

Policy instruments for innovation in regions

Regional innovation policies: Evolving orientations

Regional innovation policies have evolved over time, and the instruments in place reflect the orientations of successive (and overlapping) periods (OECD, 2011 Chapter 6; Laranja, Uyarra and Flanagan 2008):

- **Phase 1: Regional innovation as physical development: silicon landscapes.** Early attempts in the 1970s and early 1980s to influence regional innovation were typically focused on physical developments like science parks and the relocation of research labs. The model of innovation was the linear flow of ideas from research into industry, therefore policy focused on relocating research to those areas with low levels of R&D, as well as the development of science parks to attract research activities and to facilitate spin-offs and knowledge exchange from universities.
- **Phase 2: Supporting technology transfer and enterprise.** In the early 1980s, alongside the science park movement but much less visible, was the development of incubators and technology transfer agencies, sometimes embedded in science parks and sometimes based in other agencies. These entities became more common and central to policy in the late 1980s and early 1990s as the limitations of science parks were recognised and greater priority was given to increasing the number of innovative SMEs. Innovation policy emphasised these “softer” business support measures for technology transfer.
- **Phase 3: Regional innovation strategies and smart specialisation strategies.** Following the profusion of new initiatives during the 1980s and early 1990s, in the EU at the encouragement of the European Commission, regions began to coordinate activities through regional innovation strategies. This approach was based on the emerging understanding of regional innovation systems, including greater recognition of the importance of networks among firms and the identification of clusters. “Soft” services for innovation in small and medium enterprises (SMEs) including start-ups were promoted. The need to prioritise investments within strong areas of specialisation with high growth and differentiation potential led regions to develop smart specialisation strategies characterised by an entrepreneurial discovery process. This phase is still ongoing.
- **Phase 4: Regional science policies.** More recent years have seen a greater focus on the research base and research-driven clusters in a certain number of regions. In many cases regions have taken on greater roles in science policy as a result of devolution. The policy emphasis has returned not only to research infrastructure in the form of large science investments and science cities, but also in the form of infrastructures characterised by public-private partnerships, such as competitiveness poles and competence centres.

Policy mixes for regional innovation

Innovation policy instruments may target knowledge generation, diffusion or exploitation, or several of those objectives simultaneously. Knowledge generation includes the specific incentives and regulations for the production of scientific and technological knowledge, including mechanisms to attract talent and specific incentives for supporting R&D activities in firms. In general, regional action tends to focus on instruments supporting knowledge diffusion, taking agglomeration effects and proximity into consideration. These first two categories include mostly linear and supply-side instruments. Many regions are also active in knowledge exploitation, which includes measures directed towards the demand side of innovation in support of the application of existing knowledge

in production. The new generation of regional innovation policy instruments tends to have a more systemic approach, which seeks to minimise boundaries between generation, diffusion and exploitation by offering a mix of support for all these objectives (OECD, 2011 section 2.3).

Establishing a regional innovation agency is a common option for the development and delivery of innovation policies at the regional level.

The policy instruments most commonly found in regional innovation policy mixes are: science and technology parks; systemic initiatives in the form of networks, clusters, competitiveness poles and competence centres; innovation support services for existing SMEs; support for innovative start-ups; innovation vouchers; mobility and talent attraction schemes; and support for quality research infrastructure (OECD, 2011).

Pitfalls in regional innovation policies

The main pitfalls for regional innovation policies are the following:

- **Autarkic frameworks.** The development of an autarkic framework causes a lack of openness to outside sources of knowledge and ideas. Adopting an open perspective for regional innovation policy demands both vertical coordination between the various levels of policy intervention, as well as the development of policies crossing administrative borders and tuned to functional regions, i.e. cross-border innovation policies.
- **Lock-in problems.** The incapacity to support future-oriented development paths due to lock-in problems is a type of systemic failure. It can be avoided by combining local/regional as well as non-regional knowledge flows and learning interactions and focusing policies on knowledge-based activity areas with good future market potential through smart specialisation strategies.
- **Ineffective multi-level governance.** The failure to achieve effective multi-level governance of policies can be due to any of the following problems (OECD, 2011 section 3.2): weak information sharing across levels of government, lack of capacity at subnational level to formulate and deliver policy, insufficient financial resources for certain regions/localities, existence of policy silos at supranational/national level that undermine efforts to coordinate at the sub-national level, incapacity to address the proliferation of programmes emanating from different levels, and gaps in the allocation of responsibilities which may result in policy areas unmet at any level of government.
- **Innovation paradox.** The “innovation paradox” whereby those regions in greater need for innovation are less involved in innovation policies due to their low institutional capacity, internal capacity and resources to exploit such policy options (Oughton, Landabaso and Morgan 2002).

How regional innovation policies can succeed

To ensure effective policy mixes (OECD, 2011 section 2.3):

- **Balance among instruments.** The balance between various types of instruments should be adequate. A right balance is also to be found between instruments addressing firms in isolation and systemic relations, fostering internal and external connections, and addressing endowments in the system and behavioural changes.

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- **Synergies among instruments.** Positive interactions and synergies between policy instruments need to be revealed and maximised, and negative interactions avoided (Nauwelaers and Wintjes, 2002).
 - **Integrated instruments.** The value of integrated (“packaged”) policy instruments should be maximized.
 - **Policy coherence.** Policy domains need to act in synergy, enhancing horizontal policy coherence.
 - **Role of universities.** The role of universities in regional innovation is to be acknowledged and supported.
 - **Attract talent.** Human resources for innovation and associated policies to attract and retain talent need to be given a prominent place.
 - **Demand-side policy instruments.** Sufficient weight needs to be put on demand-side policy instruments, in particular by introducing innovation-oriented public procurement.
 - **Base funding on performance.** Performance-based funding mechanisms need to be put in place to maximize policy impacts (OECD, 2009).

To ensure effective multi-level governance of innovation, the following changes are needed:

- **Coordination tools.** A range of coordination tools should be selected and used, based upon a sound diagnosis of the source of multi-level governance challenges: regular dialogue, consultation process, agencies (multi-level), contracts, project co-financing and territorial representatives (OECD, 2011 section 3.2).
- **Monitoring and evaluation.** Better monitoring and evaluation tools are needed for regions to track behaviour and programme use by innovation system actors: the development of indicators and objectives not only reduces information asymmetries, it also builds policy capacity and serves as an effective tool for policy alignment across levels of government (OECD, 2011 section 3.4);
- **Knowledge consultants.** Active use of available knowledge and expertise on regional innovation issues should be made to provide a sound knowledge base for policy-making. Platforms such as the EU Regional Innovation Monitor fulfil this role

(<http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innov...> [1]).

OECD peer reviews of regional innovation provide analytic assessment and policy advice to governments at all levels. With the view to improve the effectiveness of OECD policies, the reviews undertake the following efforts (www.oecd.org/gov/innovation [2]):

- For regions, OECD reviews examine the strength of the regional innovation system, the appropriateness of the policy mix for the region’s needs, and the strategic use of the region’s resources given global, national, regional and local factors.
- For countries, OECD reviews assess the extent to which policies from different policy streams (e.g., regional development, science and technology, enterprise policy and higher education policy) are effective in building regional innovation systems and clusters for the range of region types in the country.

What other topics relate to regions and innovation policy?

- **Regional innovation strategies.** These are systematic, goal-oriented exercises carried out by regional partnerships with the aim of defining or revising regional innovation policies. Regional innovation strategies have been implemented in many OECD regions, notably those with important responsibilities and resources for innovation. Successful regional innovation strategies display four characteristics: (1) they embody balanced “policy mixes”, (2) they use strategic intelligence and involve policy learning, (3) they promote both local and global linkages of regional actors and (4) they are adapted to the diversity in possible regional development paths.
- **Smart specialization strategies.** A new development in regional innovation strategies, smart specialization aims to transform regional economies based on the exploitation of specific and territorially-based knowledge-based assets. These strategies focus policy support and investments on key national/regional priorities, challenges and needs for knowledge-based development; they build on each country/region’s strengths, competitive advantages and potential for excellence; they support technological as well as practice-based innovation and aim to stimulate private sector investment; they get stakeholders fully involved and encourage innovation and experimentation; and they are evidence-based and include sound monitoring and evaluation systems.
- **Cluster policies.** The purpose of cluster policies is to strengthen regional economies, by supporting dynamics of market and knowledge exchanges among firms and other actors in regions and in international value chain networks, serving as the local nodes in global networks. The cluster approach facilitates analysis of innovation needs to improve innovation policy and can serve as a useful framework for coordinating different instruments for innovation policy.
- **Role of government.** Central governments have a key role in defining national innovation strategies, and regions are increasingly active in implementing their own innovation policies. This creates a need to ensure coherence and complementarity between national and regional innovation policies. Contracts for supporting multi-level governance of innovation policy can be used between levels of government in order to manage interdependencies in innovation policy and bridge gaps in information, capacity, financial resources, and administrative and policy insufficiencies.
- **Regional innovation agencies.** These organizations are in charge of delivering and coordinating innovation policies implemented at the regional level. Establishing regional innovation agencies is a step taken by many policy makers, both at national and regional levels, that responds to a general “agencification” trend—that is, the separation between decision-making and execution, a widespread trend notably in the innovation policy domain. This allows for more flexibility, permanence, independence and responsiveness to changing economic needs. Regional innovation agencies have a key role to play in improving co-ordination and effectiveness of innovation policies at the regional level.

References

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[1] <http://ec.europa.eu/enterprise/policies/innovation/policy/regional-innovation/monitor>

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