assistance for school age children; *iii)* increased social competences and practical life capabilities; *iv)* solidarity and well-

[12] Life expectancy is used here as a proxy for health.

being in the family unit. To accomplish its aims, it offers training and education opportunities for long-term unemployed adults (parents and single-parents) to promote better social and professional participation. It also offers practical and educational support the household's children. Interdisciplinary counselling teams composed of specialists (generally social workers and psychologists) that help stabilise the family by taking a holistic approach to supporting a return to employment. The programme connects job centres and youth welfare offices to offer assistance services.

SAACE: supporting self-employment in Wallonia

Wallonia's Self-Employment Support Structures (SAACE) offers individual support to jobseekers wishing to establish their own business or take over an existing one. The SAACE offer pedagogical, legal and financial support to set up a project, test the project before entering the market, obtain financing, and receiving legal protection. Twelve structures are currently approved and funded by the Walloon government, offering job-seekers free coaching for a maximum of 24 months. Nine of the two offer a test of the project prior to launch or the possibility to host the activity in order to validate economic viability. By 2017, 611 companies were crated with the help of a SAACE, more than 5 800 people were welcomed, 2 200 people were supported in the precreation of their initiative, and almost 740 people have tested their activity. An interesting point is that the structures welcome more women (about 60% of all beneficiaries).

Source: OECD (2018b, unpublished), "Peer Learning in Industrial Transition Regions Workshops: *Inclusive Growth*", Proceedings Paper for Peer Learning Workshop 5: *inclusive growth*. Unpublished, OECD, Paris.; Saxony (2018a, unpublished), "Saxony", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: *Inclusive Growth*, 28-29 June, 2018, Tällberg, Sweden.; Wallonia (2018a, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template, *Self-employment support structures (SAACE).* Prepared for the Peer Learning in Industrial Transition Regions Workshop: *Inclusive Growth*, 28-29 June, 2018, Tällberg, Sweden

157. Labour market inclusion efforts within the Cohort extend to the question of gender equality, particularly in North Middle Sweden. The region noted that while women are completing higher levels of education and acquiring more skills than men, they were facing a double standard: in sectors with a higher proportion of men forming the workforce, salaries are higher and more secure than in sectors traditionally populated by women (e.g. services and healthcare). Note, this is not endemic only to North Middle Sweden, but the region is actively addressing the matter in its regional development strategy (Box 5.2)

Box 5.2. Building gender inclusiveness in North Middle Sweden

North Middle Sweden is participating in a national campaign to integrate gender into regional development strategies. The initiative is based on four pillars: i) incorporating gender into policy documents; ii) gender mapping to identify gender inequality in the region with respect to development issues, for example the use of regional development funds; iii) female entrepreneurship; iv) including a gender perspective in programme planning and implementation. North Middle Sweden focuses on the first, second and fourth areas, creating an action plan with specific interventions. For example, a gender equity assessment is included with considering project funding, and actively building evidence bases to generate gender statistics that can further support gender-sensitive programming and policy.

Source: North Middle Sweden (2018, unpublished), "North Middle Sweden", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: *Inclusive Growth,* 28-29 June, 2018, Tällberg, Sweden.

The skills gap and youth unemployment: implications for inclusiveness and well-being

158. One of the contributing factors to the income and unemployment levels noted above is a skills gap present to greater or lesser degrees in the full cohort. Among all participants, the share of the labour force with tertiary education is either below the national average levels (for the five regions) or the EU average (in the case of Slovenia) (OECD 2018X). Tertiary education is increasingly important as a result of technological change and the skill sets demanded by firms. Regions that largely rely on low-skill employment are more vulnerable to adverse consequences arising from technological change, which often concentrated in specific, low skilled, groups. In Piemonte, the skills gap is being addressed through technology-education institutes placed throughout the region and specialised in technology-related themes. A central component of the programme is the strong participation of the private sector; currently, 40% of teachers come from industry. Private sector interest in the programme is particularly high given that it contributes to the curriculum/course design and firm staff also work as instructors, directly training the students and helping ensure that the skills acquired match the employer needs (Piemonte, 2018).

159. Youth unemployment is disproportionately high among participants in the cohort, and can reflect a skills gap. On average, 30% of the cohort's youths are unemployed, 3 percentage points more than the respective national average. Youth unemployment is a source of exclusion from the labour market and society more generally. Moreover, pervasive youth unemployment increases the risk of skills degradation, which further reduces future employability. Making sure that youth are able to participate in the labour market and earn their own income is an essential component of inclusive growth (OECD 2018X). Saxony is addressing this through its youth career agency initiative, "We Need all Talents". In Slovenia, a target counselling programme is underway to reduce secondary school drop out rates (Box 5.3).

Box 5.3. Addressing youth unemployment in Slovenia

In Slovenia, an integrated, preventative and individualised counselling programme was established for students who have dropped out of secondary school or are at risk of doing so. It tailors certain education components to their needs, and provides opportunities for students to train and work in areas in which they can excel. This at once highly motivating, while also offering the opportunity to develop marketable skills.

Source: OECD (2018b, unpublished), "Peer Learning in Industrial Transition Regions Workshops: *Inclusive Growth*", Proceedings Paper for Peer Learning Workshop 5: *inclusive growth*. Unpublished, OECD, Paris.

Overcoming regional disparities through territorial cooperation

160. The territorial distribution of economic activity is another important aspect of inclusive growth. Within countries but also within the same regions, significant economic differences can exist in terms of income per capita, productivity, or demographic trends. At the core of spatial disparities in economic activity and productivity are large cities, which

are generally economic centres and are, on average, more productive and prosperous than other types of areas. While cities are important sources of economic development, they are strongly linked to other places in the same region and beyond. As different places have different assets, complementarities are often at the basis of such linkages and these can generate benefits for all types of regions. Therefore, ensuring that spatial linkages are fully utilised is a way to enhance productivity and reduce territorial disparities. There are a number of ways to make the most of such linkages, including territorial cooperation

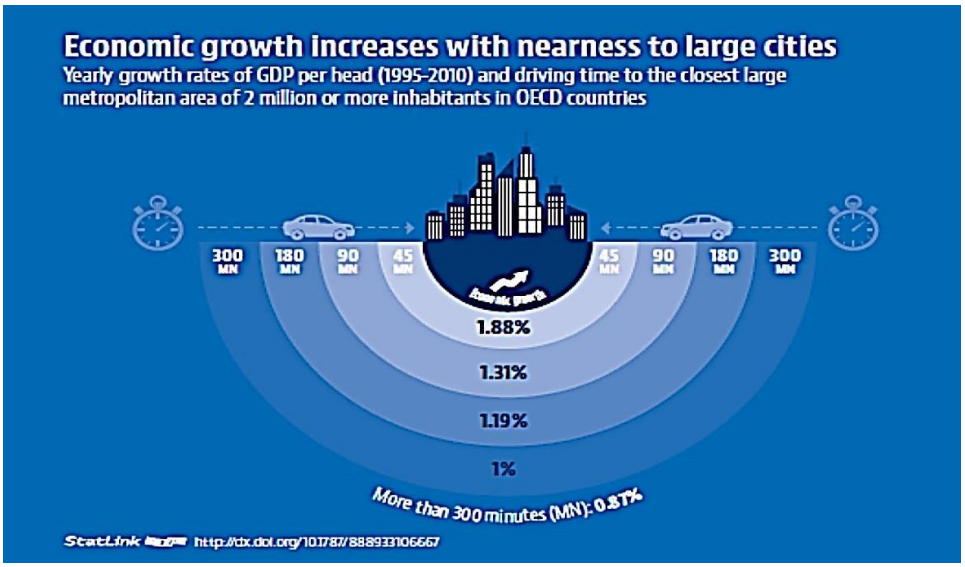
Linking areas to capitalise on agglomeration economies

161. The OECD has found that regions closer to cities, and especially those closer to larger cities, have grown faster in terms of per capita GDP than their more remote counterparts. The higher productivity is due to productivity benefits – so called "agglomeration benefits" – that arise in larger or more densely populated cities (OECD, 2015a; Ahrend et al., 2017). Agglomeration benefits make up around half of the productivity advantage of cities. They arise from working in larger and denser places as a result *i*) of learning and knowledge spillovers, *ii*) specialisation, and *iii*) deep labour markets (Duranton and Puga, 2004). The impact of agglomeration economies however, is not limited to cities – they can positively affect regions that are further away. Evidence indicates that while positive spillovers do decline with distance, they are measurable up to 200-300 kilometres from cities (Figure 5.3). Proximity to cities facilitates "borrowing" agglomeration economies from them. It makes it easier to use the larger markets and services usually offered in cities. For instance, between 2000 and 2015 smaller European regions (those that are rural and close to cities) have grown the fastest in recent years (OECD, 2016b)[13]: 1.1% annually – outpacing urban regions by 0.4 percentage points (OECD, 2018a). This is particularly relevant for this cohort where cities seem to have a significant "pull" factor

[13] See Box 3.1 for an explanation of the classification of small regions into predominantly rural, urban, and intermediate.

Figure 5.3. Per capita GDP growth in regions, by distance to large metropolitan areas

Annual average per capita GDP growth controlling for country effects and initial per capita GDP levels, 1995-2010



Source: adapted from OECD (2015), *The Metropolitan Century: Understanding Urbanisation and its Consequences*, OECD Publishing, Paris, https://doi.org/10.1787/9789264228733-en.; originally, Ahrend, R. and A. Schumann (2014), *Does regional growth depend on proximity to urban centres?*, OECD Regional Development Working Papers, No. 2014/07, OECD Publishing, Paris, http://dx.doi.org/10.1787/5jz0t7fxh7wc-en

162. Public infrastructure linking more distant areas to cities is one tool that can help areas further away from an urban centre "borrow" a city's agglomeration economy. The impact can be significant, as experienced in Germany where medium-sized towns that received new stops on the high-speed rail route between Cologne and Frankfurt significantly benefitted from access to those two large cities (Ahlfeldt and Feddersen, 2018). The improved accessibility led to an increase in GDP of around 8.5% and also raised labour productivity by 3.8% within 6 years in counties where an intermediate stop on the rail connection was opened (OECD, 2018x). Infrastructure also helps improve market access. Recent evidence shows that market access through road networks had a positive impact on European regional economies over the 2000-12 period. Regions with greater improvements in market access grew more in terms of employment, GDP as well as population. An increase in market access by 1% raises regional GPD by 0.2%, employment by 0.7%, and population by 0.6%, on average. These positive effects of market access appear to be strongest over long-distances and emphasise the importance of territorial linkages through infrastructure. (Adler et al, forthcoming).

163. Well-connected regions or networks of cities might be able to generate the positive effects of agglomeration economies and territorial integration without being constrained by the rising costs of high urban density (e.g. higher costs of living). Rural-urban partnerships are an example of such networks. Rural areas close to cities have experienced significant population growth, now accounting for 80% of the rural population in OECD countries (OECD, 2018a). Fully utilising the potential that arises through the complementarity of urban and rural areas is mutually beneficial for both types of regions, exploiting untapped economic potential and raising productivity. Between 2000 and 2015, rural regions closer to cities narrowed their productivity gap by more than 3 percentage points. Rural regions that

are more remote, however, have not been able to close their productivity gap. Thus, they would benefit from different types of infrastructure and policy intervention, such as ensuring digital connectivity and digital services in order to reduce the cost of distance.

164. Supporting cooperation between different types of areas within a region can help support the development of each. For example, rural areas have a series of resources that are also essential for urban areas, including natural resources (agricultural products, water or sources of renewable energies), greenfields (space to establish new economic activities and to accommodate pressure from urbanisation), ecosystem services (e.g. air quality, waste disposal, preservation of biodiversity etc.), and rural amenities for residential and recreational purposes. Furthermore, low-density areas – well connected to urban ones – can be an appropriate environment for locating manufacturing (Glaeser and Kohlhase, 2004). As engines of economic development, urban areas concentrate resources relevant for the liveability and the prosperity of rural areas such as universities, most jobs in advanced services, and capital flows as well as financial institutions and physical capital (e.g. infrastructure). Furthermore, urban areas offer large markets, benefit from agglomeration economies, and concentrate political and administrative capacity (OECD, 2018a). All of these factors may yield complementarities that can be exploited and governed through appropriate partnerships among urban and rural areas. They can also help address certain policy challenges particularly relevant to this cohort (Table 5.1).

Table 5.1. Policy challenges addressed by rural-urban partnerships by type urban-rural interaction

Type of urban-rural linkage	Subtype	Possible purposes of urban-rural partnership	Challenges	Observed examples
Economic transactions and innovation activity	Productive relations	Fostering supply chains (e.g. agro-industry)	Boosting activities with a high territorial multiplier	Forlì-Cesena (Italy)
	Knowledge diffusion and innovation links	Fostering links between SMEs and universities and research centres	Boosting competitiveness in remote areas	Forlì-Cesena (Italy) Nuremberg (Germany)
Public service delivery	Public service (education, health, waste, etc.)	Developing information and communication technology (ICT) infrastructure for service provision	Ensuring access to basic services and combating depopulation in remote areas	Central Finland (Finland)
	Public transport	Co-ordinating investments in transport within functional areas	Ensuring access to both urban and rural resources	Nuremberg (Germany) Rennes (France)
Other "governance" interactions	Joint planning	Setting a common development plan	Improving the efficiency of public policy	Geelong (Australia) Rennes (France)
	Co-ordination among local authorities	Building a common voice in dealing with higher government	Increasing political relevance and access to funds	Geelong (Australia) Brabant (Netherlands)

Source: Adapted from (OECD (2018a, unpublished), "Peer Learning in Industrial Transition Regions Workshops: *Inclusive Growth*", Proceedings Paper for Peer Learning Workshop 5: *inclusive growth*. Unpublished, OECD, Paris

165. The territorial dimension to inclusiveness resonated with the participants, and almost all of them shared at least one initiative linked to this issue. In North Middle Sweden, ensuring equitable access to public services is a challenge, especially access to quality and specialised healthcare. To tackle this, the region has been digitising health and welfare provision. County councils are responsible for transforming how healthcare services are

delivered, including by incorporating IT solutions. By facilitating "virtual" delivery of healthcare through this digitization process, it is expected that health care provision will be more accessible, helping improve citizen health and wellness outcomes. The initiative also benefits the region's business and ICT community that creates, supplies and maintains the technical (digitised) component of the service (North-Middle Sweden, 2018; OECD, 2018b). In Hauts-de-France, the *Pôles Territoriaux de Coopération Economique* (PTCE) support social innovation and local sustainable development, including in rural areas. For example, the *Maison d'Economie Solidaire* (MES), located in a rural area in the region's southwest, it emerged in the 1990s to address problems of professional insertion and local economic development, and today employs 300 people (Box 5.4).

Box 5.4. *Maison d'Economie Solidaire* in Hauts-de-France

The *Maison d'Economie Solidaire* in Hauts-de-France, is one of several entities within the region's *Pôles Territoriaux de Coopération Economique*. At the heart of its approach is R&D and social innovation to develop projects in its (rural) territory, and within several sectors, including the environment (green buildings and recycling centres), housing (renovation), and innovation (an artisan incubator). Its key stakeholders include representatives from local authorities, users of the services, external partners, volunteers, and the private sector. Today, the MES is involved in a wide variety of initiatives related to employment, training, habitat, mobility/connectivity, and social finance; and has helped create green buildings and recycling centres, renovate housing, and support local artisans with a dedicated incubator, among other activities. It is a good example of how seizing the opportunities and dynamism of an area, and working with its own endowments, can contribute to a regional economy and build greater inclusiveness.

Source: Hauts-de-France (2018, unpublished), Peer Learning in Industrial Transition Regions Workshops Prospective Initiative Template, *Les Pôles Territoriaux de Coopération Economique (PTCE) et la Maison d'économie solidaire (MES)*. Prepared for the Peer Learning in Industrial Transition Regions Workshop: *Inclusive Growth*, 28-29 June, 2018, Tällberg, Sweden*;* OECD (2018a, unpublished), "Peer Learning in Industrial Transition Regions Workshops: *Inclusive Growth*", Proceedings Paper for Peer Learning Workshop 5: *inclusive growth*. Unpublished, OECD, Paris

Regional well-being as a factor for inclusiveness

166. A proper examination of well-being, and its contribution to a region's inclusive growth, needs to move beyond average statistics and take into account how outcomes are distributed across social groups. Comparable measures of well-being at the regional level that also provide information on the distribution of outcomes offer a new way to gauge which policies are effective and support communities to achieve higher well-being, including potentially greater inclusiveness, for their citizens. The OECD regional well-being framework (OECD, 2014), identified 11 dimensions that are highly relevant for people's lives, consisting of material conditions and quality of life, dividing these into two broad categories:

- *Material well-being:* jobs, income, housing
- *Quality of life:* education, health, civic engagement, safety, access to services, environment, sense of community and life satisfaction

167. As many of the policies that bear most directly on people's lives are local or regional, more fine-grained measures of well-being will help policy-makers enhance the

design and targeting of policies. Well-being outcome indicators represent a strategic tool for regions wishing to assess and improve policy results.

Applying a well-being dimension to regional development

168. Applying well-being indicators to regional development can enhance coherence across policies by promoting a better understanding of trade-offs and synergies among the different well-being dimensions. To do so, a "well-being" strategy, constructed around three building blocks, can be helpful (OECD, 2018a):

1. *Regional well-being metrics that capture people's daily experience*: focusing on outcomes rather than inputs or outputs, taking into consideration the distribution of well-being across territories and across different groups, and assessing regional sustainability and resilience over time.
2. *Exploiting complementarities across different dimensions of well-being*: clarifying responsibilities across and within different levels of government and different groups of stakeholders, increasing co-ordination among policies and managing possible trade-offs while maximising synergies.
3. *Encouraging citizens to adapt well-being measurement to their needs*: mobilising citizens in an early and continuous participative process to collectively identify the dimensions that matter most to the community, provide input for prioritising policy interventions and monitor progress towards the anticipated results.

169. Putting well-being at the core of the policy agenda requires formulating the various well-being objectives as policy-relevant indicators. For example, the Mexican state of Morelos aims to improve the quality of life of its citizens with the 2013-2018 State Development Plan (PED) that includes well-being dimensions and indicators to accomplish this objective. The region of Southern Denmark put well-being as a cornerstone of its regional development policy (explored further below).

Common themes in implementing a more inclusive approach: governance

170. Building greater inclusiveness is inherently a cross-sector, multi-disciplinary proposition. It calls for integrated policymaking, effective partnership and engagement mechanisms, and clear understanding that everyone stands to gain from an integrated and inclusive approach, and the ability to communicate this. In the cohort's discussion of inclusiveness several themes associated with multi-level governance arose, including its integration into a broader development strategy, the challenge of coordinating diverse sectors and actors, and building engagement among relevant stakeholders.

Taking a strategic approach

171. Cohort participants approach the question of generating inclusive growth in a multitude of ways, including through labour market integration programmes, addressing gender bias, social innovation, programmes to help families in remote or underprivileged areas, digitisation, etc. What is clear, as with other themes explored in the Pilot Action, is that there is no "one" or "best" way to build inclusiveness and often regions will do so – intentionally or otherwise – by supporting other policy areas (e.g. labour market, education, skills, infrastructure). While potentially successful this rather fragmented approach is unlikely to be as effective as one that is integrated, comprehensive and strategic. Southern Denmark for example, decided to incorporate a strong well-being dimension into its regional

development policy in order to better harness synergies and ensure coherence among the multiple policy areas that promote greater well-being and inclusiveness (Box 5.5).

Box 5.5. Making well-being an integral part of a region's development policy in Southern Denmark

The Southern Denmark Regional Council's regional growth and development strategy seeks to create the necessary conditions for a "good life", with well-being as its guiding principle. The strategy lays out three aspirations for the region – to be active, attractive, and productive – and six "paths" to guide regional projects and initiatives: knowledge, people with potential, business development, green opportunities, vibrant urban regions, strong connections. To implement the strategy, partnerships with all levels of government were vital. Three formal agreements were signed in order to facilitate collaboration and support implementation: *i*) a political agreement on central matters (qualified labour force, good life locally, city/region development and work across borders in city regions); *ii*) city-region development agreements to support area specific challenges and opportunities; and *iii)* a political coordination committee to ensure coordinated regional and municipal strategies.

Source: Lundström, J. (2018 unpublished), "Measuring Good Life in Southern Denmark: Using Well-being Indicators for Policy-Making", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: *Inclusive Growth*, 28-29 June, 2018, Tällberg, Sweden

172. There are times when a broad strategic approach to inclusiveness and well-being is not feasible, be it due to policy and programming cycles, political forces, or limited capacity, etc. These, however, do not have to impede a taking a strategic and integrated approach to inclusiveness. Piemonte's regional government, for example is strategically reorienting its welfare/social policies through it regional social innovation strategy: *Welfare Cantiere Regionale* (WE CA.RE). The driver behind the strategic reorientation is an understanding that welfare/social policies must be considered as one of the public policy pillars that contribute to territorial development and inclusive growth, rather than as a policy area exclusively devoted to meet the social needs of people in difficulty (Box 5.6) (Piemonte, 2018a).

Box 5.6. Piemonte's regional social innovation policy: WE CA.RE.

As part of its regional social innovation policy – WE CA.RE – Piemonte has strategically reoriented its approach to welfare/social policy. The strategy aims to promote social cohesion and inclusion by implementing innovative processes in the fields of social services and social entrepreneurship by improving local governance and supporting public and private sector networking and collaboration. Among WE CA.RE's guiding principles are the centrality of the person rather than the service, and the "territorialisation" and integration of social, welfare, labour and innovation policies. One major challenge is working in an inclusive manner with respect to both, integrating all public and private actors, and integrating social, labour and development policies. Rising to the challenge, four different Piemontese regional Departments – Labour, Social Policies, Youth and Equal Opportunities, Competitiveness and Innovation – have jointly endorsed the strategy, which was approved in May 2017. The first action launched related to "innovative territorial welfare" which promotes community welfare as an engine of local development,

territorial collaboration and better governance. It requires creating Social Cohesion Districts in which partnerships are established and tasked with drafting projects in support of better local governance, innovative welfare and the provision of accessible social services. Three other actions are expected to launch in 2018: i) the testing of innovative services implemented by the third sector; ii) implementing company welfare initiatives primarily aimed at the employees of SMEs; iii) supporting entrepreneurial initiatives with social impact. The region has signed an MoU with the regional Bank Foundation, which has committed to funding initiatives in line with the regional strategy.

Source: Piemonte (2018a, unpublished), Peer Learning in Industrial Transition Regions Workshops Good Practice Template, *WE CA.RE - Welfare Cantiere Regionale.* Prepared for the Peer Learning in Industrial Transition Regions Workshop: *Inclusive Growth,* 28-29 June, 2018, Tällberg, Sweden.

Vertical and horizontal coordination

173. As in other thematic areas, coordination of different actors and among sectors is necessary and sometimes challenging for the cohort. Many of the initiatives require a multi-level approach for their design, financing and implementation – involving the national, regional and local levels. This is clearly the case in Piemonte and in Saxony (Box 5.7). Success depends on bringing together and aligning the priorities of service providers in disciplines as diverse as health, employment and social services. It can also mean actively engaging with the private sector in order to identify their needs, but also in the co-production and co-delivery of services – seen in Piemonte with its regional technology training facilities mentioned earlier. In some cases, participants highlighted a need to build competences in managing the complex problems and solutions associated with building inclusiveness in a coordinated manner. They also underscored the need to ensure that priorities align among different levels of government, and that responsibilities are clearly assigned and understood.

Box 5.7. A coordinated approach to greater inclusiveness in Piemonte and Saxony

A strategy for inner areas in Piemonte.

Piemonte's "Strategy for Inner Areas" – embedded in Italy's National Strategy for Inner Areas – aims to address the economic and demographic decline of peripheral area by taking a coordinated approach to the provision of key public services, such as healthcare, education, transport/accessibility, and by basing development on local resources. The strategy is supported by two pillars: *i*) improving public services which will be funded by national resources; *ii*) targeted local development, that will be funded through different European Structural Investment Funds (specifically ERDF, EARDF, and ESF). The initiative brings together the national, regional and local governments, as well as private actors for a bottom-up consultation process that assesses programmes and guides further development. Among the challenges are multi-level governance, coordination of actors and priorities, and leadership at the local level (i.e. the capacity of local communities to guide the local development process and build ownership of a common development vision among local stakeholders). An additional challenge is ensuring continuity in policy and funding. The Strategy is just getting underway and given its complexity, results will require implementation past the current EU programming period (to 2020).

Multi-level, multi-agency initiative to support youth employment in Saxony

Saxony's "We Need All Talents" initiative aims to improve the school-education-occupation transition, prevent drop-outs and youth unemployment, and help youth overcome personal crises. The initiative does not call for a new authority or agency, but rather focuses on an improved cooperation structure among existing relevant authorities and their assistance systems, in order to offer coordinated consultation and joint case management as one-stop-agencies. The Youth Employment Agency would combine youth services associated with the Youth Welfare Office; employment support (for long-term unemployed) and case management associated with job centres; career guidance, training placement measures and employment agency services (for short-term unemployed); schools provide professional orientation and school social work. This is a good example of taking a well-being, systemic approach to addressing youth unemployment as a means to build greater inclusiveness in the region. Based on a 2018 agreement between the Free State of Saxony, the Association of Saxon Cities, the Saxon County Association and the Federal Employment Agency, it also highlights the importance of multi-stakeholder cooperation to support inclusiveness and promote wellbeing.

Source: Piemonte (2018b, unpublished), Peer Learning in Industrial Transition Regions Workshops Prospective Initiative Template, *Strategy for "Inner Areas"*. Prepared for the Peer Learning in Industrial Transition Regions Workshop: *Inclusive Growth*, 28-29 June, 2018, Tällberg, Sweden; Saxony (2018b, unpublished), "Saxony OECD", PowerPoint Presentation for the Peer Learning in Industrial Transition Regions Workshop: *Inclusive Growth*, 28-29 June, 2018, Tällberg, Sweden.

Using partnerships to build stakeholder engagement

174. Many, if not all, of the practice examples highlighted in this section rely on partnerships – be they among government bodies, with the private sector, with civil society, NGOs, communities, etc. Securing these partnerships, however, can prove challenging. For example, in the case of urban-rural partnerships, actors may be unwilling to share the cost of programming. Other structures, such as those that rely on volunteer participation, can face slow up-take by potential partners. Successful partnerships, and the incentives behind them, do not have to be financial, however. Asking partners to contribute their expertise for skills training and educational development is an alternative, as illustrated by Piemonte's experience in the design and delivery of technology training programmes. It is, however, advisable to engage with prospective actors early and throughout the programming cycle. This helps build ownership and can increase chances of programme success.

175. Seeing the outcomes of policies designed to generate and maintain greater inclusiveness takes time, and requires commitment and effort by all stakeholders. Building in sufficient time for consultation, and ideally collaboration, in programme design and delivery is critical. Combining this with strong effective partnerships can also contribute to supporting policy continuity, weathering changes that can come with election cycles, and shifting priorities

Conclusions and an initial overview of policy responses

176. The concept of inclusiveness is, to some degree, the "why" for all of the other topics: broadening and diffusing innovation, supporting SMEs and entrepreneurs, transitioning to low-carbon, and closing skills gaps in the labour force come together under the notion of inclusiveness. Why a region targets successful industrial transition has as much to do with ensuring its growth and productivity as it does with making sure it advances and does not lag compared to other regions, and there is a comparable level of well-being in the

material and non-material measures, throughout the territory. Introducing an inclusiveness or well-being strategy may not yet be planned by cohort participants, but each has advanced in an inclusiveness agenda using a variety of tools at their disposal.

Table 5.2. Potential policy responses and implementation mechanisms for inclusive growth

Policy challenge	Objective (Strategic/Policy)	Possible policy response	Potential implementation mechanism	Rational/additional benefits
Limited labour market access for low-skilled workers	Strengthen labour market inclusion	Support long-term unemployed workers through career guidance and re-training schemes	Integrated approach to labour market reintegration, job centres, employment agencies, individual coaching, training placements/courses, non-profit employment opportunities	Increases productivity
		Improve the school-education-occupation transition by tailoring education components to individual student needs	Professional orientation by schools, school social work, counselling programs to reduce secondary school drop-out, labour market integration programs	Greater school- and job-related satisfaction
		Support individual job seekers who wish to be self-employed to access the labour market	Self-employment structures providing legal, strategic and financial support	Generates employment
		Promote gender equality through integration in national/regional planning strategies	Gender equality assessments, targeted measures and services	Increases productivity
	Ensure that workers have the appropriate skills to fill new job opportunities	Map regions, industries and skills to identify matches and mismatches	Prospective analysis, effective communication of findings to relevant audiences	Informs policy-making
		Implement and support training and upskilling programs	Scholarships, lifelong learning schemes, apprenticeship programs, competence centres	Workers gain highly specialized competencies needed by firms
		Encourage the creation of technology-education institutes and technology-focused education programs	Private-sector funding, collaboration programs between industry and schools/universities	Supports innovation in entrepreneurial activity
Disparities between urban and rural areas	Use spatial linkages to enhance productivity and reduce territorial disparities	Improve accessibility through investment in infrastructure	Road networks, new stops on high-speed or other rail routes	Extends the benefits of agglomeration economies/increases GDP
		Encourage territorial cooperation through rural-urban partnerships	Supply chains (e.g. agro-industry), links between SMEs and universities and/or research centres	Utilises urban/rural complementarities and supports regional development
				Greater economies of scale for goods and service provision
		Ensure digital connectivity and digital services in remote regions	ICT investments, virtual delivery of healthcare mechanisms	Reduces the costs of distance

Ensure inclusiveness policy and programming coherence among different levels of government	Incorporate inclusiveness and/or well-being into regional development strategies/policies or objectives	Develop and use comparable indicators of well-being at the regional level	Regional measures of material well-being and quality of life, participation of the civil society to define well-being measures	Supports building evidence bases, facilitates policy programs and financing adjustments
		Coordinate and engage relevant stakeholders in common development and investment plans (government, private sector, universities, NGOs, civil society)	Multi-level partnerships, political coordination committees, local working groups, collaborative open networks/platforms/agencies,	Increases efficiency
				Fosters stakeholder engagement
		Encourage and support inclusive growth R&D and social innovation initiatives	Green buildings and recycling centres, fund firms willing to establish company welfare projects, national funding for conditional cash transfers, dedicated incubators for local artisans, re-use of industrial buildings for culture use	Creates economic and territorial social value

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