

Executive summary

In the wake of the 2008 financial and economic crisis, innovation is viewed as central in boosting job creation and economic growth in the quest to build stronger, cleaner, and fairer economies. This is reflected in major international agendas such as the OECD Innovation Strategy and the EU's Innovation Union. In the new push for innovation and competitiveness, regions have increasingly become relevant actors. Two policy trends contribute to the rising role of regions. First, the paradigm shift in regional development policies favours strategies based on the mobilisation of regional assets for growth, bringing innovation to the core of regional development agendas. Second, there is a growing recognition of the regional dimension in national innovation strategies in harnessing localised assets and improving policy impacts. The increased relevance of networks and connectivity for innovation also reinforces the importance of regional innovation systems. But regions are not countries and cannot simply replicate national policies at a regional scale.

What is needed to maximise the impact, and recognise the limits, of innovation policies **by, in and for** regions? This publication identifies several key areas for policy improvement.

1. Acknowledge the diversity of regional economic and innovation profiles. Regions and their innovation systems show varied development paths. Multiple types of regional innovation systems co-exist within the same country, including knowledge hubs, industrial production zones and regions that are not driven by science and technology (S&T). The landscape of technology-based innovation is not flat. Around 13% of OECD regions account for half of total OECD R&D investment. R&D and patenting are most concentrated in the top regions of knowledge-intensive OECD member countries, and those regions vary across different technology paradigms (green technologies, biotechnology and ICT, for example). New regions, from advanced countries and from countries that are catching up, are emerging as key players, reshaping the geographical landscape of innovation. Beyond technological leadership, several production systems mainly add value by investing in non-technological innovations, talent and creativity. Given the specificities and localised characteristics of non-S&T-driven systems, regional governments can play a significant role in supporting creative firms and a cultural environment that favours productivity, for example by offering targeted services for small and medium-sized enterprises and professionals. The empirical evidence on specialisation and innovation shows how varied regional innovation systems are, both within and between countries, and suggests that there cannot be a “one-size-fits-all” approach to regional innovation policies.

2. Open the black box of regional innovation policies. To identify the scale and scope for innovation policy in regions, three dimensions of the heterogeneity among regions need to be considered simultaneously: *i*) the **institutional context**, which concerns the room to manoeuvre for regional institutions as defined by the national governance framework and the degree of the devolution of powers. For example, in some

countries, like Belgium, Germany and China, the sub-national share of public R&D and related spending can be 50% or higher; *ii*) the **regional innovation system**, which defines regional strengths and weaknesses for innovation and the nature of local and international relationships and networks; and *iii*) the **strategic choices** made by regions for supporting the transition towards an innovation-driven model of growth. The combination of these three dimensions increases the complexity for policy management at all levels of government, but is vital for achieving innovation policy goals.

3. Enable regions to become agents of change. Regional governments can play a determining role in identifying opportunities for transformation. Regions can act as mobilisers for driving diversification and identification of new frontiers. This search for new regional advantages requires participation of the private sector and civil society and usually benefits from complementarities with the broader national strategy. To become agents of change, regions need to adopt more sophisticated policy approaches. To this end, the following four steps are necessary:

- **Develop a vision and a strategic road map to encourage innovation.** What is needed is a shift toward outcome-driven policies based on a clear regional strategy for innovation. Regions face diverse challenges.

Three strategic priorities for regions include: *i*) building on current advantages (science push, technology-led or a mix); *ii*) supporting socio-economic transformation (reconversion or new specialisations); and *iii*) catching up (through the creation of knowledge-based capabilities and upgrading of absorptive capacity). Clarification of the broad objectives to be achieved under an overarching vision, along with their translation into measurable goals, is therefore a first step.

Regional innovation policies may suffer from a limited view of innovation. Science- and technology-based innovation covers only a fraction of the innovation potential that exists in different types of regions, according to their specific socio-economic profile. Regions need to invest in mapping the types of innovations that are most relevant for their vision, including those not necessarily measured by standard indicators. Advancing in the understanding of innovation could help regions identify strategies to mobilise innovation, science-based or not, for social goals (ageing, environment, health, etc.) and innovation in the public sector as well as job creation.

- **Design a smart policy mix** (asset-based and multi-sector). A smart policy mix aligned with the regional strategy would integrate several policy fields, vertically and horizontally. The “OECD-GOV Survey on the Multi-level Governance of Science, Technology and Innovation Policy” revealed that many regional and national governments are using the “same” types of instruments, signalling the need to strengthen synergies across levels of government for increasing policy impact.

A range of complementary instruments needs to target, to a different extent, knowledge creation, diffusion and exploitation, combining traditional instruments (such as support to human capital and skills), emerging instruments (such as new generations of S&T parks, talent and creativity support) or experimental instruments (such as public procurement). The effectiveness of policies should take into account the systemic interaction of these different instruments combined.

- **Establish multi-level, open and networked governance structures.** The combination of decentralisation, bottom-up regional initiatives, and increasing attention to place-based dimensions in national policy has resulted in greater areas of interdependence in innovation policy.

Well-designed tools for better vertical co-ordination across levels of government are required. Based on a diagnosis of the most pressing multi-level governance challenges, countries may identify and design adapted co-ordination tools. In fact, most countries report using four or more tools (e.g. dialogue, consultations, contracts, project co-financing, regional development agencies, territorial representatives, etc.). Tools that reinforce dialogue are reported as the most effective. Based on that dialogue, funding from higher levels may consider policy conditionalities associated with a smart policy mix in regions.

Horizontal collaboration of public and private stakeholders is needed to take governance beyond government. Inter-departmental commissions, high-level strategic councils and regional innovation agencies are among the tools used to achieve a multi-actor and multi-sector approach.

Targeting functional areas should be a major goal for policies. Administrative boundaries do not usually correspond to the spatial configuration of innovation and production networks. Policy approaches need to be “open”, i.e. able to support innovation and take into account national and international cross-regional linkages.

- **Foster policy learning through better metrics, evaluation and experimentation.** Regions can play a determining role in improving the quality of policy-relevant evidence, and developing monitoring and analytical capacities to support evidence-based policies.

New indicators are needed. Indicators should capture both R&D- and non-R&D-based innovation, map innovation networks in and across regions, and measure public and private innovation efforts. Understanding different regional profiles requires meaningful benchmarks and policy intelligence. Evaluations should focus not simply on inputs but on outcomes and changes in the behaviour of firms and other agents in the innovation system.

Regions can be relevant laboratories for policy. The diversity of regional situations and the unpredictability of the innovation process generate the need for a certain degree of policy experimentation. Pragmatic experimentation, which can inform national policy, needs to be backed by outcome-oriented policy evaluation.