



# Support to Clusters in EU Regional Policy

The Cases of Poland,  
the Czech Republic and Croatia

with financial support from  
Federal Ministry of Education and Research (BMBF)

This study is part of the research project "Identification and function of research clusters in Central and Eastern European countries" of the Fraunhofer Centre for Central and Eastern Europe on behalf of and with financial support from the Federal Ministry of Education and Research (BMBF), department 113 (project funding reference number 16 I 1605).

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Leipzig, May 2011

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# 1 Introduction

In the past 10-20 years one could witness a shift of paradigm in regional policy, both at the national and regional level as well as at the European level. The support of selected industries tied to specific regions is no longer on the top of the agenda.<sup>1</sup> Instead, the focus lies increasingly on many diverse kinds of policies that are meant to foster the creation of new economic structures with high growth potential and therefore imply positive effects for the economic development of a region. Innovation and regional competitiveness have become keywords of nowadays economic development strategies. Correspondingly, the EU cohesion policy increasingly follows the path of the Lisbon strategy and its successor strategy EU2020. Their credo is strengthening knowledge generation and fostering innovation *and*, thereby, stressing and addressing the regional dimension of these processes. This shift in policy can be traced back to a changed perception of innovation processes; networking, mutual learning, exchange of information between all participating categories of actors in government, university and industry (see Triple-Helix-Model) lie at the core of the new innovation paradigm. Innovation research has shown that establishing links and channels of communication between all three types of actors but also between two or more actors of the same category can significantly spur the innovation process.<sup>2</sup> Geographical proximity is, thereby, one variable that often shows strong influence on the quality and quantity of such interaction processes. This can be regarded as the starting point for many so-called “place-based” policy measures<sup>3</sup> that show a strong focus on networking and exchange, in order to stimulate regional innovation processes and economic specialization.<sup>4</sup> These policy measures are frequently referred to as “cluster policies” or “cluster-based” policies.

As mentioned above, the EU cohesion policy is increasingly getting aligned with the objectives of the Lisbon/EU2020 strategy including the distribution of financial resources from the EU structural funds that are the main instruments of the cohesion policy. Particularly, for the Central and Eastern European member states (most of their regions are so-called “convergence regions”), the strategic guidelines from the European level as well as the European Regional Development Fund (ERDF) and the European Social Fund (ESF) play a crucial role in defining and implementing their innovation policies, including those aimed at developing clusters. These policies are implemented mainly through the so-called Operational Programmes (OPs), which are drawn by each member state in line with the strategic guidelines from the European

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<sup>1</sup> This does not imply that such policies are not existent in Europe anymore.

<sup>2</sup> See Leydesdorff/Etzkowitz (1998).

<sup>3</sup> See Barca (2009).

<sup>4</sup> See Porter (1990).

level. In the following chapter the OPs of Poland and the Czech Republic (as two major new territorial member states in CEE) will be systematically analysed with regard to their cluster relevance, i.e. the focus will be laid on policy measures that are meant to foster the development and/or management of clusters. In order to complement the perspective, a brief outlook on the Croatian case will be provided. Croatia has been chosen as an example for a country that is currently in its pre-accession period and tries to approximate its own strategic policy objectives to the guidelines set by the European Commission.

## 2 Methodology and Data

The analysis of cluster policies in Poland and the Czech Republic is solely based upon the Operational Programmes (including analyses and reports on them) resulting from the EU cohesion policy.<sup>5</sup> Policy measures that are designed and implemented outside the framework of the Operational Programmes will not be specifically regarded, as the focus of this report lies on the EU cohesion policy and its cluster-relevant implementation in the selected countries (as regards Poland and the Czech Republic). Furthermore, cluster policies that are of pure national or regional origin (i.e. without any EU involvement) play a minor role in Poland and the Czech Republic. The specific OPs are laid down in the corresponding National Cohesion Strategy or National Development Plan respectively for the years 2007 to 2013 that, again, refer to the Community Strategic Guidelines on Cohesion Policy (2007-2013). These programmes have been analysed with regard to their relevance to cluster-/ network building. Cluster policies in this report are understood as policy measures that specifically support the establishment, development, and management of formal (also informal) links and interaction patterns between several enterprises as well as between several enterprises and research facilities and/or other (public) institutions, in order to exchange knowledge and information and build up cooperative relations. However, in some cases specific policy measures were included, although they do not follow this strict focus but, for instance, show other aspects of technology transfer and/or some elements of human development (e.g. training, advisory services). This is due to the political praxis that often designs policy measures/programmes, which cannot be viewed as strictly belonging to one certain category. It also results from the system of categorisation of structural funds introduced by the EU in 2006.<sup>6</sup> This categorisation of structural funds' interventions does not include

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<sup>5</sup> The reference period for Poland and the Czech Republic is the current EU financial period 2007-2013. The support programmes under the European Territorial Cooperation Objective have been excluded from the analysis. Both their importance for the purpose of this report as well as the relative weight in terms of financial means are rather small.

<sup>6</sup> See European Commission (2006).



any certain category for “clusters”. Rather it groups measures that are targeted at fostering cooperation in the fields of RTD and innovation; that makes it very difficult to exactly identify the amounts allocated towards cluster activities in a narrow sense. One measure, for instance, can include expenses of two or more categories of intervention. Even on a lower level, some single funded projects can fall under two or more categories simultaneously. Nevertheless, there are basically three categories of intervention that aim, among others, at clustering; though the last appears to be practically less relevant (see section 3.1):<sup>7</sup>

- **Category 03 under priority theme “Research and technological development (R&TD), innovation and entrepreneurship”:** Technology transfer and improvement of cooperation networks between small and medium-sized businesses (SMEs), between these and other businesses and universities, post-secondary education establishments of all kinds, regional authorities, research centres and scientific and technological poles (scientific and technological parks, technopoles, etc.);
- **Category 05 under priority theme “Research and technological development (R&TD), innovation and entrepreneurship”:** Advanced support services for firms and groups of firms;
- **Category 74 under priority theme “Improving human capital”:** Developing human potential in the field of research and innovation, in particular through post-graduate studies and training of researchers, and networking activities between universities, research centres and businesses.

In this context the relevant priority axes and sub-priorities of the OPs will be identified. Furthermore, the financial means allocated to these priorities will be accumulatively shown.<sup>8</sup> This will provide an insight into the relative importance of cluster policies within the EU cohesion policy in Poland and the Czech Republic in general, and more specifically, within the innovation-oriented policies funded in this framework. As for Croatia the Instrument for Pre-Accession Assistance (IPA) on the one hand as well as national policy programmes on the other hand are the main source of information and data that will be regarded here. However, the availability and/or the accessibility of data providing detailed information on the implementation of cluster policies is lower than in the EU member states Poland and the Czech Republic.

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<sup>7</sup> See European Commission (2006).

<sup>8</sup> Most of the figures that express percentage shares and sums of several cluster related policy measures are results of own calculations. These are based upon the figures provided by the respective documents and reports (mainly OPs) of the responsible authority.

## 3 Cluster policies in the Operational Programmes of Poland and the Czech Republic

### 3.1 Poland

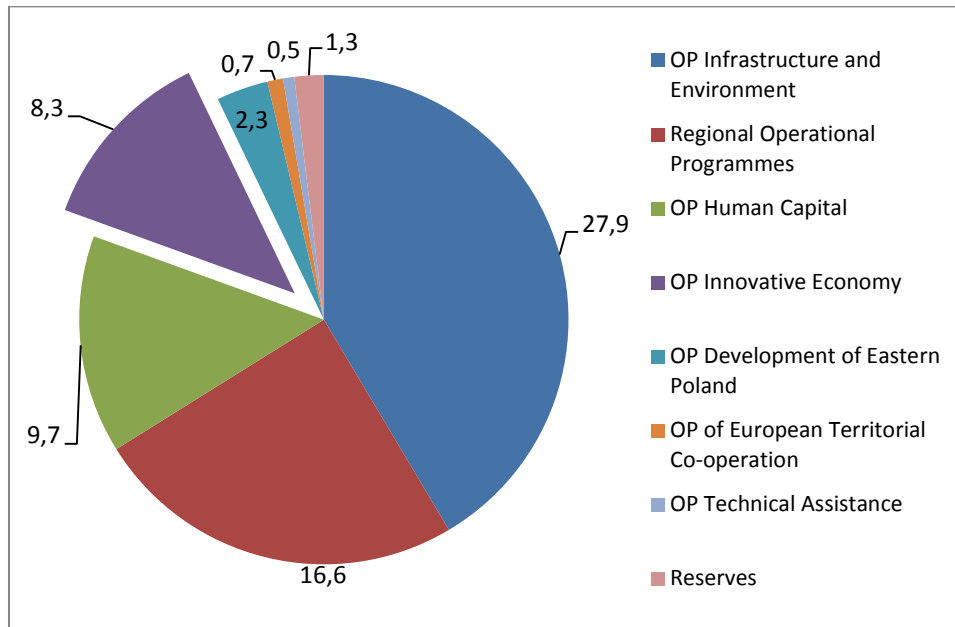
Policies that focus specifically on cluster development are rather new in Poland. In recent years, however, Poland has been experiencing an enormous growth of cluster initiatives and similar networks between companies, local authorities and/or research institutions. This partly can be due to political and financial stimuli provided by the European Union to its member states, particularly to the "Convergence Regions" such as Poland (Matusiak 2009: 27pp.; Radlo 2010; Ministry of Regional Development 2007: 29). Polish scholars often describe many cluster initiatives or business and innovation centres as strong top-down approaches by policy-makers, companies and research institutions. Such formal networks frequently do not reflect the efforts of bottom-up clustering, i.e. strengthening links and interaction between actors that can potentially benefit from each other and, hence, contribute to develop a competitive advantage in a certain field and region (Radlo 2010: 299). This more or less obvious rent-seeking behaviour of some potential cluster actors, the high dependency on public subsidies of many clusters (both functioning as well as only formally existing cluster initiatives) and the relatively little experience of authorities in effectively allocating funds in this field make cluster policies a big challenge for Polish policy-makers.

Basically, cluster policy in Poland is determined by the National Cohesion Strategy 2007-2013 that is the key strategy paper for the implementation of the EU cohesion policy (see above) and is itself under implementation through five Operational Programmes on the national level and 16 regional Operational Programmes (ROPs) on the regional level; one for each of the 16 Polish NUTS-2-regions, the so-called voivodships. Before the financial period 2007-2013, there were single cluster support programmes partly with financial support of the European level. But these funds were comparably low and the measures have been stopped or integrated into corresponding measures under the current Operational Programmes.<sup>9</sup> Figure 1 illustrates the distribution of EU funds (mainly ERDF, ESF and CF) among the Operational Programmes.

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<sup>9</sup> There were two major programmes implemented by the Polish Agency for Enterprise Development between 2004 and 2007: „Program szkoleń promujących clustering” (Training Programme to Promoting Clustering) and "Wsparcie na rozwój klastra" (Support for the Development of Clusters).

**Figure 1:** Allocation of EU funds in Poland (2007-2013), by Operational Programme, in billion EUR



Source: Own illustration; Ministry of Regional Development of Poland (2007a).

The Polish cluster policy tries to capture three territorial dimensions in its activities: (1) regional cluster policy that takes place at the NUTS-2 level, i.e. on the voivodship level and is mainly implemented by the 16 ROPs; (2) national cluster policy that is mainly reflected by the Operation Programmes Innovative Economy, Development of Eastern Poland and to a lesser extent Human Capital; (3) transnational cluster policy that aims at a stronger internationalisation of Polish clusters and at strengthening cross-border approaches in Polish cluster policy. Generally speaking, the key player in this policy field is the Polish Agency for Enterprise Development (PARP). It is responsible for the implementation of substantial parts of all three relevant national OPs mentioned above and is active in trans-European cluster initiatives such as the European Cluster Alliance.<sup>10</sup>

The most important OP for cluster policy on the national level is the OP Innovative Economy (OP-IE) that aims at raising the rather low innovative capacities of the Polish economy. The overall indicative budget of the OP-IE for the years 2007-2013 amounts to roughly EUR 9.7 billion, of which about 85 % is co-financed by the European Union structural funds, particularly by the ERDF. Whereas the Ministry of Regional Development is the major coordinating body for the allocation of European funds in Poland, it is mainly the Polish Agency for Enterprise Development (PARP) in association with the Ministry of Economy that are responsible for the implementation of the measures relevant to enterprise networks, business and innovation support institutions and explicit

<sup>10</sup> See Kladz/Kowalski (2010).

cluster development support. The OP-IE is based upon 9 priority axes, of which only priority axis five (“Diffusion of Innovation”) provides direct support to cluster formation and management. Sub-priority 5.1 can be regarded as the key support instrument of Polish cluster policy on the national level. The programme “Support for the development of supra-regional cooperative relations” specifically addresses groups of enterprises including production chains of large enterprises and SMEs and technological cooperation platforms also comprising research institutions. The sub-priority’s budget amounts to EUR 104 million for 2007-2013, which equals ~26 % of the priority axis’s budget and ~1 % of the OP-IE’s budget. This programme provides funding for clustering only at supra-regional level, though. Regional clustering efforts can be subject to cluster support programmes included in the ROPs (see below).

Furthermore, there exists a range of support measures that do not explicitly foster clustering but also set a strong focus on networking between companies and research institutions. The biggest amount of priority axis five is, for instance, allocated towards sub-priority 5.3 (Support to Innovation Centres), which aims at the development of a “supportive environment” for entrepreneurs. Together with sub-priority 5.2 (“Support to networks of intermediary organisations providing innovation services at national level”) this financial instrument largely contributes to the numerous expansion of technology parks, transfer centres, incubators and agencies that provide a diverse range of business-oriented services, often for (high-tech) start-ups and innovative entrepreneurs, in general. According to Polish policy-makers such facilities play an important role, in order to “support networking and clustering”. There remain, however, doubts, whether the services those fast growing “business and innovation centres” offer, are really of sufficient quality and capable of providing significant impulses to the Polish entrepreneurial environment.<sup>11</sup> Nevertheless, sub-priorities 5.2 and 5.3 that together amount to EUR 255 million, in the Polish context can be regarded as cluster policy in a broader sense.<sup>12</sup> Altogether sub-priorities 5.1 to 5.3 account for about 3.7% of the whole OP-IE.

A look at the implementation rate<sup>13</sup> of priority axis 5 reveals interesting insights. Whereas large shares of the respective funds under sub-priorities 5.2 and, particularly, 5.3 have been already allocated to specific projects, the implementation of sub-priority 5.1, which is the core of Polish cluster policy (national level), seems to be running less smoothly. Only ~17% of the allocated funds have been assigned to respective projects so far (see Table 1). This extraordinary low implementation rate might hint on a certain kind of mismatch between the existing demand of and the actual opportunities the programme can offer to its target groups. Indeed, there seem to be coordination problems

<sup>11</sup> See Matusiak (2009): 27 pp.; Laskowska-Rutkowska (2010).

<sup>12</sup> See Ministry of Regional Development of Poland (2007b): 26.

<sup>13</sup> The implementation rate is here reflected by the share of allocated funds that have been disbursed in terms of signed contracts with the beneficiaries.

between this measure and other similar measures embedded in the ROPs (see below).<sup>14</sup> Furthermore, difficulties with the design and regulatory framework of sub-priority 5.1 have been identified. In reaction to its weak performance, the managing authority has initiated amendments of the respective regulation in September 2010, which are under implementation since 2011.<sup>15</sup>

Apart from the OP-IE there are two more OPs, whose (sub-) priorities offer opportunities for networking activities between companies and research institutions and aim at enhancing links between science and economy, but do not all have a focus on cluster development itself. The OP Human Capital (OP-HC), for instance, includes measures to enhance the stock of "Regional human resources for the economy" (priority axis 8, sub-priority 8.2 "Transfer of knowledge").<sup>16</sup> The indicative budget for sub-priority 8.2 amounts to roughly EUR 318 million (85 % is co-financed by the ESF) in the period 2007-2013 and is mostly administered by specific departments of the voivodships' Marshall's Offices at regional level. However, most projects funded under this category seem to be rather business-academia hybrids such as university spin-offs and, therefore, contribute to an increased technology transfer rate rather than to *directly* help building up clusters.<sup>17</sup> Under the OP Development of Eastern Poland (OP-DEP) one type of measures has to be regarded as relevant to cluster policies and is subject to funding. Priority axis 1 ("Modern Economy") includes the *"technology transfer and streamlining the cooperation network between SMEs, between SMEs and other enterprises, universities"* (Ministry of Regional Development 2007b: 85); specifically sub-priority 1.4 ("promotion and cooperation) aims at enhancing cooperation between companies and between these and research institutions. The total budget of priority axis 1 amounts to roughly EUR 930 million for 2007-2013; this is the largest share of the OP-DEP.

As for the thematic focus, one can observe that at least at the programme level there are no certain thematic fields, which are specifically targeted by the mentioned supporting measures. All these measures at the national level (including the OP-DEP) are thematically opened. However, an in-depth screening of the funded projects might reveal certain patterns of funding.

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<sup>14</sup> See Ministerstwo Rozwoju Regionalnego (2009): 67.

<sup>15</sup> See Ministerstwo Rozwoju Regionalnego (2010): 103.

<sup>16</sup> These measures fall under category 74; since the OP-HC comprises a clear regional dimension and allocates certain amounts to each voivodship, none of the Polish ROPs includes this category.

<sup>17</sup> [http://www.efs.gov.pl/Strony/lista\\_beneficjentow\\_POKL.aspx](http://www.efs.gov.pl/Strony/lista_beneficjentow_POKL.aspx) (last accessed: 20/04/11).

**Table 1:** Use of funds for cluster-related policy measures in OPs in Poland (national level)

Priority Axis No./Name	Number of funded projects*	Allocated amount, zł.*	% use of public means*
<b>OP Innovative Economy</b>			
5. Diffusion of innovation			
5.1. Support for the development of supra-regional cooperative relations	5	66,387,237.91	15.96%
5.2. Support to networks of intermediary organisations providing innovation services at national level	30	207,226,348.01	79.09%
5.3. Support to Innovation Centres	11	766,812,806.90	101.20%
<b>OP Development of Eastern Poland</b>			
1. Modern Economy			
1.4. Promotion and cooperation	19	155,805,211.07	84.38%
<b>OP Human Capital</b>			
8. Regional human resources for the economy			
8.2. Transfer of knowledge	381	525,289,037	41.60%

Source: Author's own illustration; European Funds Portal of the Polish Ministry of Regional Development (as of Dec. 2010 to March 2011). \* Figures refer to the (project) status "agreement signed".

At the regional level, the general objectives and designs of cluster support measures are often very similar to their counterparts at the national level described above. As at the national level the Polish Ministry of Regional Development is in charge of the overall coordination of the ROPs including the corresponding communication efforts with the European Commission (i.e. ROP Coordinating Authority). The ROPs are developed and implemented by the so-called Managing Authorities at the voivodships' Marshall's offices. They are responsible for the selection of projects to be funded, initiating the payments as well as for controlling and monitoring the implementation process.

Basically, all 16 ROPs include at least one sub-priority that offers possibilities for establishing regional networks and/or clusters involving mainly SMEs and research institutions. Most of them aim at the development of facilities that belong to the category "business and innovation centres", i.e. technology parks, transfer centres, incubators etc. However, there is often no strict distinction between the development of such supporting facilities and clusters or networking. Unlike at the national level, the relevant sub-priorities of the ROPs more often identify and name specific branches or technologies those measures are meant to target on; in about half of such cases the focus re-

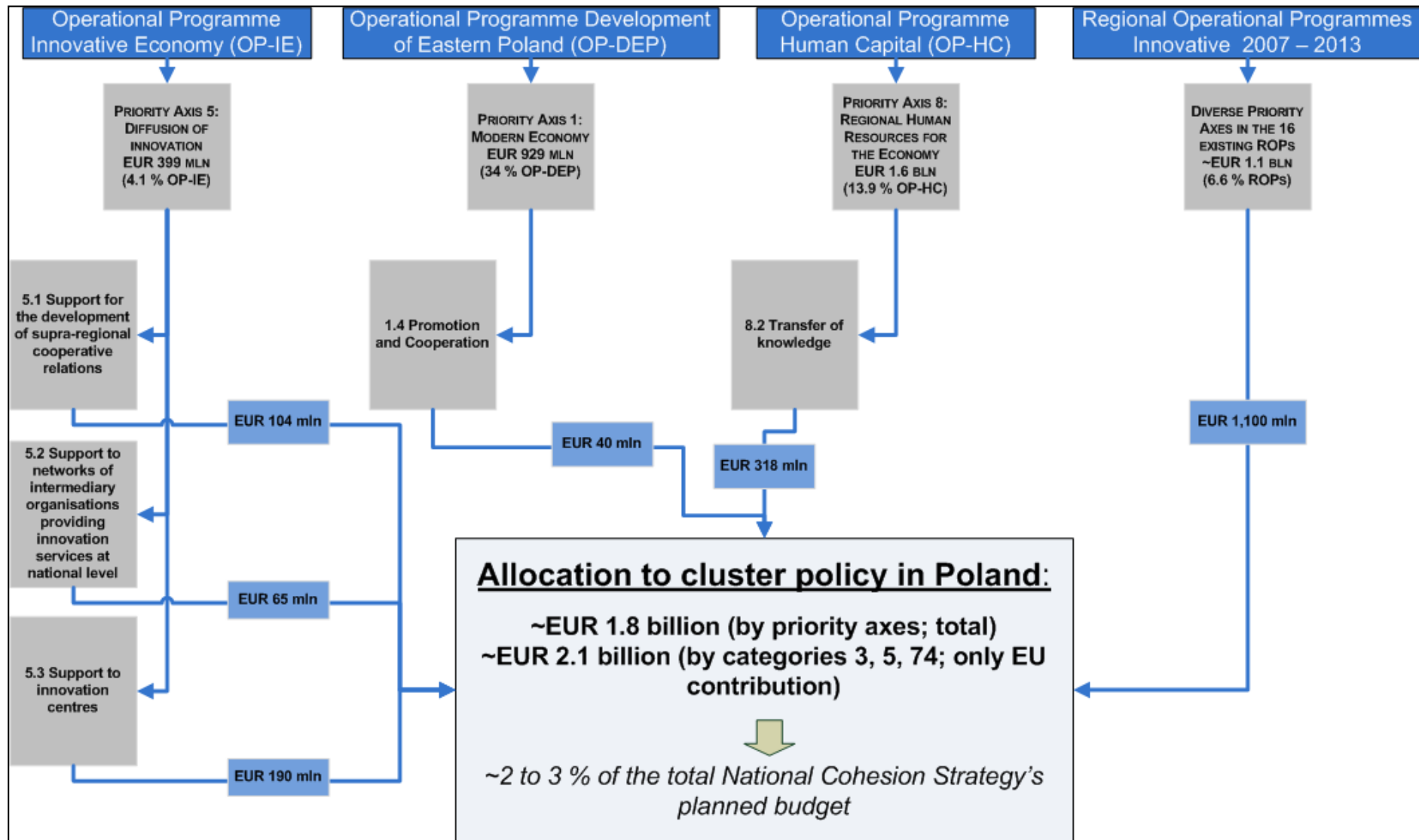
mains rather broad, though. Altogether roughly another EUR 1.1 billion is allocated towards measures that include the support of clusters, networking and knowledge transfer via the ROPs<sup>18</sup>; the EU contribution stems from the ERDF. This shows the large relative importance of the ROPs in Polish cluster policy; in contrast, the Czech Republic follows another approach as will be shown below. Generally, the applied algorithm for the allocation of funds among the 16 voivodships favours both regions that are economically lagging behind and “development locomotives” simultaneously (Ministry of Regional Development 2007c: 32).

Figure 2 illustrates the contributions of the Polish OPs to cluster policies in a broader sense as described above.

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<sup>18</sup> Categories 3 and 5 together sum up to an amount of about EUR 714 million from the EU funds (excluding the national contribution). This is about 4.5 % of the total EU contribution for all 16 ROPs.

**Figure 2:** Cluster policy in the Polish Operational Programmes 2007-2013



Source: Author's own illustration.

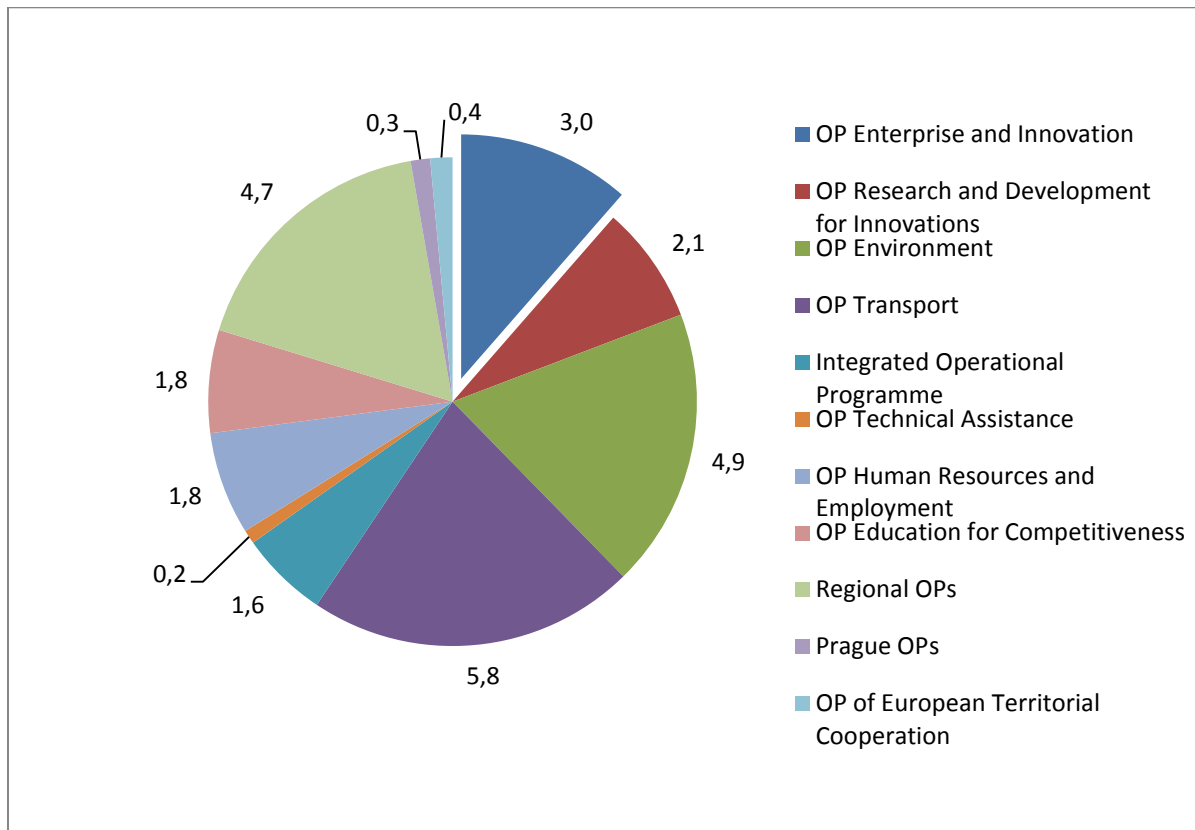


### 3.2 Czech Republic

Similar as in Poland, cluster policy in the Czech Republic is still a rather recent trend within the set of economic policy instruments. Again, the European Union has played a major role in getting this topic on top of the agenda embedded into the broader context of innovation policy. Since the EU membership in 2004, the Czech government has set up a range of policy strategy papers aiming at the support of cluster development such as the Operational Programme Industry and Enterprise (2004-2006) or the National Cluster Strategy (2005-2008). Since the beginning of the currently running financial period of the EU, the efforts seemingly have been bundled and streamlined on the national level. The overall coordination lies with the so-called National Coordination Authority that is embedded into the Ministry of Regional Development. Although, the general structure of strategic programmes resulting from the EU cohesion policy is more complex in the Czech Republic than in Poland. Unlike Poland, the Czech Republic does not completely fall under the convergence objective of the EU regional policy; Prague is the only NUTS-2 region in the country that exceeds the threshold due to its above average economic performance. Therefore, most operational programmes of the Czech Republic exclude Prague. The allocation of funds among the Operational Programmes in the Czech Republic is illustrated in Figure 3.

The key instrument of the Czech Cluster Policy is embedded into the Operational Programme Enterprises and Innovation (OP-EI) at the national level. The managing authority of the OP-EI is the Czech Ministry of Industry and Trade MIT (Structural Funds Section). Whereas the MIT bears the overall responsibility, some intermediate bodies play key roles in the programme's implementation. These are the Ministry's agency CzechInvest and the CMZR Bank. The latter is in charge of granting loans, guarantees and the management of other financial instruments applied in the OP-EI's implementation process. The OP-EI consists of 7 priority axes, of which priority axis 5 ("Environment for Enterprise and Innovation") is the one most relevant to cluster policies. Priority axis 5 with about EUR 1.08 billion makes up the largest share of the OP-EI (~30.2%); the funding rate of the ERDF is again 85 %.

**Figure 3:** Allocation of EU funds in the Czech Republic (2007-2013), by Operational Programme, in billion EUR



Source: Ministry of Regional Development of the Czech Republic (2007).

The priority axis comprises three sub-priorities, i.e. cooperation platforms, infrastructure for human resources and business infrastructure. The first sub-priority, *5.1 cooperation platforms*, is the main policy instrument for cluster support in the Czech Republic; it is of cross-sectoral nature, i.e. thematically open as most of the cluster policies in Poland. The aim is to foster “*cooperation between enterprises, scientific research and educational institutions at regional and national levels*”<sup>19</sup>. Three specific programmes have been designed, in order to implement this sub-priority: (1) Cooperation – Clusters, (2) Cooperation – Technology Platforms and (3) Prosperity. Particularly, the two latter ones explicitly aim at the establishment of “*innovation facilities*” such as technology parks and incubators as one form of cooperation platform. 43% (~EUR 467 million) of the funds of priority axis 5 are allocated towards sub-priority 5.1, which makes up 13% of the whole OP-EI.

Moreover, the Operational Programme Research and Development for Innovation (OP-R&DI) plays a role for the Czech cluster policy in a broader sense. The OP’s managing authority is the Ministry of Education, Youth and Sports (there

<sup>19</sup> Ministry of Industry and Trade (2010): p. 97.

are no intermediary bodies involved). Particularly, the priority axes 1 (“European Centres of Excellence”), 2 (“Regional R&D Centres”) and 3 (“R&D commercialisation and popularisation”, sub-priority 3.1) play a role for the support of networking activities including clustering. Altogether an amount of EUR 1.86 billion has been allocated towards these three priority axes (76 % of the OP-R&DI). Intervention category 3, which is relevant to all three axes, amounts “only” to EUR 266 million, though (categories 5 and 74 are not included into the OP-R&DI). Instead, the largest share of the OP-R&DI goes into category 2, i.e. R&D infrastructure including buildings etc. Nevertheless, in all three priority axes the support of clustering is explicitly named as one form of innovation network support that is considered under this OP. Since both the OP-EI as well as the OP-R&DI (both national level) comprise measures that aim, among others, at the support of cluster development and management, mechanisms for horizontal coordination have been established. The two ministries in charge, therefore, have installed a horizontal coordination system that aims at exploiting synergies and avoiding unnecessary overlappings in funding. Whereas priority axes 1 and 2 of the OP-R&DI specifically target large-scale projects (more than EUR 50 million), sub-priority 3.1 shows some thematic overlappings with sub-priority 5.1 of the OP-EI. Therefore, both ministries are closely working together during the projects’ approval processes (e.g. joint databases, joint calls, joint evaluation of proposals etc.).<sup>20</sup>

Furthermore, the Operational Programme Education for Competitiveness allows for networking and clustering activities. It primarily covers the aspect of human resources in technologically oriented networks, platforms or clusters. Priority axis 2 (“Tertiary Education, Research and Development”), among others, supports educational and training activities that are tied to cooperative networking activities such as for the formation of clusters (intervention category 74).<sup>21</sup> These activities are supported under sub-priority 2.4 “Partnerships and networks” and is very similar to the Polish measure 8.2 Transfer of knowledge in the Polish OP Human Capital mentioned above. EUR 146 million have been allocated towards this policy measure.

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<sup>20</sup> See Ministerstvo školství, mládeže a tělovýchovy (2008): 153pp.

<sup>21</sup> See Ministry of Education, Youth and Sports (2007): 83p.

**Table 2:** Use of funds for cluster-related policy measures in OPs in the Czech Republic (national level, including Prague)

Priority Axis No./Name	Number of projects*	Allocated amount, million Kč.*	% use of public means*
<b>OP Enterprises and Innovation</b>			
5. Environment for enterprise and innovation			
<i>5.1. Cooperation platforms</i>	76	3,796.50	33.2%
<b>OP R&amp;D for Innovations</b>			
1. European Excellence Centres	3	1,708.2	8.7%
2. Regional R&D Centres	32	14,283.6	72.4%
3. R&D commercialization and popularisation <i>3.1 R&amp;D commercialization and IPR protection</i>	0	0	0%
<b>OP Education for Competitiveness</b>			
2. Tertiary Education, Research and Development			
<i>2.4 Partnerships and networks</i>	43	652,4	18.3%
<b>OP Prague - Competitiveness</b>			
3. Innovation and Enterprise			
<i>3.1. Development of Innovation Environment and Partnership between the Research and Development Platform and Practice</i>	33	1,474.30	96%
<i>3.2. Support of Favorable Business Environment</i>	5	62.90	21.6%
<b>OP Prague - Adaptability</b>			
1. Support to development of knowledge-based economy	269	956.6	79.6%

Source: Author's own illustration; European Funds Portal of the Czech Ministry of Regional Development (as of Dec. 2010 to March 2011). \* Figures refer to the (project) status "agreement signed".

Basically, cluster policy in the Czech Republic is included into the operational programmes, particularly the OP-EI (sub-priority 5.1 and the above mentioned funding schemes such as first and foremost "Clusters") and the OP-R&DI (priority axes 1 to 3) as for the Convergence Regions of the country. An exception is Prague; as mentioned above it is the only NUTS-2 region in the Czech Re-

public that falls into the category “Competitiveness and Employment” region and is, therefore, treated differently when it comes to the allocation of funds. Prague has two own operational programmes, “OP Prague – Competitiveness” and “OP Prague – Adaptability”. The latter only includes the intervention category 74 (priority axes 1 and 3) and offers opportunities for enterprises to build up cooperative networks with research facilities and/or higher education institutions, in particular priority axis 1.<sup>22</sup>

The OP Prague – Competitiveness accounts for roughly EUR 276 million, whereas priority axis 3 (Innovations and Enterprise), which includes measures under category 3 and 5, has been given nearly EUR 97 million. The managing authority of these OPs is the city administration of Prague. Compared to the Czech Convergence Regions, Prague invests significantly more into the intervention categories 3, 5 and 74 – in relative terms. In all Czech OPs aiming at the Convergence Regions roughly 2.5 % (in Poland about 3.2 %) is spent on these categories; whereas, in Prague it is about 24 %. This is certainly also due to the different territorial status (large city vs. rural areas/smaller towns); however, it reflects the different focus areas between convergence and competitiveness regions with the first including large transport infrastructural projects and the latter having a stronger focus on the so-called Lisbon priorities (“knowledge-based economy”).

In contrast to the political praxis in Poland, the Czech authorities do (almost) not focus on cluster and network support at the regional level. The regional operational programmes that are implemented on the NUTS-2 level include very little measures under intervention category 3. In fact, only one of the 7 regions (i.e. North-East) allocates 4 % of its ROP towards category 3. This approach is quite different from the one Polish policy-makers have chosen. In the Czech Republic there is one central policy measure aiming at the establishment of networks between firms, research institutions and other public actors, i.e. sub-priority 5.1 of the OP-El. It allows for funding of corresponding activities on the national and regional level, whereas the Polish equivalent, i.e. also sub-priority 5.1 of the Polish OP-IE, only focuses on so-called “supra-regional” networking activities and leaves the support of regionally restricted activities to the ROPs.

If one takes the above mentioned implementation rate of the available funds as an indicator for the correspondence of the funding schemes with the actual demands of the targeted actors, the Czech example seems to be more successful than the Polish one. In the Czech Republic the implementation rate of the equivalent measure is ~37% and, thus, slightly higher than the average

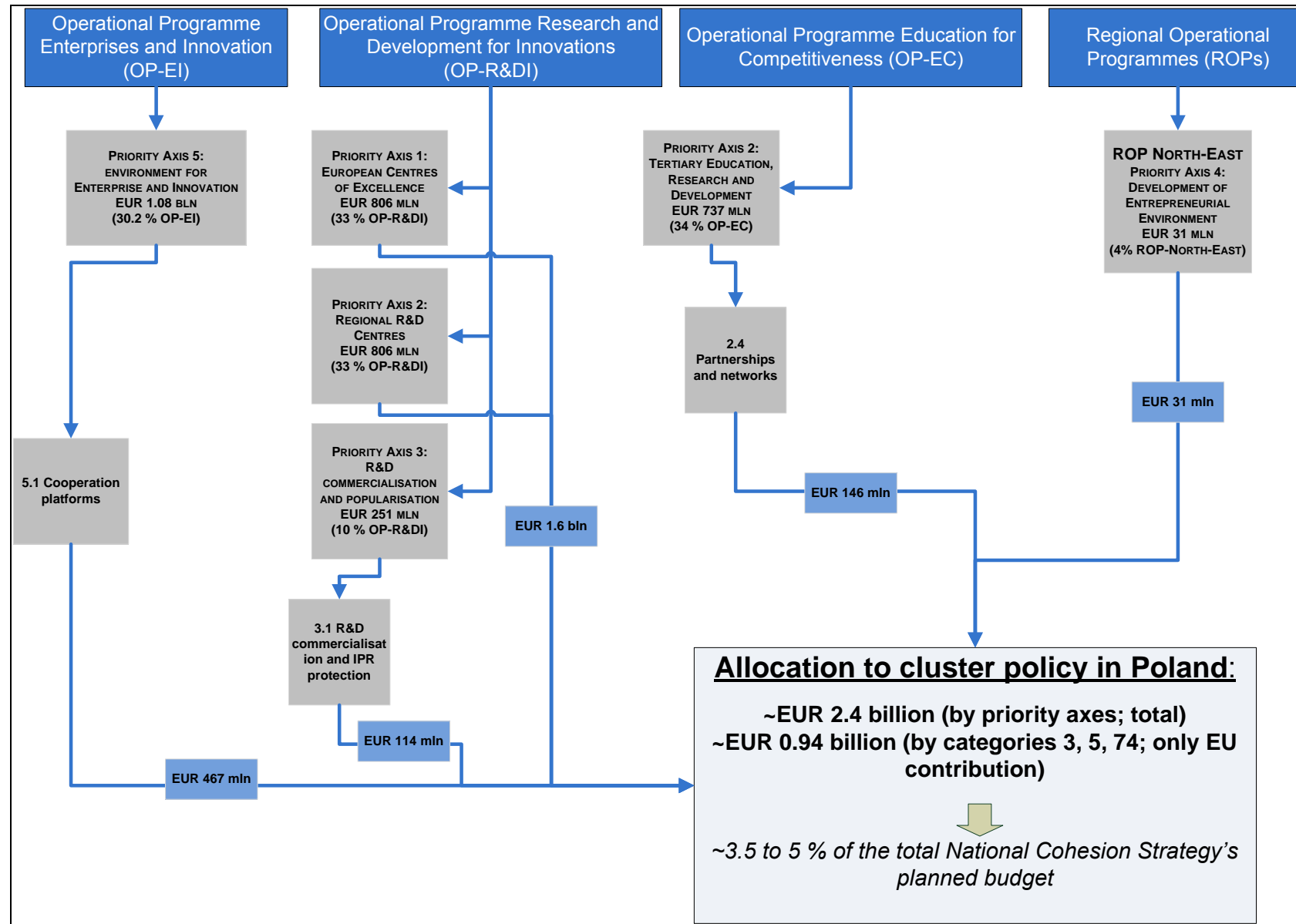
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<sup>22</sup> Priority axis 3 does not include enterprises as target groups and aims rather at pupils, students and teaching staff. Although it comprises investments belonging to intervention category 74, it can therefore not be regarded as cluster relevant.

rate of its priority axis 5 and significantly higher than the one of its Polish equivalent sub-priority 5.1 (OP-IE Poland). However, the Polish authorities have – in relative terms – allocated less funds towards sub-priority 5.1 within their OP-IE than the Czech did in their OP-EI. Furthermore, the ROPs in Poland offer significantly more opportunities for networking and clustering activities at the regional level than those of the Czech Republic; the latter more or less “centralised” funding for regional and trans-regional/national cluster/networking activities at the national level, namely at the Ministry of Industry and Trade and its intermediary bodies. Therefore, the Czech approach to cluster policy appears to be less “place-based” in terms of opting for a decentralised support mechanism as Poland did by leaving competencies to their voivodships’ administrations (i.e. Marshalls’ Offices).

Figure 4 illustrates the contribution of the OPs to cluster related policies in the Czech Republic. It is important to note that the vast majority of OP R&DI is invested into R&D infrastructures including physical plants etc. This explains the large gap between the allocation estimations by categories of intervention and by priority axes. In fact, only a relatively small part of the EUR 1.6 billion in priority axes 1 and 2 of the OP-R&DI is invested into cluster/network activities. The percentage estimations take this distortion into account by subtracting substantial parts of the allocation for these priority axes. The figure does not include the OPs for Prague, since it is not a convergence region and, therefore, set other priorities; this could disturb the comparability with the Polish case.

**Figure 4:** Cluster policy in the Czech Operational Programmes 2007-2013 (Convergence Regions)



Source: Author's own illustration.

### 3.3 Cluster policies in Croatia

The case of Croatia significantly differs from those of Poland and the Czech Republic, as the country is not yet an EU member state but in the pre-accession period; therefore, it is not a target region of the EU cohesion policy and, thus, the country does not have access to funding from the structural and the cohesion fund(s). However, in 2007 the European Union replaced a range of schemes and financial instruments by the so-called Instrument for Pre-Accession Assistance (IPA) that offers support in various fields to candidate countries such as Croatia. This instrument is the major EU funding instrument that allows for financial support of cluster activities in Croatia.

Basically, one can observe a clear trend in Croatian policy-making towards EU policy standards including innovation and cluster policy. In recent years the Croatian governmental bodies have started a range of cluster initiatives and set up national support programmes, in order to foster the development of such structures. This can be seen as a result of the country's approximation to the European Union and reflects parts of its efforts in the pre-accession period. In this context, one can argue that the Croatian innovation policy is largely influenced by the EU political agenda. Nevertheless, at least in terms of financial means to cluster and innovation policy in general, the EU support to Croatia obviously plays a significantly smaller role than in the two other countries. Major cluster initiatives in Croatia result primarily from national policy efforts partly with the support of international donor organisations such as UNDP or IBRD (e.g. TEHCRO programme, see below).<sup>23</sup>

Croatian policy-makers started to pay specific attention towards cluster policies in 2003, when the Croatian government initiated the project "Croatian Competitiveness Initiative" that was implemented by USAID.<sup>24</sup> Since then several political strategy papers including regional and cluster development have been drafted; most prominently, the National Competitiveness Council (NCC), for instance, has formulated 55 recommendations for increasing the country's competitiveness, which also include the support of cluster development.<sup>25</sup> The political key player for cluster development policies in Croatia is the Ministry for Economy, Labour and Entrepreneurship (MELE); it is mainly its "Department of free zones and clusters development and export support" that is governing and coordinating clustering efforts and activities at the national level. Croatian policy-makers, thereby, have been using both bottom-up approaches as well as top-down approaches to develop clusters.

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<sup>23</sup> Therefore there is a stronger focus on national initiatives in cluster policies than for Poland and the Czech Republic.

<sup>24</sup> See Orlovic (2008).

<sup>25</sup> See National Competitiveness Council of Croatia (2004).



Between 2004 and 2007, the MELE supported the creation of 22 clusters with financial means of about EUR 1.8 million.<sup>26</sup> In line with the recommendations of the NCC the MELE started several support programmes and initiatives to foster cluster formation such as “Cluster alliance to success” and “Innovation manufacturing cluster – knowledge centre” in 2006; this financial support was organised through tenders in form of direct grants. In 2007 the MELE started the “Croatian Export Offensive” in cooperation with other organisations (e.g. Croatian Bank for Reconstruction and Development, diverse business associations). It includes the establishment of 6 export clusters in various business fields; each of them was planned to receive public funds of about EUR 275,000 within the years 2007-2010. Whereas the first ones followed a bottom-up approach, the current export offensive is clearly built upon a top-down approach, in which the national government rather intends to foster the external perception of certain industries in Croatia aiming at export promotion. Recent information gained from an interview partner in the Zagreb Chamber of Economy says that, in fact, only four out of the envisaged six export clusters have been established.<sup>27</sup>

The Croatian government has also set up other programmes for entrepreneurship, SME development and technology transfer. One major policy instrument in this context was the TEHCRO programme that provided financial support to science and technology parks and was run by the Business Innovation Centre of Croatia (BICRO) between 2006 and 2009 (overall budget: EUR 7.8 million). Within this period TEHCRO had its focus on ICT, bio- and nanotechnologies.<sup>28</sup>

As mentioned above, the IPA is the major development programme that is externally co-financed.<sup>29</sup> The EU allocated EUR 142.4 million to Croatia in the framework of the IPA; the amount has been split up between three operational programmes, of which one targets issues of regional economic development, i.e. the Regional Competitiveness Operational Programme (RCOP).<sup>30</sup> During the funding period between 2007-2009 a total amount of EUR 142.4 million has been allocated towards these three OPs in Croatia; EUR 47 million for the RCOP.<sup>31</sup> The second of the RCOP's three priority axes, “Enhancing competitiveness of the Croatian economy”, is the most relevant one for cluster development policies. There are five types of operations that are envisaged under priority axis 2; one of them specifically aiming at the “Support for clus-

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<sup>26</sup> These fields comprise water processing, small shipbuilding, textile and clothing, ICT solutions, wood and furniture, and mariculture and fishery

<sup>27</sup> See Interview with Zagreb Chamber of Economy. These four clusters have been established in the areas of small shipbuilding (Boatbuilding Cluster L.L.C.), water (Aqua Adria d.o.o.), wood – furniture, and mariculture (fish and shells).

<sup>28</sup> See EraWatch-Webpage.

<sup>29</sup> There also exist bilateral development programmes with single countries, e.g. Germany.

<sup>30</sup> The other two are “Environmental OP” and “Transportation OP”.

<sup>31</sup> The EU contribution/co-financing rate via IPA is 75 %, i.e. 10 % smaller than in the OPs co-financed by the structural and the cohesion fund(s).

ter development" (see Operation 5, RCOP). This operation shall support the Croatian government with its recent efforts at "enhancing clusters as export tools" and follows a top-down approach. It is not clear, whether these funds have been used or are currently used for the implementation of the above mentioned Croatian Export Offensive and what its implementation status looks like. The corresponding list of beneficiaries (IPA IIIc – RCOP) does not show any expenses under sub-priority 2.1, operation 5.

To sum it up, the approach of Croatian cluster policy seemingly has not been that clearly defined, streamlined and focused so far.<sup>32</sup> It is, however, likely that the most recent political initiatives of the Croatian government (supported, for instance, by the German GIZ and the Europe Enterprise Network (EEN) in Croatia) may contribute to the development of a more comprehensive cluster policy approach in the country. At the moment the "Strategy for Cluster Development in the Republic of Croatia 2011-2020" has been developed and presented to the government for approval; furthermore, an "Action Plan for Cluster Development 2011-2013" has been elaborated.<sup>33</sup> Moreover, the amounts invested into cluster policies are still relatively low and cluster policies seem to be of strong "top-down" character in Croatia. In Poland and the Czech Republic the financial means allocated to cluster support policies through the EU funds allow for more opportunities for bottom-up activities. Obviously, this is due to the fact that Croatia does not have access to the EU structural and cohesion fund(s) yet and current cluster policies funded by IPA are to be seen as preparatory activities (e.g. pilot projects) for the forthcoming EU membership. Generally speaking, cluster policy has found its way to the political agenda in Croatia; largely influenced by EU policies. However, support in terms of financial resources that are allocated towards such activities remain rather limited.

## 4 Conclusion

In all three countries the European Union's political agenda, namely, the Lisbon Strategy has been playing a key role for their innovation and cluster policies. The ongoing alignment of EU cohesion policy with the so-called Lisbon priorities – the knowledge-based economy at the core – is clearly visible in all three countries; to different extents and in different ways, though. Cluster policies as the major component that increasingly has been characterising recent innovation-focused regional policy, are currently under implementation in all three countries. In Poland and the Czech Republic this is largely done through the Operational Programmes at the national and regional level. Whereas the basic structure of the strategic policy framework is, of course,

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<sup>32</sup> See also Orlovic (2008).

<sup>33</sup> See Interview with Zagreb Chamber of Economy.

almost the same as in all other EU member states, significant differences can be observed in the operational implementation processes.

### **Centralised vs. Decentralised Cluster Policy Approach**

The Czech policy approach appears to be less complex than the Polish one; basically, Czech cluster policy based on EU funds is centralised at the national level in form of sub-priority 5.1 of its OP-EI. This policy measure allows for clustering and networking activities at both the regional and national level. The Czech ROPs do almost not include any measures aimed at clustering activities (except for a relatively small amount of the North-East region's ROP). This implies that "only" the Ministry of Industry and Trade and its intermediary bodies are in charge of implementing the funds related to cluster support. In contrast, Polish policy-makers have opted for a more decentralised approach; the cluster policy measures embedded into the respective OPs at the national level are complemented by similar measures at the regional level that are, again, implemented by the respective departments of the voivodships' Marshall's Offices. Although there exist diverse bodies for surveillance of all these OPs and policy measures, there sometimes seem to occur problems in vertical coordination. This might be one reason why the major cluster policy instrument at the national level (sub-priority 5.1 of the OP-IE) does not perform that well. It remains to be seen, whether the different political steering modes in Poland and the Czech Republic do have visible implications for the long-term success of cluster policies.

### **Small shares for cluster policies in Convergence Regions**

In both the Czech Convergence Regions and in Poland cluster policies play a rather minor role in terms of financial amounts allocated by the OPs towards respective policy measures. In the Polish OP-IE, for instance, the sub-priorities 5.1-5.3 altogether account for only roughly 3.7% of the OP-IE (~EUR 360 million). In the Czech Convergence Regions' OP-EI the equivalent sub-priority 5.1 accounts for about 13% of the OP-EI. This difference in relative terms can be largely due to the above mentioned various funding modes in the two countries. In Poland the OP-DEP and the ROPs make a significant contribution to cluster policy funding; roughly 5-6% of the EUR 16.6 billion that is allocated via the ROPs goes into cluster related measures and another approx. 2% of OP-DEP. Altogether Poland allocates only 3.18 % towards the intervention categories 3, 5 and 74; as for the Czech Convergence Regions, it is about 3.6%.<sup>34</sup> In contrast, the only Czech Competitiveness and Employment Region, namely Prague, allocates nearly 25% of its EU funds towards these three categories. Furthermore, category 74 makes up the largest share of the three categories in Prague, whereas in the Czech Convergence Regions and Poland

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<sup>34</sup> Both figures do not include the support programmes under the European Territorial Cooperation Objective.

categories 3 and 5 are bigger than 74 (see Appendix 1 and Appendix 2). These findings show that the different focus areas in the use of EU funds between Convergence and Competitiveness and Employment Regions also hold true for cluster policies as one part of innovation policy in general. Instead, measures aiming at the enhancement of regional transport infrastructures play a bigger role in the Convergence Regions (see also Figure 1 and Figure 3).<sup>35</sup>

### **Cluster policies in Croatia at an early development stage**

Although cluster policy has obviously entered the political arena in Croatia, too, there seems to be no well-financed and comprehensive cluster support strategy in the country so far. A few dozens of cluster have been established with the support of the Croatian state; but the amounts spent on cluster policy appear to be rather low and it is often not clear, whether these cluster initiatives are really permanently existent. Furthermore, the political strategic approach to cluster policy is not that well-defined and streamlined; more recently the Croatian government has started to apply a top-down approach in establishing clusters. In the context of the Croatian Export Offensive, four thematic clusters have been created; however, it remains unclear, if these clusters reflect functioning, complementary networks of companies or if this is more or less a promotion campaign for certain Croatian industries. The IPA that also includes little support to cluster development is to be rather seen as a preparatory programme for the country's forthcoming accession to the EU and its access to EU funds. However, the above mentioned recent political initiatives might contribute to a more comprehensive cluster policy approach in Croatia.

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<sup>35</sup> The same applies, for instance, within Germany to the ERDF strategies of Bavaria (Competitiveness and Employment Region) and Saxony (Convergence Region).

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## 6 Appendix

**Appendix 1:** Allocated EU funds by voivodship/ROP and relevant categories of intervention (2007-2013), in EUR

<b>Convergence Region</b>				
<b>OP/ROP</b>	<b>Category 03</b>	<b>Category 05</b>	<b>Category 74</b>	
<b>National Level</b>				
OP Innovative Economy	250,153,000	411,349,910	-	661,502,910
OP Development of Eastern Poland	10,005,866	30,014,664	-	40,020,530
OP Human capital	-	-	603,326,307	701,523,440
<i>Total National level</i>	<i>260,158,866</i>	<i>441,364,574</i>	<i>603,326,307</i>	<i>1,403,046,880</i>
<b>Regional Level</b>				
Dolnoslaskie	22,321,866	54,900,121	-	77,221,987
Kujawsko-Pomorskie	34,236,138	47,550,191	-	81,786,329
Lodzkie	18,477,154	31,248,127	-	49,725,281
Lubelskie	2,889,636	40,454,909	-	43,344,545
Lubuskie	3,500,332	5,739,454	-	9,239,786
Malopolska	10,500,419	4,200,168	-	14,700,587
Mazowieckie	5,312,500	2,624,375	-	7,936,875
Opolskie	4,884,139	10,000,000	-	14,884,139
Podkarpackie	5,475,679	36,563,378	-	42,039,057
Podlaskie	9,000,000	13,996,574	-	22,996,574
Pomorskie	66,907,833	15,647,743	-	82,555,576
Slaskie	46,000,000	9,620,000	-	55,620,000
Swietokrzyskie	7,250,000	7,260,000	-	14,510,000
Warminsko-Mazurskie	10,050,000	30,000,000	-	40,050,000
Wielkopolskie	12,326,000	60,000,000	-	72,326,000

Zachodniopomorskie	31,000,000	54,000,000	-	85,000,000
<i>Total Regional Level</i>	<i>290,131,696</i>	<i>423,805,040</i>	<i>-</i>	<i>713,936,736</i>
<b>Total EU contribution (categories 3, 5 and 74)*</b>	<b>550,290,562</b>	<b>865,169,614</b>	<b>603,326,307</b>	<b>2,116,983,616</b>
<b>% of total EU contribution to all OPs</b>				<b>3.18%</b>

Source: Author's own calculations; European Funds Portal of the Polish Ministry of Regional Development.\* excluding programmes under the European Territorial Cooperation Objective.

**Appendix 2:** Allocated EU funds by OP/ROP and relevant categories of intervention in the Czech Republic (2007-2013), in EUR

<b>Convergence Region</b>				
<b>OP/ROP</b>	<b>Category 03</b>	<b>Category 05</b>	<b>Category 74</b>	<b>Σ</b>
<b>National Level</b>				
OP Research and Development for Innovations	265,851,873	-	-	265,851,873
OP Education for Competitiveness	-	-	298,811,994	-
OP Enterprise and Innovation	131,033,774	241,857,619	-	372,891,393
<i>Total National level</i>	<i>396,885,647</i>	<i>241,857,619</i>	<i>298,811,994</i>	<i>638,743,266</i>
<b>Regional Level</b>				
ROP NUTS II North-West	-	-	-	-
ROP NUTS II North-East	1,050,332	3,983,746	-	5,034,078
ROP NUTS II Central Bohemia	-	-	-	-
ROP NUTS II South-West	-	-	-	-
ROP NUTS II South-East	-	-	-	-
ROP NUTS II Moravia-Silesia	-	-	-	-
ROP NUTS II Central Moravia	-	-	-	-
<i>Total Regional Level</i>	<i>1,050,332</i>	<i>3,983,746</i>	<i>-</i>	<i>5,034,078</i>
<b>Total EU contribution (categories 3, 5 and 74)*</b>	<b>397,935,979</b>	<b>245,841,365</b>	<b>298,811,994</b>	<b>942,589,338</b>
<b>% of total EU contribution to all OPs (Convergence Region)</b>				<b>~3.6 %</b>
<b>Competitiveness and Employment Region</b>				
<b>OP</b>	<b>Category 03</b>	<b>Category 05</b>	<b>Category 74</b>	



OP Prague - Competitiveness	10,083,583	2,464,609	76,189,746	88,737,938
OP Prague - Adaptability	-	-	12,000,000	12,000,000
<b>Total Prague</b>	<b>10,083,583</b>	<b>2,464,609</b>	<b>88,189,746</b>	<b>100,737,938</b>
<b>% of total EU contribution (Competitiveness and Employment Region)</b>				<b>~24 %</b>

Source: Author's own calculations; European Funds Portal of the Czech Ministry of Regional Development.\* excluding programmes under the European Territorial Cooperation Objective.