

Cluster policy

B 2-2

Clusters and cluster policy

A cluster is defined as “a geographic concentration of interconnected companies and institutions in a particular field.”¹¹⁰ Its effect on individual cluster actors is based on the fact that their inventive, innovative and – building on this – economic performance not only depends on their own efforts, but is also influenced by tangible and intangible resources outside their own organisation that are geographically concentrated within a cluster.¹¹¹

The extent and accessibility of these resources are decisive for the success of cluster actors and the cluster as a whole. Through interaction, networking and exchange via local factor markets, as well as via value chains, the actors provide each other with tangible and intangible resources such as research infrastructure, special services or specialised staff. Geographical proximity makes it easier for them to find out about each other, make contact and interact. This leads in particular to knowledge and information spillovers, enabling them to learn from each other and to use synergies that raise innovative performance and productivity.¹¹²

A cluster thus constitutes a system of actors who are connected with each other in many different ways and in this way jointly promote innovation activities. Via these interactions, a cluster constantly develops in a self-enhancing way. However, this process often proves to be error-prone and distorted, leading to low levels of R&D and R&I expenditure, to under- or unused cooperation potential, and to technological lock-in constellations (cf. Box B 2-2-3). To address these market and system failures, various measures which can be subsumed under cluster policy have been introduced.

Cluster policy in Germany

Numerous cluster initiatives have been launched over the past 20 years in Germany at both the Federal and Länder levels.¹¹³ According to a current survey on behalf of the Commission of Experts, in the recent past more than 430 clusters have received funding in Germany (including European cluster measures, see Figure B 2-2-1). Currently ongoing measures at the federal level alone include the ‘Leading-Edge Cluster Competition’, ‘go-cluster’, the ‘Internationalisation of Leading-Edge Clusters, Future-oriented Projects and Comparable Networks’, as well as several funding programmes from the ‘Innovation Initiative for the New German Länder – Entrepreneurial Regions’ (cf. Figure B 2-2-2).¹¹⁴

The BMBF supports innovation clusters in cutting-edge technologies with the non-thematic ‘Leading-Edge Cluster Competition’, launched in 2007 within the framework of the High-Tech Strategy. In three rounds, 15 cluster initiatives were selected and subsidised with up to 40 million euros¹¹⁵ in funding to support them on their way into the top international group of their respective technology field, or to consolidate a top position already achieved. The measure was aimed at mobilising regional innovative potential and, as a consequence, increasing economic growth, creating new jobs, and making Germany more attractive as a location for innovation and business.¹¹⁶

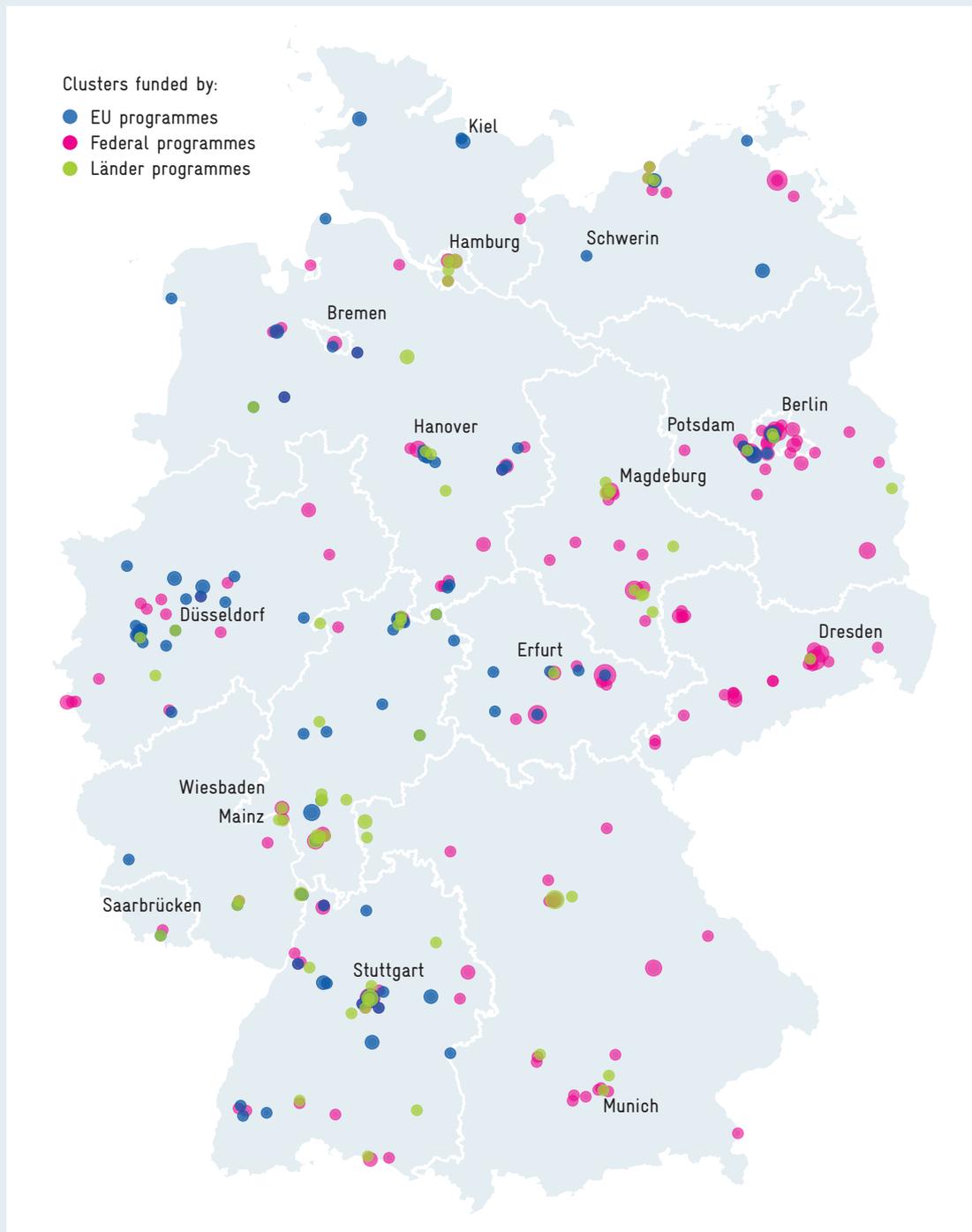
The BMWi has also been offering a cluster-policy measure since July 2012: the ‘go-cluster’ programme.¹¹⁷ It is aimed at the promotion of cluster management and the development of novel cluster services.¹¹⁸ A total of 3.3 million euros was spent during the first funding period up until the middle of 2015.¹¹⁹ According to the BMWi, approximately the same amount of funding has been earmarked for the current programme period (mid-2015 to mid-2018).

Fig. B 2-2-1

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data

Clusters currently funded by the EU, the Federal Government and the Länder

The diagram shows all publicly funded cluster initiatives (the dots mark the locations of the respective cluster management) that were still funded at the time of the survey in December 2016, or whose funding expired in 2015 at the earliest. Where two (three, ...) cluster initiatives are funded in one postcode area, the size of the respective dot is doubled (trebled, ...).

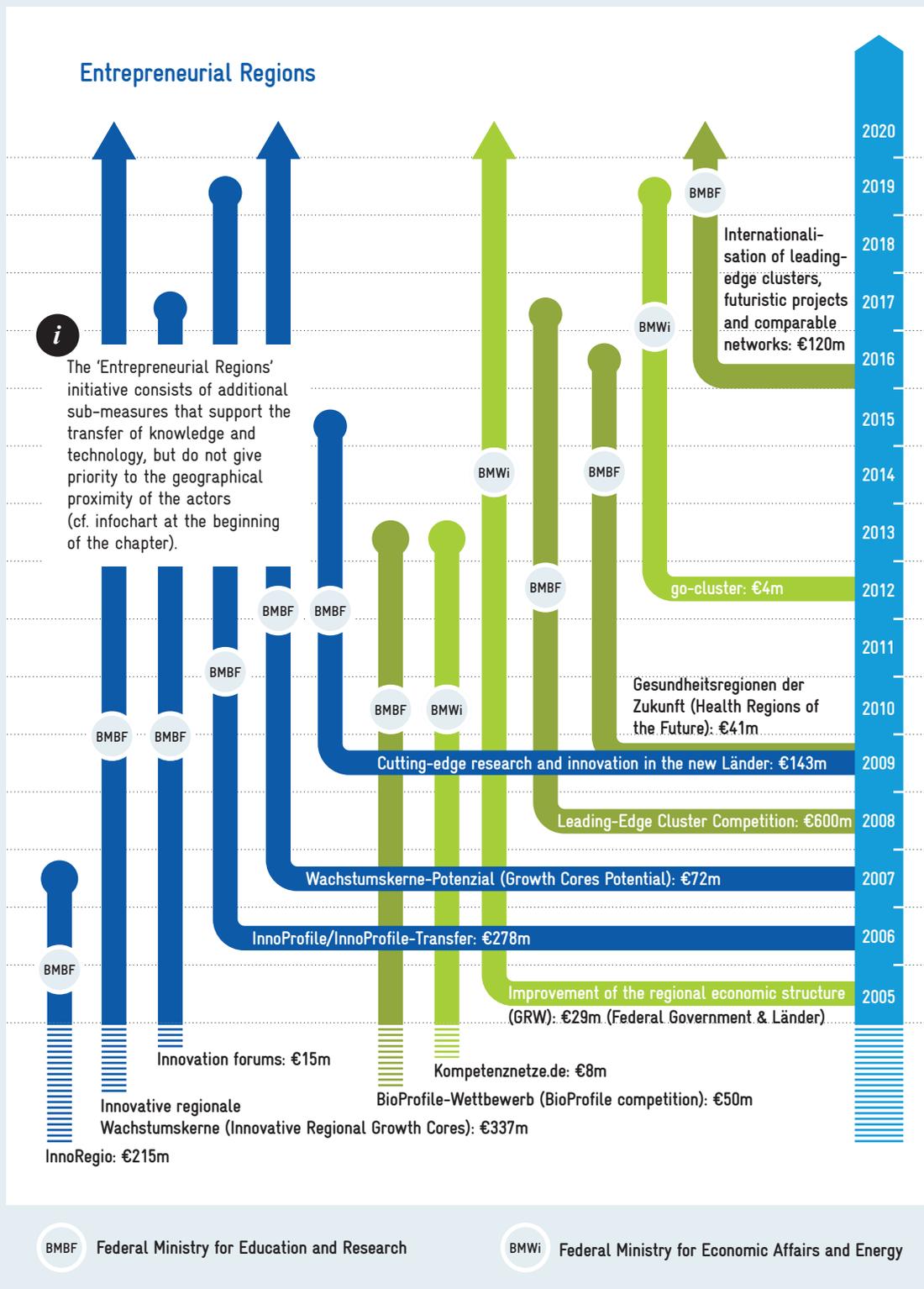


Source: own diagram on the basis of written information provided by the Institute for Social Research.

Overview of the Federal Government's cluster-policy measures

Fig. B 2-2-2

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All the figures correspond to approved funds. Last revised January 2017.
 Source: written information provided by BMBF and BMWi.

Box B 2-2-3

Economic justification of cluster policy

The aim of cluster policy is either to correct (at reasonable costs) market and system failures¹²⁰ which may hinder the emergence of a cluster and its early growth¹²¹, or to support an existing cluster in its development towards the top international group of its respective technology field.

The reasons for market failure in clusters can be that positive external effects are not taken into account, or industry-specific public goods such as basic

research are lacking. Furthermore, in the case of increasing economies of scale, the problem can arise that the tipping point from which on the agglomeration process reinforces itself cannot be reached without state support.

A system failure with respect to intended knowledge and information spillovers may occur, when, e.g., the degree of interconnectiveness and interaction between the cluster actors is too low and thus the knowledge and informa-

tion flows are too small. Reasons here can, for example, include high start-up costs for building networks or a lack of trust between potential partners.¹²²

Another manifestation of system failure can be a technological lock-in of a cluster. In such case, cluster actors have focused too narrowly on a technology that is no longer future-proof, and it is hardly (or no longer) possible for the cluster to change by its own efforts.¹²³

Since the end of 2014, the BMBF has been specifically funding the ‘Internationalisation of Leading-Edge Clusters, Future-oriented Projects and Similar Networks’.¹²⁴ This funding scheme, which will run at least until the end of 2018 (with the option of an extension until 2024), aims to encourage the selected clusters and networks to intensify their existing contacts with international innovation regions. The funding totals up to four million euros respectively (totalling a maximum of 120 million euros by 2024). As a result of the first of a total of three competition rounds, the conceptual phases of eleven projects are initially funded over two years; in order to implement the strategies this will be followed by the promotion of international research, development and innovation projects for periods of up to three years.

The BMBF’s ‘Innovation Initiative for the New German Länder – Entrepreneurial Regions’¹²⁵ implemented since 1999 combines several funding initiatives and instruments which have been focusing on different phases of the innovation process, while simultaneously taking into account the special features of east Germany’s innovation structures. Since 2016, the programme has been developed further into a Germany-wide innovation-funding concept to support regions facing special challenges of structural change.¹²⁶ The total volume of the cluster measures is difficult to assess, but it is likely to be more than 40 million euros per year.¹²⁷

Impact and effectiveness of cluster policies

Cluster policy is used in different sectors of the economy, during different industrial life-cycle phases, and in different socio-economic contexts.¹²⁸ This – and the broad diversity of cluster-policy measures in terms of objectives, design and implementation – makes it difficult to compare and evaluate the effectiveness and efficiency of the various initiatives.

An evaluation of the ‘Leading-Edge Cluster Competition’ conducted in 2014 revealed positive activation effects, e.g. in terms of the provision of resources, the quantity and quality of the supply of human capital, the density of connections among the actors, and the emergence of new training facilities.¹²⁹ At the same time, the competition led to a documented mobilisation effect, even in the applicant groups that were not selected. A point of criticism was that in some cases the measure led to an excessive focus on the respective local network. It was also shown that the evidence on activation effects created by the ‘Leading-Edge Cluster Competition’ on R&D was not uniform and that these effects were not higher compared to companies funded by other schemes.

The BMWi has conducted a study to determine the satisfaction level of participants in the ‘go-cluster’ funding programme.¹³⁰ The respondents referred mainly to marked professionalisation and learning effects, as well as reputation gains.¹³¹ On the basis of

the evaluation methods used, it has not been possible to determine whether the programme led to an increase in innovative activity.

The measure entitled ‘Internationalisation of Leading-Edge Clusters, Future-oriented Projects and Similar Networks’ will be evaluated by an accompanying research project called InterSpiN, which aims to assess the impacts of internationalisation efforts.¹³² The idea is to use the evaluation results for designing future measures of cluster promotion and also for the strategic orientation of clusters that are not funded.¹³³ At present, it is not yet clear what methods will be used and whether they will provide a basis for robust conclusions.

Evaluations based on comparative group analyses of the medium- to long-term effects of the different programmes of the ‘Innovation Initiative for the New German Länder – Entrepreneurial Regions’ are not yet available.¹³⁴

Overall, the instruments of cluster policy in Germany over the past ten years have been comprehensively applied in a geographically broad manner as well as in many areas of high-value and cutting-edge technologies. Activation effects were detected in individual programmes. The observation periods are as yet too short – or else there is a lack of relevant evaluations – to document sustainable effects of specific funding schemes.