# Fraunhofer

## MOEZ

# Clusters in Poland,
# the Czech Republic and Croatia

# Working Paper 2011

**Stefan Wappler, Jens Ulrich**

# Fraunhofer
**MOEZ**

# Clusters in Poland, the Czech Republic and Croatia

# Contents

# I  Figures

# II  Tables

# III    Appendix

# IV    Abbreviations

| | |
|---|---|
| BMBF | Bundesministerium für Bildung und Forschung (*Federal Ministry of Education and Research*) |
| BMWi | Bundesministerium für Wirtschaft und Technologie (*Federal Ministry of Economics and Technology*) |
| BRIC | Brazil, Russia, India, China |
| CEE | Central and Eastern Europe |
| e.g. (etc., i.e.) | |

# 1    Executive Summary

This study presents results from a short survey of managers and representatives of cluster and network initiatives in three Central and Eastern European countries, namely Poland, the Czech Republic, and Croatia. 26 responses were analyzable, equally divided among the three countries. The response rates were highly unequal, the lowest with less than 10% from Poland, the highest from Croatia with over 20%. Overall, the responding cluster initiatives are fairly young and small, most with less than 1000 employees in total.

Important cooperation instruments are rarely resource intensive, but the importance of collaborations in areas with intensive knowledge transfers is increasing. Likely as a result of the sample selection a substantial number of respondents is already internationally active. Again, the majority of activities is informal, mostly information exchange. Another aspect of an international orientation of cluster initiatives is benchmarking. Germany and other Western European countries are the principal benchmarking region, except for a few respondents for whom also the other Central and Eastern European economies are of interest. Benchmarking areas are particularly science-business cooperation, international orientation, and political support.

# 2 Introduction

The promotion of clusters and cluster initiatives as the institutionalized variety of the former is an often promoted measure of regional economic development policy in the countries of Central and Eastern Europe (CEE). This applies particularly to the new EU member states. Reasons are primarily the cluster accompanying agglomeration and spillover effects but also the aim of creating critical mass to exploit economies of scale and scope. However, in light of the transition from central planning towards a market oriented economy, many actors in the political and economic spheres have only passing knowledge of the cluster concept.[1] This might lead to different characteristics of cluster initiatives in CEE compared with their counterparts in Germany or other Western European countries.

To support German clusters in their internationalization activities it is important to know how clusters in CEE are organized, how their decision making processes are structured, or what their main collaboration areas are. To gain some clues for answers to these questions, an explorative survey was conducted among actors of cluster initiatives in the three countries, Poland, the Czech Republic, and Croatia. Another aim of the survey was to compare the internationalization strategies of cluster initiatives from CEE with those from Germany.[2]

In order to obtain some impressions of the internal dynamics of these comparably young and—for actors from CEE—novel form of cooperation, the survey was aimed at several actors from each cluster, including the cluster management. Altogether 26 clusters were surveyed.

The paper is organized as follows. The next chapter (3) deals with some methodological and associated issues, and is followed by the presentation of the survey responses (4). The last part (5) includes some conclusions and proposals for further research.

[1]  See for a discussion of different theoretical and empirical definitions of clusters, Graffenberger, M. et al. (2010).
[2]  See for a survey of internationalization activities of German cluster initiatives, Wappler, S. et al. (2011).

# 3 Methodology

The current study examines cluster initiatives and regional networks in three economically leading countries in CEE; Poland, which is by far the biggest economy in the region, the Czech Republic, which has a long industrial tradition with former experiences of industrial districts or clusters, and Croatia, which is the economically most advanced of the current and prospective EU membership candidate countries. Central elements of the standardized questionnaire were structure, cooperation motivations and activities, as well as some first appraisals of international orientation of the cluster.[3]

The particular interest of the study is to gain a basic overview of the inner working of cluster and network initiatives in the region. Thus primary research questions of the survey are, for example:

- How are the clusters structured and managed?
- Which motivations and/or ambitions are connected with membership in the cluster?
- Who are key actors in strategy formation?
- What markets and activity areas are interesting in foreign countries?
- Which countries and areas are deemed important for international benchmarking?

The survey focused primarily on the management of the cluster initiatives or other central contact persons – as representatives of the whole cluster. This seems appropriate regarding to the specific responsibilities of the cluster management and the topic of the survey. For example some general functions and responsibilities of the cluster management are[4]

- strategy development and development of profile themes and projects,
- general cluster/network services,
- maintenance of contacts to all actors within the relevant environment etc.,

---

[3] The complete questionnaires can be found in the annex.
[4] Scheer, G., von Zallinger, L. (2007).

- marketing, promotion and internal/external representation of the cluster/network,

- positioning of the cluster/network within national and international environments,

- trend monitoring in order to set up knowledge management systems,

- implementation and realization of measures aiming at intensifying cooperations between the clusters actors.

On the basis of these wide-ranging operational responsibilities, it seems fair to assume that the cluster/network management has a profound knowledge of structures and processes of the cluster. Nonetheless, it has to be kept in mind, that the management board is usually not completely informed about individual activities of the participating actors.

The surveyed cluster initiatives and networks are characterized by a variety of participating actors. Besides enterprises and the already mentioned management, these are primarily private and public research institutions but also intermediaries. Since public intermediaries—often in the form of local or regional economic promotion agencies—are nearly always part of the cluster or network initiatives, these might be seen as Triple Helix structures (Etzkowitz, Leydesdorff 2000). Such cooperation between enterprises, university or research institutions and public actors are seen as beneficial in the production of new knowledge and its application for innovations.

The survey was conducted as an e-mail survey, which means, that respondents were contacted via e-mail with the questionnaire as an attachment. This survey method seemed to be appropriate, because the cluster management, as the target audience, is accustomed to e-mail inquiries, the questionnaire was relatively short and quick responses were necessary.

A total number of 185 questionnaires were sent. 26 of the returned questionnaires were exhaustive enough to be included in the analysis resulting in a response rate of 14 percent. A substantial number of further responses indicated that the initiative in question does not exist anymore or is in a preliminary state of development. This was especially often the case in Poland, which during 2004-2006 initiated a substantial number of projects to start a cluster process between companies, research institutions, and public agencies. Many of them failed to advance the preliminary cooperation into functioning networks, due to a lack of skills, funding, or interest from the potential company participants.

# 4    Results

## 4.1    Cluster Profiles

Before the specific results of the survey are presented, a more introductory overview of the participating clusters and their structure seems sensible. The 26 responses are almost equally distributed among the three countries, which comes as a surprise given the vastly differing sizes of the respective economies. Because of the altogether small number of responses, it is not meaningful to present any results for possible subgroups. Table 1 gives an indication of the broad variety of industries in which the individual clusters are active, based on a self-evaluation of the respective cluster management. Altogether, the mixture of industries is fairly equal. From high- and medium-high-tech industries are 42% of responses, 31% are from services industries and the rest is from agricultural and mature industries.

Table 1:
Sectoral allocation of surveyed cluster and network initiatives

| | Industries/branches |
|---|---|
| **High-tech industries** ("high- and medium-tech")<br><br>NACE rev. 1.1 codes 24, 29-35, research-intensive cross-sectional technologies | ▪ Chemical and pharmaceutical industry<br>▪ Mechanical engineering<br>▪ Medical technologies, optical technologies, microelectronics<br>▪ Automotive industry, aerospace technology<br>▪ Material and surface technologies, nanotechnology, plasma technology<br>▪ Life sciences, biotechnology<br>▪ Energy technologies, renewable energies, environmental technologies<br>▪ ICT, virtual engineering |
| **Service industries** | ▪ Tourism, trade fairs, congress<br>▪ Logistics, mobility<br>▪ Media, print |
| **Mature industries**<br><br>NACE rev. 1.1 codes 15-23, 25-28, 36-37 | ▪ Agriculture and food industry<br>▪ Textile, clothing manufacturing<br>▪ Metal processing<br>▪ Boatbuilding |

All responding clusters are fairly young. 14 were established in the years 2006/07, the other 11 responding in the following years.

Regarding the size of clusters and networks in terms of the number of enterprise members, all networks are small compared with the results from German clusters. The biggest initiative has 85 enterprise members, the smallest 2 (Table 2)[5], with an average of 25, and a median of 20.[6] Among the companies are only a few bigger ones with more than 250 employees, in at least 12 clusters none of the companies reaches this threshold.

Table 2:
Initiative Profiles –
Participating Actors

n: number of observations

| | Poland | Czech Republic | Croatia |
|---|---|---|---|
| **Country** (n) | 9 | 9 | 8 |
| **Participating Actors** | Min. | Max. | Average | **Median** |
| **Enterprises** (n=26) | 2 | 85 | 25 | **20** |
| thereof large scale (n=22) | 0 | 9 | 1.4 | **0** |
| **University Entities** (n=25) | 0 | 5 | 1.5 | **1** |
| **Extramural R&D Institutions** (n=25) | 0 | 4 | 1 | **1** |
| **Intermediary Organizations** (n=25) | 0 | 8 | 1.5 | **1** |
| **Cluster/Network Employment** (n=20) | 25 | 18700 | 1737 | **850** |

The overall number of workers employed in associated companies varies considerably, with a minimum workforce of 25 and a maximum workforce of over 18,700 employees.[7] The median employment of the initiatives is about 850 and only five clusters have more than 1000 employees.

Beside enterprises as central actors of clusters and regional networks, cluster managers were asked to quantify the number of further important actors: universities, non-university research and development (R&D) institutions and intermediary organizations. The number of participating university entities in the median is one, which holds also true for the other organizations. All respond-

---

[5]   The number of observations differs substantially between questions and response options. Therefore, it is noted in all tables and figures on how many responses the respective values are based.
[6]   Given the small size of the responding initiatives the difference between mean and median are considerably less pronounced than in the survey of German networks, which is primarily caused by the absence of big cluster initiatives in this survey.
      The median divides a sample in two equally sized parts; half of all units are smaller than the median and the other half are bigger.
[7]   Please note that only 20 (77%) of the questionnaires provided useful information on the number of employees within the cluster.

ents have at least one non-company member and almost all have participants from the research as well as intermediary sector.

Most cluster initiatives experienced a growth in the number of participants since inception, with 3 initiatives growing more than 50%, 11 growing between 10-50%, and 6 without any big changes. Only 3 each saw its membership shrink by between 10-50% or more than 50%.

## 4.2    Objectives and instruments of cluster activities

In order to gain an idea of the reasons to establish a cluster or network initiative in CEE, cluster managers were asked to provide the most important reason from the time the initiative was created and to then assess the current importance of all provided options. The reason is to evaluate if new or other areas gained importance and if the historic reason is still important. The answer to the latter is yes, the current importance of all responses for main establishment reason is at least rather high and in most cases very high. Figure 1 provides an overview. The current importance is measured by the percentage of respondents rating the respective option with high or fairly high importance. This percentage is based on the number of responses mentioning the category at all (number of observations).

**Figure 1:**
Reasons for establishment and their current importance

share of respondents mentioning the respective category, multiple answers possible

n: number of observations
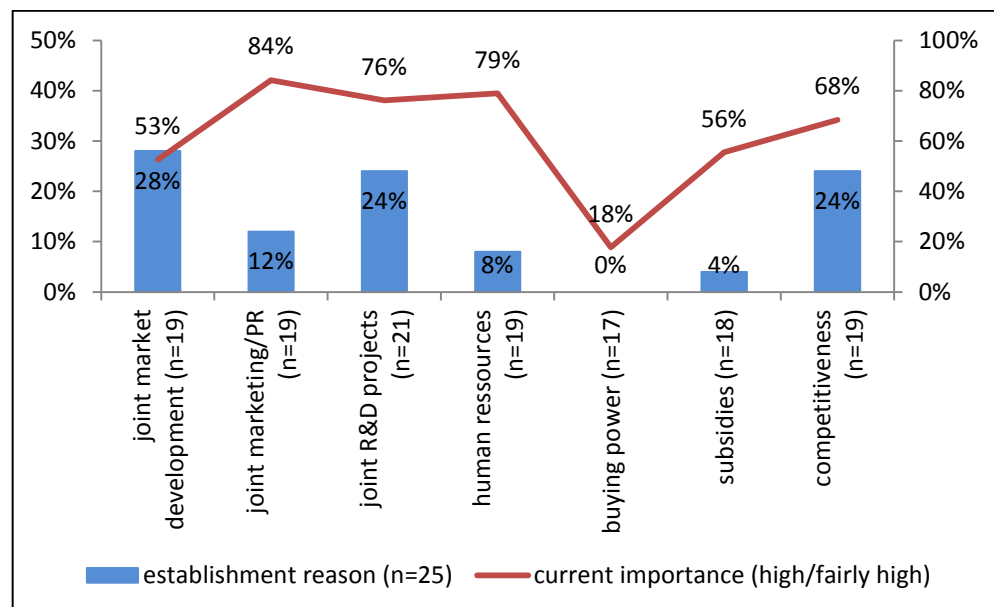


The comparison of establishment reasons and current importance reveals some interesting developments. Joint market development was the most important

reason but its current importance falls well behind most other activity areas. Contrasting this, joint marketing and public relations (PR) as well as sustaining and fostering human internal and external human resources gained considerably in importance. Surprisingly, the clusters mentioning human resources as establishment reason rate its current importance only as fairly high, which is the only establishment category not rated high by their respective respondents. Also the search for subsidies is rated fairly high considering its marginal mentioning as establishment reason, but is still of less importance than areas focusing on skills and capabilities. One explanation for the presumed increase in importance is that only one reason could be given for the establishment.

A look at actual cooperation activities confirms the results of the aforementioned question. Respondents were asked to rate their three most important cooperation areas within the cluster initiative. In Figure 2 are for reasons of clarity and brevity the shares of all three ranks added together. The single most represented activity is information exchange among the participants of the cluster with an almost 2/3 share for the number one spot. The second most common activity is joint marketing with a quarter share of number one and number two ranks. Most other activities are either important as second or third rank with the exceptions of joint product development, lobbying, and vocational training which received several responses as second and third rank.

**Figure 2:**
Importance, intensity, and frequency of cooperation activities

share of respondents mentioning the respective category, multiple answers possible
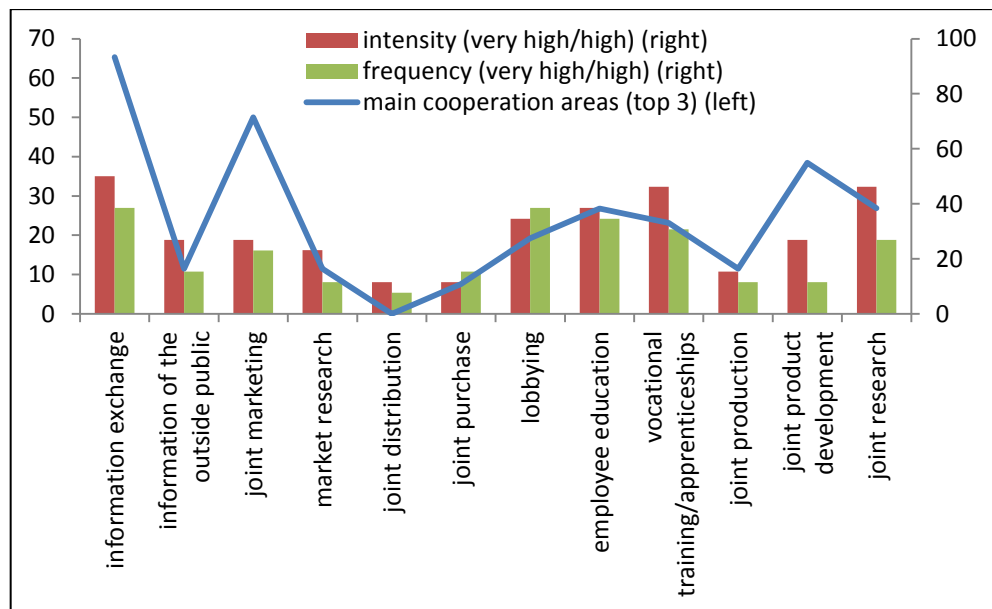


The shares of very high/high intensity or frequency of the respective activities are calculated on the basis of all 26 respondents, not on the number of responses for the specific category. The reason for this approach is that the response categories encompass only the alternatives "very low", "low", "moder-

ate", "high", and "very high", therefore non-responses are interpreted as "not applicable" meaning the respective activity is not actively pursued. This simplifies the comparison of importance and frequency/intensity. Altogether, importance and intensity/frequency are correlated but less than was to be expected. Especially large deviations are observable for information exchange which is rated a lot more important than the intensity and frequency of use would suggest. This is also the case for joint marketing and joint product development. A closer look into the response behavior shows that in these cases only the respondents which designated these activities as main cooperation activity use them often and profoundly. Interesting to note is the fairly important role educational activities play. Also notable is the fact that lobbying (and joint purchase) is the only category with more "high" responses for frequency than for intensity. Generally "high" frequencies are less common than "high" intensities with the difference depending on the amount of monetary and knowledge resources that have to be invested in the activity.

A comparison of the activities with the broad areas of cluster cooperation reveals some discrepancies between intention and implementations. Joint marketing is prescribed the highest current importance but both activities in this area are only in the mid-range of activities. Joint research seems also to fit this description but the difference between intensity and frequency suggest that these activities are simply more resource demanding and therefore less often pursued. But when they are taken up the respective partners invest much effort as the comparably high intensity documents.

*International activities*

The majority of respondents (69.2%) mentioned that their initiative had already initiated international activities or had concluded respective agreements (Figure 3). Compared with the results of the German survey (95% of respondents with international activities), this seems expandable, but it has to be mentioned that a number of initiatives refused to participate in the survey stating that it didn't apply to them because they do not plan to initiate international activities. The share of internationally active cluster or network initiatives is even smaller than here measured.

The most frequent activity is information sharing, mentioned by even more respondents than originally for all activities (88.5% vs. 69.2%), followed by attendance of conferences, seminars, or workshops. All other activities are fairly seldom, the next most often mentioned one is joint project acquisition (38.5%), where European Union support programs might play a role.

**Figure 3:**
International activi-
ties

share of respondents
mentioning the respective
category, multiple answers
possible
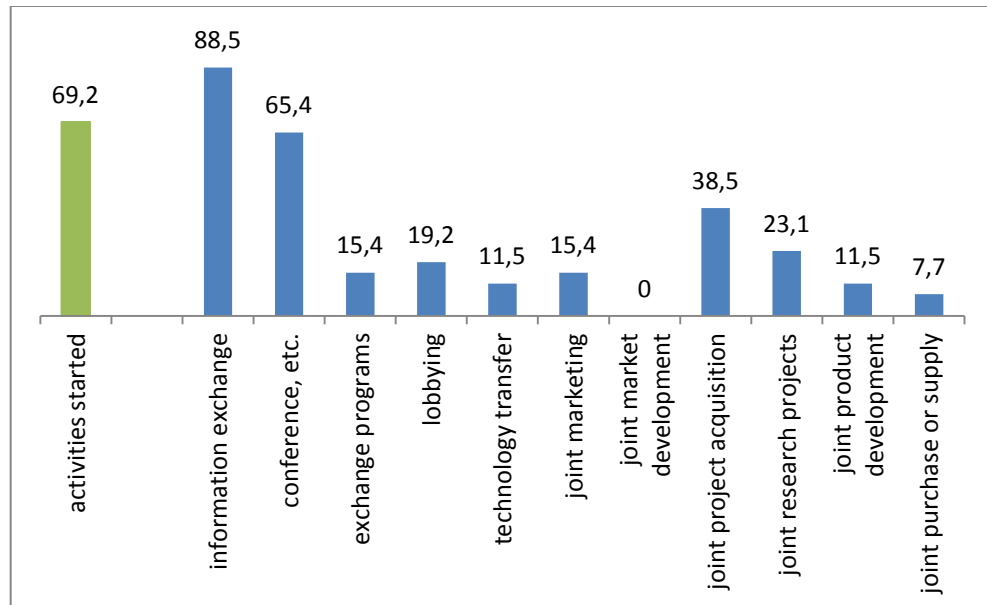


The question for the most important market registered somewhat ambiguous results. Some respondents mentioned more than one market as the most important, which complicated the analysis. Most of the time these respondents mentioned neighboring categories, but in a few instances this was not case. By only analyzing shares of respondents this problem is reduced somewhat. Either way, the two most often mentioned categories are the home country and Europe as a whole; around 1/3 each, with home country a bit more than Europe. Neighboring countries are mentioned less and mostly in combination with another market. Local markets and world markets are only seldom mentioned (maximum 4 times).

The results for international markets are confirmed by the specific question about important foreign markets (Figure 4). Germany is by far the most often mentioned foreign market, only one respondent did not mention it. The two other individually assessed countries from Western Europe (France and Great Britain) were mentioned by around half of all respondents; mostly both were mentioned together. This was not the case for other Western Europe, which was mentioned slightly more often by respondents who did not mention the other two countries than the other way round. A comparably high correlation was also observable for mentioning Russia and France, i.e. most of those respondents who mentioned France as important country also mentioned Russia. Neighboring countries, even though not often mentioned as most important market (see above), are only slightly fewer times mentioned as important region compared with Western Europe. Thus, the regional market seems still important. The only non-European region with any significant importance is North America, i.e. the USA.

**Figure 4:**
Important countries and regions for international activities

share of respondents mentioning the respective category, multiple answers possible
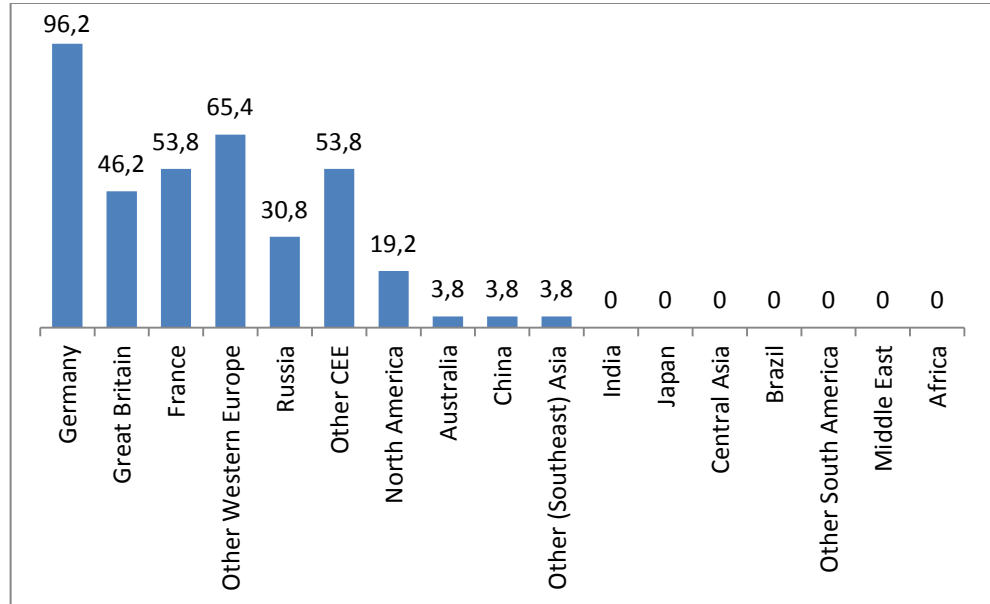


Clusters from high-tech industries mention all aspects with a focus on CEE less often than in general. This is most pronounced for gaining recognition, followed by research and development cooperation and access and entry into foreign markets. Almost no differences exist with respect to joint projects and the joint acquisition of projects. For mature industries the market access is of even higher importance while the joint acquisition of projects is markedly less often mentioned. For clusters from services industries the latter is more important in the CEE region than in general which is also true for market access whereas research and development cooperation's are less often mentioned.

## 4.3 Cluster management, decision making, and support

Most cluster initiatives have a management specifically employed for this function, either in the form of a management organization (54.2%) or as employees at one member organization (12.5%). In all other initiatives one or more representatives of one of participating organizations is responsible for the management. In most cases this is a representative of a company (25%). The number one funding source are fees or contributions from the member organizations (77%) or in a few cases subsidies/grants from the national government (7.7%) or the EU (15.4%). Subsidies play a bigger role as secondary or third funding source, where especially regional or local government funds play a complimentary role. Altogether 42% and 54% mentioned regional/local government funds and EU funds respectively. The results indicate that at least the

responding initiatives are established enough to provide their own financing and are not overly dependent on public money.

The influence the various cluster participants have on the strategy of the initiative determines not only the development of the initiative but also its success and the satisfaction of all participants. Figure 5 contains a summary of the responses toward the question if and how much influence specific groups of actors have on strategic decision making. Surprising is the comparably high influence of large enterprises given their low participation rate. The line with "mean" depicts the average influence of the respective actor group in those cases where they are present. Contrary to that is the measurement of influence not limited to those cases where the actor is present. The differences between the two measures are particularly big for private research institutions and government agencies. This means that these two groups have only limited influence when they are present.

**Figure 5:**
Influence on decision making

share of respondents mentioning the respective countries, multiple answers possible

n: number of observations
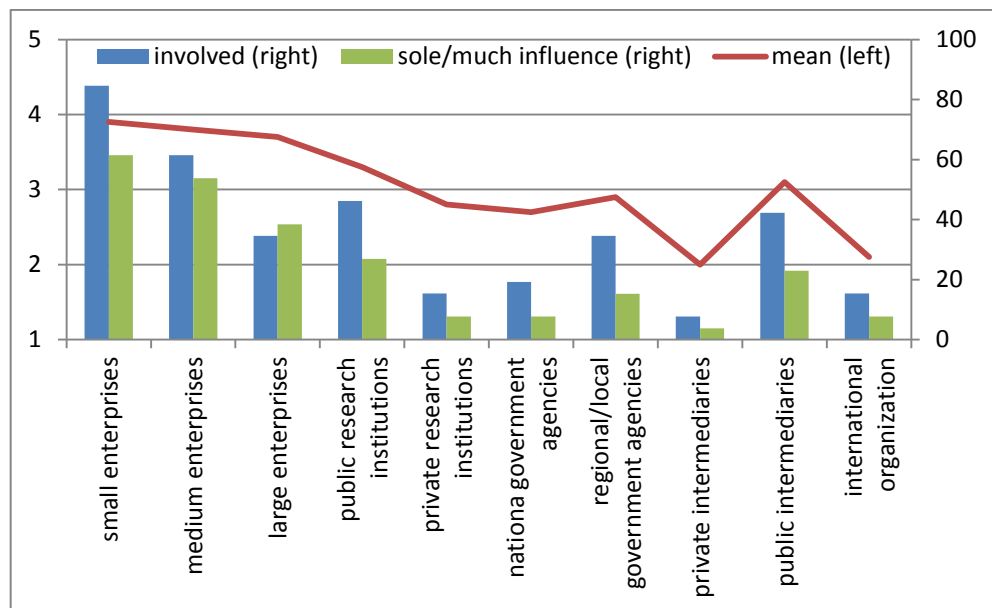


Supporting institutions exhibited only minor influence on strategy formulation and decision making, but they were deemed important for ancillary funding. At least some of them are also important actors regarding political framework conditions. Because of their influence on the performance and working of cluster initiatives the managers were asked to evaluate them. Overall satisfaction, measured by the average rating (mean), is only slightly above neutral (3.0). The managers were most satisfied with national government and the EU, but even there the average satisfaction is between "neutral" and "somewhat satisfied". To further analyze the results Figure 6 includes also the share of satisfied responses as well as the balance of satisfied and unsatisfied results. These show

that the overall satisfaction with the national government is slightly higher than for the EU, but the larger number of "neutral" assessments leads to the same average satisfaction level for the EU. Local government as well as business development banks register surprisingly low satisfaction levels. The comparison of the share of satisfied responses and the average rating reveals that in the case of local government this is mainly due to a high number of unsatisfied respondents and an accordingly low number of neutral statements. This dichotomy of opinion is also observable for regional government and other national agencies, but not the other supporting institutions.

**Figure 6:**
Satisfaction with supporting institutions

multiple answers possible

n: number of observations
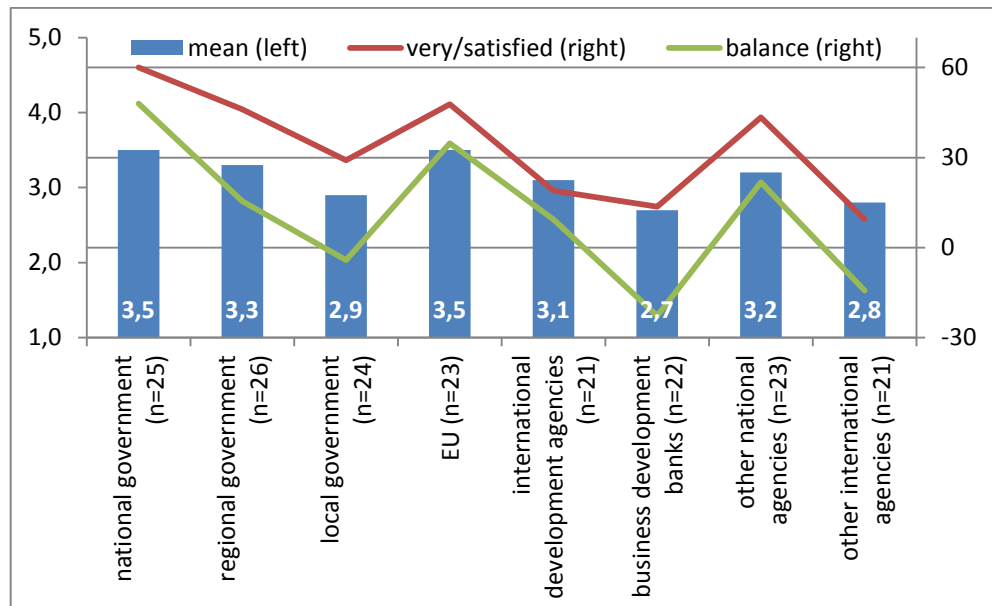


## 4.4    International benchmarking

Finally, cluster and network managers were asked which maximal 3 countries or regions they use to compare or benchmark their initiatives as well as the respective framework and support institutions. Figure 7 illustrates the results by adding the responses for all ranks up. By far the most frequently mentioned country is Germany, with the rest of Western Europe overall in second place. Interestingly, both France and North America are mentioned more often as the most important benchmark region than Western Europe but are comparably seldom second or third choice. A few respondents each mention also Great Britain and the CEE region, while all other options receive none or only one mentioning.

The three most often mentioned benchmarking aspects were political support of cluster initiatives, high international orientation of the benchmark economy respectively their clusters and a well established science business cooperation relations. For all three aspects was Germany the most important benchmark region, closely followed by Western Europe in international orientation, which was also second most often mentioned region for science business cooperation as well as most often mentioned one for the amount of subsidies for cluster development. Germany and France are also important benchmarks in this respect, which forms a second group of benchmarking areas together with strong involvement of government agencies in the development of cluster initiatives as well as comprehensive know-how transfer/manager education. Least important seems to be cluster competitions. The most important benchmark regions overall are Germany and Western Europe, and in some categories France (subsidies, government involvement). A few cluster initiatives use the CEE region as benchmark with only small variations concerning the benchmark area. Altogether are changes of benchmarking regions between different benchmarking areas not very frequent and fairly small—in the sense of systemic differentiability. Comparably often, respondents did not choose between their benchmark regions and named all three of them.

**Figure 7:**
Top 3 reference countries or regions for benchmarking

number of respondents mentioning the respective region

n: number of observations
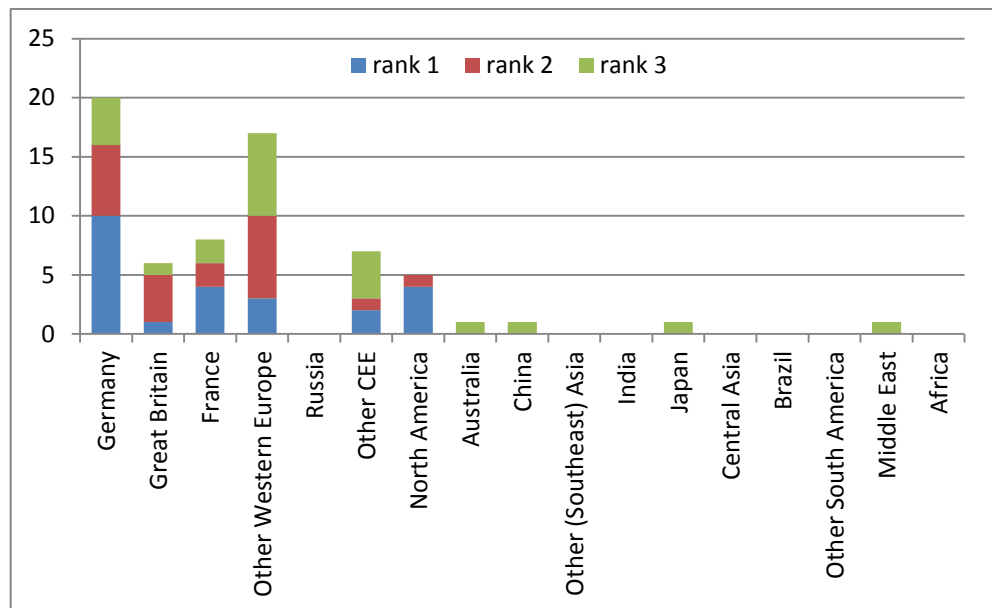
# 5    Bibliography

Etzkowitz, H., Leydesdorff, L. (2000): The dynamics of innovation: from National Systems and "Mode 2" to a Triple Helix of university–industry–government relations. In: Research Policy 29, 109-123.

Graffenberger, M., Rauch, M., Ulrich, J. (2011): Der Clusterbegriff in Theorie und Politik.

Wappler, S., Graffenberger, M., Rauch, M., Ulrich, J. (2011): International Activities of German Clusters and Regional Networks.

Scheer, G., von Zallinger, L. (ed.: Deutsche Gesellschaft für technische Zusammenarbeit – GTZ ) (2007): Handbuch Cluster Management. Teil B: Tools. Eschborn.

# 6    Appendix

**Table A.1     Questionnaire – cluster manager**

General information about the cluster/network

| | |
|---|---|
| Industry focus | |
| Year of estabshment | |
| Number of participating enterprises | |
| Thereof: Number of large-scale enterprises (>= 250 employees) | |
| Number of employees in the cluster | |
| Number of participating universities | |
| Number of participating non-university research and development institutions | |
| Number of participating intermediary institutions/multipliers (e.g. chambers, economic promotion agencies, associations etc.) | |

1.   What was the <u>main</u> reason for establishing your cluster? Please name only the single most important reason!
How important are the following topics for the development of the cluster, now?

| | Reason of establish-ment | Current importane | | | | |
|---|---|---|---|---|---|---|
| | name only one | none | | neu-tral | | high |
| Joint market development | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Joint marketing/PR | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Joint R&D projects | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Fostering human resources/joint education or vocational training programs | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Combining buying power | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Applying for/raising government subsidies | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Increasing international competitiveness | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |

2. How is the cluster management organized?

| | |
|---|---|
| Employed management in a management organization (judicial person) | ☐ |
| Employed management at a member organization | ☐ |
| Representative of a company | ☐ |
| Representative of a research institution | ☐ |
| Representative of a government institution | ☐ |
| Representative of another cluster member institution | ☐ |
| Representative of an outside institution | ☐ |

3. What are the main sources of funding for the cluster (management)?
   Please specify at most three!

| | |
|---|---|
| Fees/contributions of participating companies | ☐ |
| National government subsidies | ☐ |
| Regional or local government subsidies | ☐ |
| Employers associations grants or fees | ☐ |
| Public research institutions grants or fees | ☐ |
| Private research institutions grants or fees | ☐ |
| (Other) supporting institutions grants or fees | ☐ |
| Support programs of the EU | ☐ |
| Other, please specify | ☐ |

4. Generally, how satisfied are you with the political support of cluster establishment and development in your country?

|  | very unsatis-fied | (some-what) unsatis-fied | neutral | (some-what) satisfied | very satisfied |
|---|---|---|---|---|---|
| National government | ☐ | ☐ | ☐ | ☐ | ☐ |
| Regional government | ☐ | ☐ | ☐ | ☐ | ☐ |
| Local government | ☐ | ☐ | ☐ | ☐ | ☐ |
| EU | ☐ | ☐ | ☐ | ☐ | ☐ |
| International development agencies | ☐ | ☐ | ☐ | ☐ | ☐ |
| Business development banks | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other national agencies | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other international agencies | ☐ | ☐ | ☐ | ☐ | ☐ |

5. What are the main areas of cooperation between members of the cluster?
   Please name the 3 most important areas!

| | |
|---|---|
| Information exchange among cluster members | ☐ |
| Provision of information to the outside public (customers, suppliers, politics) | ☐ |
| Joint marketing (fair stands, trademarks, advertising, etc.) | ☐ |
| Market research | ☐ |
| Joint distribution | ☐ |
| Joint purchase | ☐ |
| Lobbying | ☐ |
| Employee education | ☐ |
| Vocational training/apprenticeships | ☐ |
| Joint production | ☐ |
| Joint product development | ☐ |
| Joint research | ☐ |
| Other, please specify | |

6. Please rate the <u>intensity</u> and <u>frequency</u> of all cooperation activities in your cluster?
   Please use a scale from 1 to 5 and fill in the appropriate number!
   1 meaning "very low"/"very infrequent",
   3 "moderate" and
   5 meaning "very high"/"very common/often"

| | intensity | frequency |
|---|---|---|
| Information exchange among cluster members | | |
| Information of the outside public (customers, suppliers, politics) | | |
| Joint marketing (logos, fair stands, trademarks, etc.) | | |
| Market research | | |
| Joint distribution | | |
| Joint purchase | | |
| Lobbying | | |
| Employee education | | |
| Vocational training/apprenticeships | | |
| Joint production | | |
| Joint product development | | |
| Joint research | | |
| Other, please specify | | |

7. How did the number of actors involved in the cluster evolve since inception?

| decrease sharply (<-50%) | decrease (-10% to -50%) | stayed the same (±10%) | increased (+10% to +50%) | increased sharply (>+50%) |
|---|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ | ☐ |

8. What is the most important market for the cluster?

| local markets | home country | regional markets (neighboring countries) | Europe | world markets |
|---|---|---|---|---|
| ☐ | ☐ | ☐ | ☐ | ☐ |

9. To your knowledge, have actors of your cluster already taken measures to initiate international activities or to conclude concrete co-operation agreements?

| yes | no |
|:---:|:---:|
| ☐ | ☐ |

10. Which strategic <u>international</u> activities are already been implemented by the cluster initiative?

| | |
|---|:---:|
| Information exchange abroad (visits, communication platforms, etc.) | ☐ |
| Conferences, seminars, workshops | ☐ |
| Exchange programs | ☐ |
| Lobbying | ☐ |
| Technology transfer | ☐ |
| Joint marketing | ☐ |
| Joint market development | ☐ |
| Joint project acquisition | ☐ |
| Joint research projects | ☐ |
| Joint product development | ☐ |
| Joint purchase or supply | ☐ |
| Other, please specify | |

11. Which regions are important for international activities of your cluster initiative?

| | | | |
|---|---|---|---|
| Germany | ☐ | Central and Eastern Europe, ex Russia | ☐ |
| Great Britain | ☐ | Russia | ☐ |
| France | ☐ | Central and South America, ex Brazil | ☐ |
| Other Western Europe | ☐ | Brazil | ☐ |
| China | ☐ | North America (USA/Canada) | ☐ |
| India | ☐ | Middle East/ Arabian Peninsula | ☐ |
| Japan | ☐ | Central Asia | ☐ |
| Other (Southeast) Asia | ☐ | Australia/New Zealand | ☐ |
| Africa | ☐ | | |

12. What are the reference regions for best practice of cluster development and cluster policy? Please name the top 3 regions by filling in "1", "2", and "3"!

| | | | |
|---|---|---|---|
| Germany | | France | |
| Great Britain | | Other Western Europe | |
| Central and Eastern Europe, ex Russia | | Russia | |
| North America (USA/Canada) | | Central and South America, ex Brazil | |
| China | | Brazil | |
| India | | Other (Southeast) Asia | |
| Japan | | Central Asia | |
| Middle East/ Arabian Peninsula | | Australia/New Zealand | |
| Africa | | | |

13. Why are the respective regions of question 13 best suited as reference for successful cluster development?
    Please tick the appropriate boxes based on your assessment of question 13.

|  | 1 | 2 | 3 |
|---|---|---|---|
| Strong political support ofcluster initiatives | ☐ | ☐ | ☐ |
| High financial subsidies for cluster establishment | ☐ | ☐ | ☐ |
| Comprehensive know-how support (manager education) | ☐ | ☐ | ☐ |
| Well designed cluster competitions | ☐ | ☐ | ☐ |
| Strong involvement of government agencies in cluster establishment | ☐ | ☐ | ☐ |
| Well established science business cooperation | ☐ | ☐ | ☐ |
| High international orientation of the economy/clusters | ☐ | ☐ | ☐ |
| Other, please specify | ☐ | ☐ | ☐ |

14. Who is involved in the definition of strategic goals for your cluster?
    How much influence on the strategy have the respective actors?

|  | Involved? | level of influence | | | | |
|---|---|---|---|---|---|---|
|  |  | none | a bit | some what | much | sole |
| Small enterprises | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Medium enterprises | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Large enterprises | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Public research institutions | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Private research institutions | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| National government agencies | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Regional/local government agencies | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Private intermediaries (banks, consultancies, …) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| Public intermediaries (development agencies, employers associations, …) | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |
| International organizations | ☐ | ☐ | ☐ | ☐ | ☐ | ☐ |