CLUSTERCOOP

WP3

Enhancing Policy Framework conditions for cluster support and cluster cooperation

Synthesis and evaluation report

July 2012

Content

1. Executive summary

This report is Output No. 3.1.3 in Work Package 3 of the ClusterCOOP project. The synthesis and evaluation report is based on the country/region analyses that were prepared previously by the project partners using a common methodology. The country/region analyses were prepared during August 2011 – November 2011, the German analysis was prepared in June-July 2012.[1] Some adjustments have been made during November 2011 – January 2012. The synthesis report was prepared in January – July 2012.

The synthesis report is based on 7 country/region analyses covering the Czech Republic, Hungary, Slovakia, Piedmont Region, Slovenia, Podkarpackie region (also including Poland) and Germany

Cluster policy per se is not frequently mentioned in the analyses. Cluster development is typically embedded in long term orientation policies at all partners. The referred policies are innovation, SME, regional development, competitiveness, comprehensive economic development, cohesion, the national strategic reference frameworks of the partner countries and their operational programmes.

In the frame of their relevant policies project partners presented and analysed altogether 31 programmes and 158 measures/activities.

Most presented programmes focus on raising competitiveness of SMEs, stronger R&D performance of the country/region or enhanced innovation activities etc. and use *clusters as tools* in achieving the aforementioned objectives. So it can be stated that in the countries and regions of the project partners development of clusters is typically not pursued for itself and is not the final objective of the programmes but clusters serve as a channel or provide a way to decision makers to reach their objectives.

Currently EU funds are the most important source of funding for cluster development related programmes for the partners involved in the ClusterCOOP project. In the case of Czech Republic, Hungary, Slovakia, Slovenia and Poland, the overwhelming majority of funding is from EU sources from 2004. National sources or regional level domestic sources are basically absent. In the case of Piedmont region we can see that a fair share of the funding is from national level and regional level sources. In Germany EU funds (namely the ERDF) is the main source for financing of cluster support measures.

Further, it can be stated the funds allocated to programmes related to cluster development grew with time in the last 10-12 years.

The programmes presented by partners target versatile groups in the economy and society. Only few programmes targeted directly clusters, rather innovative business/companies, SMEs, R&D institutions are named as primary target groups in the programmes.

In the case of most project partners the measures for supporting clusters are not available continuously over years but in campaigns that are adjusted e. g. to the start of the implementation of a new policy.

[1] Due to change in partnership.

Each partner listed numerous institutions that are involved in policy making and in the implementation of the measures related to clusters. Almost in all countries ministries responsible for development, economic affairs, RDI have been named. In some cases the measures themselves are implemented by ministries but mostly implementation is delegated to an intermediary/implementation body.

More than half of the presented policies related to clusters gave no definition on *clusters*. The policies that define clusters use altogether 13 different cluster definitions.

ClusterCOOP project partners presented altogether close to 160 measures, activities targeted to clusters from the past 10 years in their respective policy analysis. The presented measures are versatile in many aspects. Nevertheless, we can group the measures in two major categories:

1. Direct financial support to the clusters/cluster (management) organisations/cluster members. These are typically non-refundable grants or in few examples refundable grants (financial instruments under JEREMIE).
2. Indirect support to clusters/cluster (management) organisations/cluster members through:
    a) training, education
    b) information
    c) mapping
    d) monitoring and evaluation

The frequently mentioned beneficiaries in the measures and activities presented by partners are as follows:

- Cluster coordinators/cluster management organisations
- Clusters
- Cluster member companies - individually or a group of the members
- Universities, R&D institutions – either as formal cluster members or as per se
- Municipalities/regional authorities
- Ministries, agencies

On the results and impacts a mixed picture can be observed from partners' reports. In the case of many closed programmes often no regular evaluation or impact analyses were performed. In other cases outputs were registered and measured against expected results and evaluations were performed. In the case of a lot of presented measures and programmes they are still running and no evaluation or impact analysis has been carried out yet.

2. Introduction and methodology

This report is Output No. 3.1.3 in Work Package 3 of the ClusterCOOP project. The synthesis and evaluation report is based on the country/region analyses that were prepared previously by the project partners using a common methodology. The common methodology of the country/region analyses made it easier to compare policies related to innovation and clusters.

The country/region analyses were prepared during August 2011 – November 2011, the German analysis was prepared in June-July 2012. Some adjustments have been made during November 2011 – January 2012. The synthesis report was prepared in January – July 2012.

The synthesis report is based on 7 country/region analyses as presented in the table below.

No.	Country/region	Prepared by
1.	Czech Republic	• PP3 – Ministry of Industry and Trade of the Czech Republic • PP4 – Investment and Business Development Agency - CzechInvest
2.	Hungary	• LP – Ministry for National Economy, Hungary • PP11 – MAG – Cluster Development Office
3.	Slovakia	• PP5 - Ministry of Economy of the Slovak Republic • PP6 – Slovak Innovation and Energy Agency
4.	Piedmont Region	• PP8 – Piemonte Region
5.	Slovenia	• PP9 – University of Ljubljana
6.	Podkarpackie Region and Poland	• PP10 – The City Office of Rzeszów
7.	Germany	• inno Group

Specifics of the methodology used by partners:

1. Czech Republic: The documents used to develop the country analysis are related to the cluster development process in the Czech Republic, such as the National Cluster Strategy, the National Cluster Study, other relevant analyses which had been processed by CzechInvest, Ministry of Industry and Trade and their subcontractors. Further, an analyst of Section EU Funds, Research and Development of Ministry of Industry and Trade Czech Republic was interviewed.
2. Hungary: A broad range of official policy and programme documents, text of concerned calls for proposals have been reviewed to compile the country analysis.

3. Slovakia: All relevant strategies, programme documents, government and ministry documents and also selected reports, and impact studies were used to make the country analysis. Further, three ministry officials have been interviewed from the Ministry of Transport, Construction and Regional Development, the Ministry of Agriculture and Rural Development and the Ministry of Education, Science, Research and Sport.
4. Piedmont Region: the SWOT is based only on documents review and the documents used are mostly reviews/assessments commissioned by the Regional Government or Regional Directorates. This obviously reflects in the extent of the assessment and evaluation carried out. In the SWOT of the Piedmont Region, analysis and findings are quite inward looking and do not include ex-post quantitative evaluation of measures/programmes.
5. Slovenia: Relevant official policy and programme documents, evaluation reports, tendering documentation and third party reports have been used to make the country analysis.
6. Podkarpackie Region and Poland: This document has been prepared by a team of experts associated with the Institute of Economics at the University of Information Technology and Management in Rzeszów. Two approaches have been used to collect and process data:
   - desk research of governmental policies and strategies as well as operation programmes.
   - In-depth interviews (IDIs) with key specialists involved in regional clustering processes representing enterprises, regional authorities and business support organizations.
7. Germany: The policy analysis has been prepared by reviewing a broad range of policy documents, related evaluations and analyses and by interviewing the Federal Ministry of Economics and Technology (BMWi) responsible for cluster policies on a federal level.

Based on the reports 2-4 policies deal in a way or another with clusters at project partners. The quoted policies by partners are, as follows:

- science, technology, innovation policy
- industrial, entrepreneurship policy
- competitiveness policy
- regional development policy
- cluster policy
- urban development policy
- human capital development policy

Cluster policy per se is not frequently mentioned, the most frequently mentioned policies were innovation policy, entrepreneurship policy, competitiveness policy and regional development policy.

In the frame of their relevant policies project partners presented and analysed altogether 31 programmes and 158 measures/activities (see table below).

Country/region	Concerned policies	No. of programmes	No. of measures/ activities
Czech Republic	• cluster policy, • industrial and entrepreneurship policy, • innovation policy	3	10
Hungary	• competitiveness policy • regional development policy • innovation policy	5	25
Slovakia	• innovation policy • competitiveness policy • science and technology policy	8	33
Piedmont Region	• regional development policy • research and innovation policy • competitiveness plan (Multi-year plan for Piedmont)	3	43
Slovenia	• entrepreneurship and competitiveness policy • research and innovation policy	3	14
Podkarpackie Region and Poland	• innovation policy • regional development policy • competitiveness policy • human capital development	5	20
Germany	• innovation policy • cluster policy	4	13
Total	**-**	**31**	**158**

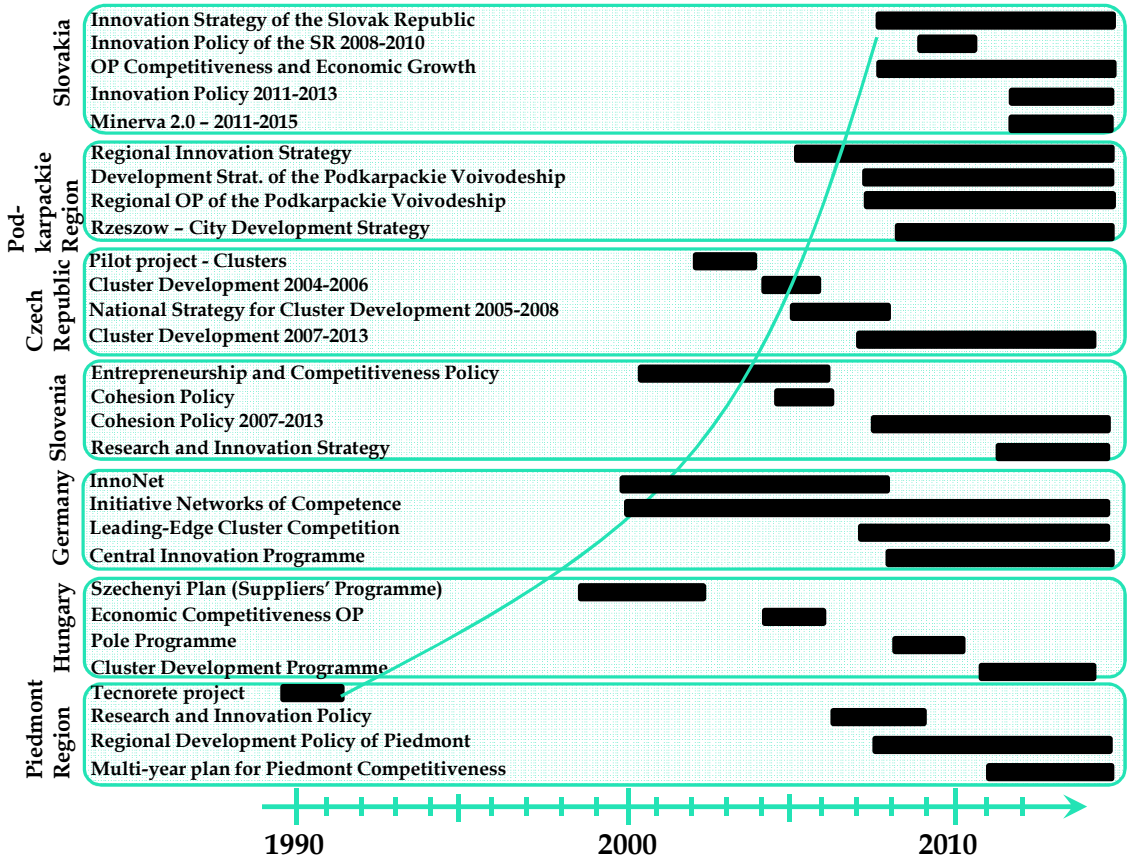
Terminology: In this paper we use the terms below with following meaning:

- Cluster management organisation: An entity that manages the operation of a cluster and provides services for the members of the cluster
- Cluster initiative: A policy level action/measure to support clusters
- Cluster: please, see chapter 4.1 on the various cluster definitions that project partners gave

3. Analysis of policies and programmes

3.1. Development path of programmes linked to clusters

In general there was a clear upswing of programmes linked to clusters in the countries/regions of the project partners in the past decades. The earliest programme to appear in the partner analyses is Tecnorete in the Piedmont region in the beginning of the 1990's. In Hungary, suppliers' programmes started from 1998, which can be considered as a forerunner to cluster programmes. In Germany, the federal level programmes called InnoNet and Initiative Networks of Competence were both launched in 1999. The Entrepreneurship and Competitiveness Policy of Slovenia lasted from 2000-2006 and can be looked at as an early policy linked to clusters. Almost all partners listed programmes from the second half of previous EU budgetary period (i. e. from 2004, when CZ, HU, PL, SK and SI joined the European Union). A late comer in this respect is Slovakia, the earliest programme linked to clusters is the Innovation Strategy of the Slovak Republic for 2007-2013.



3.2. Consistency, strategic approach and embeddedness of cluster development

Cluster development is typically embedded in long term orientation policies at all partners. The referred policies are innovation, SME, regional development, competitiveness, comprehensive economic development, cohesion, the national strategic reference frameworks of the partner countries and their operational programmes.
However, there are differences between policies how central the role of clusters and how explicit the reference to clusters is in these policies. In general, clusters are not in the focal point of these comprehensive policies but are considered as a supporting tool to reach some higher objective (e. g. competitiveness of enterprises, growth of SMEs). In many of the analysed policies clusters do not appear explicitly at all, nevertheless the articulated objectives and planned actions contribute to the development of clusters and through them to final goal of the policy in question.
As for the development and support of clusters at policy level we can observe two different approaches. In the first approach there is typically a mapping including the identification of local/regional strengths in terms of industries/sectors searching for local concentrations. Based on the mapping region-industry pairs (one region and typically 1-2 industries) are defined and support is provided to the identified region-industry pair. In the second approach decision makers determine the minimum requirements set against a cluster typically in terms of critical mass and governance but without strict constraints on industries or regions and any applications that meet those minimum requirements can be supported. Interestingly the two approaches may be followed by the same country in different time periods but sometimes also simultaneously.

3.3. Complexity of programmes

Most presented programmes focus on raising competitiveness of SMEs, stronger R&D performance of the country/region or enhanced innovation activities etc. and use *clusters as tools* in achieving the aforementioned objectives. So it can be stated that in the countries and regions of the project partners development of clusters is typically not pursued for itself and is not the final objective of the programmes but clusters serve as a channel or provide a way to decision makers to reach their objectives.
In Piedmont region the regional development policy is implemented via Structural Funds. The ERDF Regional Operational Programme is the main implementing program of the policy. The first priority under this programme is Innovation and Production Transition, which aims at strengthening the regional innovation system, increasing technological transfer and cooperation among firms and research institutions. The priority supports innovation clusters and they were considered as a tool of development policy, aiming at creating, mobilising and strengthening specific sectors.
Looking at the example of the Pole Programme 2008-2010 in Hungary, the programme was a comprehensive economic development programme with a strong

focus on R&D and innovation. This meant that substantial grants were only available for cluster member companies if they realised innovation projects.
In Germany one of the most relevant strategies linked to clusters is the High-Tech Strategy from 2006 (HTS) and HTS 2020, which is an update to the strategy with objectives for 2020. HTS is the first comprehensive, multi-agency strategy for research, development and innovation. It has been developed to concentrate the public resources in this field as well as to improve coordination between the various players through a joint vision. In the frame of HTS a number of programmes using and developing clusters have been launched.

3.4. Allocated funds

Currently EU funds are the most important source of funding for cluster development related programmes for the partners involved in the ClusterCOOP project. In the case of Czech Republic, Hungary, Slovakia, Slovenia and Poland, the overwhelming majority of funding is from EU sources from 2004. National sources or regional level domestic sources are basically absent. In the case of Piedmont region we can see that a fair share of the funding is from national level and regional level sources. In Germany EU funds (namely the ERDF) is the main source for financing of cluster support measures.
Further, it can be stated the funds allocated to programmes related to cluster development grew with time in the last 10-12 years.
In some cases partners reported in their country/region analysis that no funds have been allocated to policies directly, which bring along problems during implementation.

3.5. Target groups of programmes

The programmes presented by partners target versatile groups in the economy and society. Only few programmes targeted directly clusters, rather innovative business/companies, SMEs, R&D institutions are named as primary target groups in the programmes.
The most frequently mentioned target groups with direct relevance to clusters are:

- SMEs,
- innovative enterprises,
- educational and research and development institutions,
- municipalities.

Often SMEs are mentioned against large companies as the primary target groups but there are examples, in which no preference is given to SMEs, or in which large companies are named as target group.

In Germany the responsibility for building up and develop emerging clusters lies on the federal state level, while the German Government primarily supports those cluster initiatives that already have shown their excellence in a specific technology or

industry field. On both regional and national the approach is both bottom-up and top-down. While the focus lies on strengthening the existing strong clusters, the aim is also to build up clusters in thematic fields that are seen as future potential areas.

Only few of the presented programmes used sectoral focus (e.g. automotive, electronics, plastic-rubber in the case of the Hungarian Suppliers' Programme 1998-2000; export-oriented manufacturing industry in the case of the Economic Competitiveness OP in Hungary).

In some cases the target groups defined were too broad or too general (e.g. all SMEs in the country, municipalities in the country, etc).

3.6. Continuous provision of measures for cluster support

In the case of most project partners the measures for supporting clusters are not available continuously over years but in campaigns that are adjusted e. g. to the start of the implementation of a new policy. Further, long term policies or strategies foresee actions in multiple waves but often it is only the first wave of actions, which are implemented. The second or latter waves of actions are either late than announced originally or not implemented at all. This clearly affects potential beneficiaries negatively since they count on the announced actions. The federal level Germany policies seem to be an exception since programmes like InnoNet or Networks of Competence have been running for close to or more than 10 years.

3.7. Involved institutions

Each partner listed numerous institutions that are involved in policy making and in the implementation of the measures related to clusters. Almost in all countries ministries responsible for development, economic affairs, RDI have been named. In some cases the measures themselves are implemented by ministries but mostly implementation is delegated to an intermediary/implementation body.
In Poland there was an example of delegating project completion to a consortium led by a university. Again in Poland, the City of Rzeszów, a local government and bodies of the Podkarpackie Region were in charge of implementing local/regional level programmes/measures. The regional level implementation was strong in the case of Piedmont region, as well.
In Slovenia responsible authority for the design, implementation and monitoring of the Program of Measures in Support for Entrepreneurship and Competitiveness 2002-2006 was the Ministry of Economy. Individual measures and activities were implemented by three main public agencies, namely National Agency for Entrepreneuship and Small Business Development, National Agency for Technology and National Small Business Development Fund.
In Piedmont Region the region itself is the main institution involved as sponsor and implementing authority in the Regional Operational Programme. As for the multi-year plan for Piedmont competitiveness, the region had involved in the design of the plan all the Regional public authorities, economic, social and institutional actors relevant for the implementation such as provinces, municipalities, chambers of

commerce, trade unions, organisations of undertakings, universities, bank foundations.

In the Czech Republic CzechInvest Agency was appointed in most cases as responsible for the implementation of the determined measures.

In the case of Hungary a dedicated unit is entrusted with the coordination of cluster related issues since 2008. During 2008-2011, this unit was the Pole Programme Office, since 2011 it is the Cluster Development Office of MAG (MAG is the SF intermediary body responsible for economic development and RDI calls).

In Germany, the High-Tech Strategy (HTS) has been published by the Federal Ministry of Education and Research (BMBF). However, it has been developed in cooperation with the Federal Ministry of Economics and Technology (BMWi). Since the HTS links up topics in various fields of innovation policy across Federal Ministries, it is furthermore a coordinated effort of the Federal government as a whole. Accordingly, the individual Ministries are also putting together research, development and innovation strategies for their areas of responsibility.

To accompany the implementation of the HTS, the Industry-Science Research Alliance has been designed. The alliance is a forum of leading representatives from science and industry in which specific innovation strategies and measures are proposed and initiatives for their implementation developed.

4. Analysis of measures and activities

4.1. Cluster definitions

More than half of the presented policies related to clusters gave no definition on *clusters*. The policies that define clusters use altogether 13 different cluster definitions. It is only the Piedmont Region, which adheres consistently to one single definition (which is the definition of the Community Framework for State Aid for Research and Development and Innovation - 2006/C 323/01). The other countries/region either used multiple definitions in the past policies or have not defined the term *cluster* in each policy. It is worth mentioning the case of the Pole Programme and the subsequent New Szechenyi Plan in Hungary, which on purpose gave no definition on clusters at policy level. Nevertheless, the various calls for grants under the Pole Programme set specific requirements for the clusters that wished to apply.

The most often quoted features of a cluster were the following in the used definitions:

Feature	No. of mentions
supporting/other organisations; research organisations and universities; other regional partners; business and non-business entities; public authorities	12
cooperation; network of mutual cooperative relations; voluntary co-operation; network based on a civil contract; groupings of independent undertakings; collection of firms	11
specialisation in related lines of business; in one or several areas of activity; in a particular sector; complementary business activities; sectoral concentration	8
local concentration; within the scope of a given regions; in a particular region; spatial concentration	7
vertically linked firms; between enterprises - suppliers and customers; given production chain	4
exchange of knowledge and expertise; creation of knew knowledge; generate specific knowledge-building processes	4

If clusters or members of clusters apply for grants often there are minimum requirements concerning the size and composition of the cluster. In Hungary, depending on the type of the call a minimum of 5-10 members are required. In the Czech Republic the supporting authorities required minimum 10-15 members of clusters to be able to qualify for grants. The German federal level InnoNet programme targeted networks of at least four SMEs and two public research institutes.

4.2. Types of measures and activities

ClusterCOOP project partners presented altogether close to 160 measures, activities targeted to clusters from the past 10 years in their respective policy analysis. The

presented measures are versatile in many aspects. Nevertheless, we can group the measures in two major categories:

1. Direct financial support to the clusters/cluster (management) organisations/cluster members. These are typically non-refundable grants or in few examples refundable grants (financial instruments under JEREMIE).
2. Indirect support to clusters/cluster (management) organisations/cluster members through:
    a) training, education
    b) information
    c) mapping
    d) monitoring and evaluation
    e) benchmarking

Below, there is a selection of examples and practices.

1. Direct financial support to the clusters/cluster (management) organisations/cluster members

   All project partners reported about calls for proposals directed to clusters.

   In the Cooperation – Clusters Programme in the Czech Republic the supported activities were joint projects of the cluster. Each joint project had to be approved by the majority of the cluster members and minimum 3 cluster members had to participate in each joint project. The following types of joint projects could be granted subsidy:
   - Joint projects in the field of technical infrastructure and innovation
   - Joint projects in the field of marketing and promotion
   - Joint projects in the field of human resource development
   - Joint projects in the field of networking, sharing know-how and capacities

   In Hungary under the Pole Programme and under the Cluster Development Programme non-refundable grants were/are available for cluster management organisations for set-up and operation of the management organisation. Further, grants were/are available for joint innovation projects of cluster members. In a call only those innovation projects were eligible, in which companies co-operated in the innovation of a new product/service. In another call grant was/is available for member companies of accredited clusters if they decided to set-up jointly a project company implementing an innovation project. The beneficiary was the jointly established project company.

   In Slovakia building regional innovation centres could be granted subsidy under OP Research and Development.

   In the Piedmont Region within Priority 1 (Innovation and Production Transition) of Regional OP a specific measure was included for the creation of innovation clusters (called '*Poli di Innovazione*').

   In Slovenia the Enterprise Cooperation and Cluster development sub-program included a measure to support cluster development at national and regional level in different stages, initiation, organisation and development. Financial support was given for development of cluster organisation, managerial costs, strategy and program development, training and internationalisation.

In Poland a measure of the OP Innovative Economy offered support to the coordinators of clusters to prepare a joint product/ or innovative service and to their introduction into the market.

In Germany, the InnoNet was conceived as an idea competition in 13 rounds. Selected projects received government grants for the participating research institutions (up to 90 % of their R&D expenditures) over a period of maximum three years. The participating companies jointly had to fund at least 10% of the research institutions' R&D expenses and to provide at least 20% of the total project expenses. In return, they received the exploitation rights for the project results as determined in a cooperation agreement. As a further example from Germany the Leading Edge Cluster Competition is designed as a competition with three rounds (2008, 2010, 2011). Selected clusters receive funding for the implementation of their strategy in a value of EUR 40 million each. The funding can be used for e.g. focus on research and development, international cluster marketing, recruitment of staff, investments in equipment for training, R&D and innovation, or processes for cluster management.

2. Indirect support
   a) training, education

      In the Czech Republic, CzechInvest organised workshops as part of the National Strategy for Cluster Development 2005-2008. On the workshops all interested potential stakeholders were invited to get acquainted with the cluster concept (altogether 340 participants)

      In the Czech Republic, CzechInvest organised a programme for training and certification of cluster facilitators. One of the objectives was to ensure that CzechInvest has an available group of articulate and experienced consultants on whom it can call for input on the programme, support in promoting and delivering the programme (more than 80 cluster facilitators trained).

      In Hungary the Pole Programme Office organised two major international conferences entitled 'Clusters In Europe I-II.' in 2009 and 2010. The lecturers were prominent professionals of cluster development/cluster policy from all over the world. Participants came from all over Europe and their number reached 150-200.

   b) information

      As part of the National Strategy for Cluster Development 2005-2008, CzechInvest launched new web sites on clusters. Further it translated *'The Cluster Initiative Green Book'* into Czech. Annual Cluster Newsletters have been circulated. CzechInvest organised two cluster conferences in 2005-2006 (more than 600 participants attended both conferences).

      A measure of the Slovak Republic's innovation strategy was establishing a central information portal aimed at the support to innovativeness in the business sphere.

In Hungary the Pole Programme Office published the 'Cluster Handbook', which summarised relevant literature on clusters, listed available calls for clusters and included some information on intellectual property rights.

c) mapping
In the Cluster Mapping phase of the Czech Clusters Programme 2004-2006, cluster facilitators were granted subsidy to process studies and make analyses before the establishment of clusters.

d) monitoring and evaluation systems
Under the Strategy for international competitiveness of the Czech Republic (2012-2020) the establishment of an efficient monitoring and evaluation system was decided for checking and measuring effects and results achieved through clusters as a tool of the regional innovation policy.
In Hungary the cluster accreditation scheme can be considered as a national level tool to monitor the development of clusters over years. In the accreditation process clusters wishing to obtain the accreditation title share lot of quantitative and qualitative information on cluster and cluster member level, which then can be analysed an utilised for an improved policy making.

e) benchmarking
The federal level German programme Initiative Networks of Competence has been initiated by the Federal Ministry of Economics and Technology (BMWi) in order to provide a quality label for the best German innovation networks. The aim of the programme was to improve networking between industry and research, support development of (internationally) visible clusters, and by these means market Germany both nationally and internationally. A central tool in the programme was the benchmarking of the cluster organisations against a peer group in order to provide recommendations to the cluster management for further development.

4.3. Beneficiaries of the measures and activities

The frequently mentioned beneficiaries in the measures and activities presented by partners are as follows:

- Cluster coordinators/cluster management organisations
- Clusters
- Cluster member companies - individually or a group of the members
- Universities, R&D institutions – either as formal cluster members or as per se
- Municipalities/regional authorities
- Ministries, agencies

Some practices and examples of the measures included in the country/region analyses are summarised below:

Cluster organisations/cluster coordinators:

In a Polish measure the coordinator can be a foundation, association, joint stock company or limited liability company research unit. The coordinator should have non-profit status and be registered on Polish territory. The coordinator should have at least one year of experience in the management of cooperative and linkage of services to entities operating within cooperative relationships. It must also demonstrate employment of professional staff.

In a different Polish measure cluster coordinator can be:

- organization promoting economic development,
- research unit,
- organization promoting innovation,
- that are promoting and business and research cooperation links.

In the Czech Clusters Programme 2004-2006, the beneficiaries of the Cluster mapping measure were cluster facilitators, i.e. regional agencies or other institutions representing regions, educational and R&D institutions based in the Czech Republic experienced enough to undertake preliminary economic analysis of the selected region and also enterprises serving as driving force for the cluster creation.

In the Cooperation – Clusters Programme (2007-2013) in the Czech Republic the beneficiaries were the cluster organisations that must have had a legal form (civil association, an interest grouping of legal persons, a limited liability company, a public limited company or a cooperative.

In Hungary, the cluster management organisations are typical beneficiaries of cluster related calls. In the Regional OPs calls were/are available, in which the cluster management organisation is the beneficiary. Grant was/is available for the set-up and operation of the cluster management organisation and for joint investments realised in the interest of the cluster members. During the years there were changes concerning the requirements set for cluster management organisations. In general, the higher the cluster is ranked in the 4-stage-cluster development model, the stricter the legal requirements for the cluster management organisation are (e.g. the cluster management organisation of an accredited cluster must be a company and cannot be an association or a foundation).

In the ZIM-NEMO measure under the German federal level *'Central Innovation Programme SME'* collaborative network projects are supported. Through this part of the programme, two phases of networks are supported: (1) The design and establishment of the network, and (2) the implementation and further development of the network design. More specifically, funding is provided for network management services, such as acquisition and contractual engagement of the network partners, analysis of strengths and weaknesses of the network partners, identification of important fields of technology, market analysis, marketing concept, public relations, project controlling and impact monitoring. Eligible to submit an application are external network management institutions or research institutions involved in the network.

In the German Free State of Saxony, the GRW Cluster Management programme targets cooperation networks and the management of cluster initiatives. The networks/clusters require at least ten partners of which 60 percent are SMEs. Clusters can receive funding for their management in order to be able to build up inter-corporate structures and to conduct network management. Examples for eligible costs are investments related to the management, planning, controlling and monitoring of the processes of a cooperation or cluster.

Clusters:

The clusters themselves are not typical direct beneficiaries of the measures. There is one example however - the Establishment and Development phase of the Programme Clusters (2004-2006) and the Cooperation Programme (2007-2013) in the Czech Republic granted subsidy to clusters that had a legal entity licensed to do business in the Czech Republic.

In a Polish measure support may be granted for the creation and development of the cluster, which includes: at least 5 companies, at least one scientific body and at least one business support organization established in at least two Polish regions of Eastern Europe.

In the Clusters Programme in the Czech Republic (2004-2006) the number of business regionally located in the cluster needed to be at least 10. Further requirements were such as the cluster should be innovation- and export oriented, connection to R&D and educational facilities, clearly defined sector of interest, support of key businesses in the region, strong linkages among suppliers and customers.

In the above mentioned Czech call the clusters had to have at least 15 independent members, the majority (60%) of cluster members had to be represented by SMEs and a Czech university or R&D institution had to be a member of the cluster.[2]

In Hungary, under the Pole Programme, there was a call for start-up clusters for the set up and operation of the cluster management organisation. To be eligible the cluster had to have at least 5 companies. At the start of the accreditation scheme only those clusters were eligible, in which there were at least 10 members, after a recent modification only those clusters are eligible, in which there are at least 15 SMEs.

Cluster member companies

In Hungary, there are calls under the Economic Development Operational Programme, in which cluster member companies of accredited clusters are eligible for support provided they realised a joint innovation project. In one of the calls (EDOP-1.3.1/B) the beneficiary is a cluster member company, which undertakes to cooperate with at least two other companies in the implementation of the innovation project. In another call (EDOP-1.2.1) a project company founded by cluster members is eligible for funding. The project company is the beneficiary and so it has to implement the innovation project.

In Slovenia, the measure supporting joint research and investment projects was implemented with public calls in 2008 and 2009. The aim was to support joint research project for groups of companies (at least two) and R&D institutions that will lead to development of new or improved products with higher added value. Co-

[2] The call defined further qualitative requirements not mentioned in here.

financing was offered for cost of R&D activities as well as related investment in necessary equipment and production facilities for the experimental development. In this call formal membership in a cluster was not required.
In Germany, the federal level Central Innovation Programme SME (ZIM) offers funding to cooperate R&D projects between companies and between companies and research institutions (ZIM-KOOP).

Universities, R&D institutions:
In Poland, under OP Innovative Economy grants were allocated to co-finance innovative projects implemented by scientific and research entities.
In Hungary under the Pole Programme infrastructure development grants were offered to higher education institutes. As part of the Social Infrastructure Operational Programme universities and R&D institutions could apply for grants to implement developments on their buildings and equipment.

Municipalities/regional authorities:
In Hungary under the Pole Programme infrastructure development grants were offered to municipalities of the pole cities. One of the calls was available for the establishment of multifunctional social spaces that exhibit the innovation results of the region.
In Poland, the *Rzeszow – City Development Strategy to 2015* set as one of its objectives the creation of favourable conditions for the development of Rzeszów as an attractive place for business, higher education, science and culture. One of the specific objectives related to this is as follows: 'The use of the Aviation Valley and other innovative clusters to promote the image of Podkarpackie in Europe.' The target group of the strategy are the city authorities.
In Poland, the Development Strategy for the Podkarpackie Voivodeship 2007-2020 (2010 update) aims at developing domestic and international competitiveness of the regional economy through increasing its innovativeness. The target group of the strategy is the Voivodship's government. 8 strategic areas have been proposed for further development. Among others it is planned to develop an advisory and information system for entrepreneurs covering areas related to enterprise management.

Ministries, agencies:
In the Czech Republic a National Cluster Study was prepared on the basis of the National Cluster Strategy between September 2005 and February 2006. The target group of the study were the Ministry of Industry and Trade and CzechInvest. The general objective of the study was to provide detailed information and background for planned programmes supporting competitiveness of key sectors of the national economy in form of supporting cooperation among public and private sector.

5. Results and impacts

The country/region analyses included a sub-chapter on impact assessment. Partners could list direct outputs and results of programmes, they could refer to evaluations that were carried out and they could add their professional opinions on reasons for successes or failures of programmes.
A mixed picture on the results and impacts can be observed from partners' reports. In the case of many closed programmes often no regular evaluation or impact analyses were performed. In other cases outputs were registered and measured against expected results and evaluations were performed. In the case of a lot of presented measures and programmes they are still running and no evaluation or impact analysis has been carried out yet.

In the Czech Republic, the National Cluster Strategy (2005-2008) defined expected results in the form of measurable outputs, some of which were measured after the realisation of the strategy. Evaluations of cluster measures financed from Structural Funds in the programming period 2004-2006 were part of the OP evaluations. In the current programming period (2007-2013) further evaluations have been carried out focusing on the impacts of R&D measures, wherein clusters programmes are included. Also a counterfactual analysis of several cluster organizations was performed, where the development of companies outside the cluster in the given sectors was taken into account in relation to the growth of similar sectoral companies, which were cluster members in the given period.

In Hungary the early forerunner programmes in 1998-2002 had no formal evaluations, nevertheless researchers provided qualitative assessments on them in the past years. Based on them it can be concluded that these programmes had no major impacts in the economy but were successful in spreading the concept of cooperation among various stakeholders and embedded for the cluster programmes in the succeeding years. The cluster measures funded from Structural Funds in 2004-2006 were evaluated as part of the SF programmes evaluation activities. The clusters funded under this programme were still rather marginal actors of the Hungarian economy without real economic impact. Nevertheless, on the micro-level they managed to create a somewhat better business environment for their members. The Pole Programme in 2008-2011 was the first economic development programme in Hungary that used a systematic approach to develop clusters and mobilised substantial grants for the support of cluster development. Yet, it is not possible to evaluate the long term impacts of the Programme since the supported projects have just been finished or are still implemented.

In Slovakia there are a few important policy documents focused on the economy performance improvement with and without explicitly defined clusters role. Generally clusters are not the key element of the important strategic materials up to now. The tools currently applied are mostly unsystematic, focusing on companies not having sufficient funds for innovations at their disposal. The second generation

Innovation Policy for the 2011-2013 considers clusters as economy driver and suggests measure that aims to improve clusters performance but no regular evaluations have been performed for this measure yet.

In Piedmont Region the ERDF funds used for the implementation of the Regional development and innovation policy were essential to support the set up of formal clusters in an economic and industrial environment characterised by non formalized clusters and agglomerations still bounded to the model of industrial districts, mainly not focused on innovation and with low degree of coordination and integration. Concerning the impact assessment of research and innovation policy the regional system for research and innovation for the period 2007-2009 showed its main successes in three areas:

- enhancement of the collaboration among SMEs and between SMEs and universities, research centres and the financial system.
- strengthening of the partnerships between regional beneficiaries of funded projects (knowledge generators and knowledge users)
- fostering of knowledge transfer and strategic co-ordination among different R&D actors and sectors.

In Slovenia evaluation of the program underlying the Entrepreneuship and Competitiveness Policy of Slovenia 2000-2006 is divided in two parts, because of the different implementation framework; from 2000 till 2004 and from 2004 till 2006, when the program was co-financed by the European structural funds. First comprehensive external evaluation of the program was conducted in 2004, involving measures and activities in the period 2000-2003. Evaluation shows high effectives in terms of private investment (every EUR from the budget attracted 5 EUR from private sector), private sector development and also encouraging fiscal effects. Competitiveness indicators in the companies supported, shows higher than average growth. Analyses also proved that private funds invested in research and development projects in enterprises were returned into the budget through taxes in one and a half years. Networking and cluster development measures were proven the most effective in terms of private sector investment and long term synergy effects. Concerning the measures of the Cohesion Policy 2007-2013 programs and measures are in implementation till 2013. Almost all funds available for the financial perspective are allocated. Two mid-term evaluations were already prepared; evaluations of the R&D support measures and mid-term evaluation of the programs of Centers of Excellence. Both evaluations approved expected outputs and positive results.

In Poland there are only few direct funding so-called measures or activities within the frames of operational programme that support directly establishment and development of clusters. However there are numerous other possibilities to finance cluster cooperation in an indirect way, since most of the programmes allow submission of the proposal in partnerships (e.g. that can be formed by clusters). The operational programmes cover programming period of 2007 - 2013, therefore scarce information exists on evaluation of results.

In Germany evaluation of programmes takes place in most cases. For example, the efforts under the High Tech Strategy Programme are paying off. Germany has been ranked fourth among 26 industrialized countries in the so called "Innovation indicator 2011". Between 2006 and 2009, Germany has increased its spending in selected future areas from 8.5 to 9.3% of GDP. For another example - in the case of the Baden-Württemberg federal state level programmes, they are continuously developed in order to match the offered services to the need of clusters. The cluster policy of Baden-Württemberg is assessed as very sustainable.

6. Analysis of country/region SWOTs

As part of the country/region cluster policy analysis each project partner prepared a SWOT table on cluster development in their country/region. These partner-level SWOT tables have been synthesised by MAG by grouping the similar lines to headings in each quadrant of the SWOT mentioned by partners. As a result a joint SWOT table was created. Following this, partners were asked to prioritise the headings in the joint SWOT table reflecting the importance/relevance of each heading in their country/region. The ranking was done on a 0-3 scale, the numbers in the scale had the following meaning:

0	No relevance
1	Low relevance
2	Medium relevance
3	High relevance

Finally, the country/regions rankings were joined and the headings were ranked in decreasing order of relevance. The output table can be found in Annex I, the detailed quadrants of the SWOT can be found in Annex II.[3]

Concerning **strengths** the highest number of points (15) were given to 'Already existing and well-performing clusters' and 'Strong R&D and higher education background'. This means that partners report a solid cluster base on which policies linked to clusters can be built. A consequence may be that no 'greenfield' policies for cluster development are needed but polices can be based on the already existing and well-performing clusters and actions may focus on these clusters. Further, these clusters may be a suitable channel for state and regional authorities to reach business actors with their actions in the field of SME development, competitiveness or innovation. It is very important that partners attributed the same high relevance (15 points) to 'Strong R&D and higher education background.' Objectives of policies linked to clusters may be reached more efficiently if this background is utilised well and R&D and higher education sphere is connected with business. High ranking (13 points) was given to 'Available funding sources', so partners agree that for the development of clusters adequate funding is available. As pointed out previously most of these funds are EU co-financed Structural Funds resources. Partners consider the existing 'National/regional level policies targeted/linked to clusters' as a further strength (12 points). Medium relevance was attributed to 'Tools/measures linked to the development of clusters' (11 points), 'International links' (10 points) , 'Favourable business environment' (10 points), 'Strong/growing industries/sectors' (10 points), 'Bottom-up clusters' (9 points) and 'Local and regional actions' (9 points). Compared

[3] Inno Group, which was responsible for the German policy paper was not involved in the ranking since by the time they joined the partnership the ranking had been done. Consequently the ranking was done using the inputs from the other countries/regions. Nevertheless the detailed SWOT tables have been extended with the German input.

to other factors less relevance was given to 'Strong/dedicated institutional background' (8 points) and 'Analytic methods, statistical methods' (6 points).

Concerning **weaknesses** highest number of points were given to 'Difficulties in translating knowledge to marketable products' (15 points), which is a key issue for clusters. In fact - among other reasons - clusters are promoted so that knowledge is translated to marketable products. The high relevance attributed to this factor may mean that this issue is still critical in the countries/regions of partners and no major results have been reached up until now even if there is solid cluster base and there are policies and actions targeted to clusters. 'Problems of innovation and educational environment' (13 points) were also ranked high, which is a clear indicator that there may be a strong R&D and higher educational background but connecting it to the business sector is a strong challenge. Partners put high relevance to 'High dependency on state funds and its consequences' (12 points). Among strengths available funding sources were given high points. Putting together these two factors it follows that partners see that state funds have too much role in the development of clusters and if state/regional funding sources dry out then clusters may have a sustainability problem. Relatively high points were given to 'Inadequate mindset of companies and entrepreneurs' (12 points), 'Changing or incoherent policies, unrealised strategies' (11 points), 'Low awareness of stakeholders' (11 points), 'Lack of financial sources/capital at SME's/in the business sector' (10 points) and 'Limited/ineffective cooperation between firms or between firms and science/local governments (10 points). Among weaknesses comparatively low relevance was given to 'Modest quality level of programmes, implementation of programmes with deficiencies' (8 points), 'Problems of growth dynamic and economic crisis' (8 points). 'Insufficient state support' received only 7 points, which is in line that its opposite ('Available funding source') was ranked fairly high among strengths. This reflects that in the case of few countries involved in the ClusterCOOP project adequate state funding is an issue. 'Lack of supporting legal environment' was given small relevance (7 points) so partners do not consider the legal environment as an obstacle for the development of clusters. 'Unbalanced sectoral development of clusters due to policy' and 'Societal issues' were ranked at the bottom of the weaknesses list (both 5 points).

Concerning **opportunities** the highest ranking was given to 'Inter-regional cooperation, internationalisation and stronger cross-border links' (16 points), which indicates that partners see a strong potential in promoting cross-border development of clusters. 'Better/consistent implementation of policies/programmes linked to clusters' were given also a high ranking (15 points), which shows that current policies/programmes may be good in terms of objective but they need better actions and consequent implementation. 'Better knowledge transfer' was ranked at 14 points, which is in line with the experience that there is a strong potential in R&D and higher education background but the knowledge is not marketed efficiently. Partners see a relatively strong 'Potential to higher growth, competitiveness and innovation thanks to existing clusters' (13 points). 'Targeted policies' (12 points), 'Stronger focus on cluster policies fostered by EU' (11 points), 'Higher awareness of clusters and the potential in clusters' (11 points) and 'More intensive cooperation of stakeholders, partners of triple helix' (11 points) were given medium relevance. 'Attraction of

capital/FDI thanks to clusters' is a very interesting opportunity clusters could be used for but partners see a rather modest potential (9 points) in that. 'Supporting/favourable business environment' received only 7 points, which shows that such an environment is not really stimulating for clusters.

Concerning **threats**, the 'Economic/financial crisis' is seen as the biggest threat (14 points) to clusters in the countries and regions of partners. 'Sustainability of clusters' (13 points) is another major challenge that partners shall cope with in the future. 'Lack of targeted policies', 'Decrease of public funds', 'Unfavourable sectoral changes', 'Decline in cooperation among stakeholders', 'Divergence of clusters from their role as innovation drivers' are all seen as fairly substantial threats (9 points) together with 'Social changes and problems of labour market (8 points). Most partners do not think that 'Cluster as a fashion' is a true threat (6 points), neither do they that 'Confusing EU calls with unclear objectives' would be a real challenge (6 points) to cope with.

7. Conclusions

- Looking back the past 15-20 years there is a clear upswing of policies linked to clusters
- Currently at most partners there are adequate resources for the support and development of clusters
- Nearly all partners rely almost exclusively on the EU funds when talking about the development of clusters
- Changing policies/incoherent policies, not implemented strategies are a common weakness mentioned by partners
    - An issue that needs be handled at local level or can we make efforts with such projects as ClusterCOOP for long-term, consistent and implementable policies/strategies?
- There is a wide variety of tools and measures applied - however, there is a strong focus on non-refundable grants
- Varying cluster definitions are used in the programmes – although most definitions have a lot in common
    - Is there a need for a single cluster definition for the alignment of the policies or funding schemes?
- Partners perceive that there are already existing and well-performing clusters, which is a good base to build on BUT clusters are vulnerable since
    - there is a high dependency on public funds and
    - sustainability of clusters is seen as a major threat
- Tools and measures are available according to national/regional level policies and mostly campaign-like – a continuous provision of tools and measures is a challenge
- Partners see a clear opportunity in fostering internationalisation and cross-border links – we need to find efficient tools to assist this opportunity
- Partners will have a challenging job to make proposals on the alignment of funding schemes

Annex I. Joint SWOT table

No.	Strengths	Total points	No.	Weaknesses	Total points
I	Already existing and well-performing clusters	15	I	Difficulties in translating knowledge to marketable products	15
II	Strong R&D and higher education background	15	II	Problems of innovation and educational environment	13
III	Available funding sources	13	III	High dependency on state funds and its consequences	12
IV	National/regional level policies targeted/linked to clusters	12	IV	Inadequate mindset of companies and entrepreneurs	12
V	Tools/measures linked to the development of clusters	11	V	Changing or incoherent policies, unrealised strategies	11
VI	International links	10	VI	Low awareness of stakeholders	11
VII	Favourable business environment	10	VII	Lack of financial sources/capital at SMES/in the business sector	10
VIII	Strong/growing industries/sectors	10	VIII	Limited/ineffective cooperation between firms or between firms and science/local government	10
IX	Bottom-up clusters	9	IX	Modest quality level of programmes, Implementation of programmes with deficiencies	8
X	Local and regional actions	9	X	Problems of growth dynamic and economic crisis	8
XI	Strong/dedicated institutional background	8	XI	Insufficient state support	7
XII	Analytic methods, statistical methods	6	XII	Lack of supporting legal environment	7
			XIII	Unbalanced sectoral development of clusters due to policy	5
			XIV	Societal issues	5

No.	Opportunities	Total points	No.	Threats	Total points
I	Inter-regional cooperation, internationalisation and stronger cross-border links	16	I	Economic/financial crisis	14
II	Better/consistent implementation of policies/programmes linked to clusters	15	II	Sustainability of clusters	13
III	Better knowledge transfer	14	III	Lack of targeted policies	9
IV	Potential to higher growth, competitiveness and innovation thanks to existing clusters	13	IV	Decrease of public funds	9
V	Targeted policies	12	V	Unfavourable sectoral changes	9
VI	Stronger focus on cluster policies fostered by EU	11	VI	Decline in cooperation among stakeholders	9
VII	Higher awareness of clusters and the potential in clusters	11	VII	Divergence of clusters from their role as innovation drivers	9
VIII	More intensive cooperation of stakeholders, partners of triple helix	11	VIII	Social changes and problems of labour market	8
IX	Attraction of capital/FDI thanks to clusters	9	IX	Cluster as a fashion	6
X	Supporting/favourable business environment	7	X	Confusing EU calls with unclear objectives	6

Annex II. – Detailed SWOT tables

No.	Strengths	Total points
I	**Already existing and well-performing clusters**	**15**
1	Sustainable cluster projects focused on competitiveness strengthening and innovation	
2	More than 100 clusters, business co-operations in Hungary	
3	Real alive clusters	
4	Historical industrial cluster with some large globalized firms still represent an international reference point and support the entire supply chain	
5	Established and well performing clusters and networks, hands-on experiences	
6	Dynamic growth in cluster initiatives and clusters	
7	Existing and well-performing clusters	
II	**Strong R&D and higher education background**	**15**
7	Support focused on R&D&I and also R&D infrastructure	
8	A strong and sound innovation generation system, wide variety of intermediaries and brokers, with strong reliability, several science parks and industrial parks	
9	Private level of R&D investment higher than the national average	
10	Piedmont ranks between the first and second position in Italy with respect to many innovation indicators (OECD)	
11	The two Turin universities are in the top ten of the central government rank, with the Politecnico in the first position, with an increasing number of students, foreign links and strong connections with the industry sector	
12	Research efforts focused on few key sectors	
13	Strong focus and high investment in R&D and innovation	
14	Impact of regional cluster-based policy on increased innovativeness among local entities	
15	Improvement of framework conditions for innovation on a federal level	
III	**Available funding sources**	**13**
16	Availability and utilisation of structural funds for the development of clusters	
17	Utilising structural funds for the development of clusters	
18	Allotment of increasingly higher sums of public funding to support clusters	
19	Use of the possibilities for the financing of increased cluster policy as well as activities and the development of clusters themselves from public funds	

No.	Strengths – continued	Total points
IV	**National/regional level policies targeted/linked to clusters**	**12**
20	Continuity of cluster support programmes focused on R&D&I, support also for R&D&I infrastructure	
21	Complex policy approach for the development of clusters	
22	Governmental commitment to cluster development	
23	More than ten years of policy interventions in the field of cluster, science parks and technology platforms	
24	Integrated entrepreneurship and competitiveness policy	
25	Cluster policy links various actors	
26	Cluster policy creates new value	
27	Adaption of thematic focus areas to market processes	
28	Focus on medium-sized companies	
V	**Tools/measures linked to the development of clusters**	**11**
29	Strengthening and creation of linkages among universities, business sector and R&D institutions	
30	Operation of a unique cluster development system (Clear differentiation of clusters according to their development level)	
31	Successful adoption of international best-practices	
32	Strategic pro-clusters materials (ministerial materials)	
33	Continuous promotion of cooperation, different measures, selection criteria in favor of groups	
34	Actions promoting clusters	
VI	**International links**	**10**
35	Good level of internationalisation of the economic system	
36	High level of international cooperation and participation in international networks	
VII	**Favourable business environment**	**10**
37	Willingness to cooperate	
38	Human resources	
39	Motivated managers	
40	Well-developed start-up incubators	
41	In 2008 Piedmont had a positive trade balance, for nearly 10 billion Euros	
42	Strong investment in joint development infrastructure	

No.	Strengths – continued	Total points
VIII	**Strong/growing industries/sectors**	**10**
43	Sector (current) growth	
44	OECD indicator on high-tech manufacturing is nearly the same of the Baden-Wuerttemberg (Germany)	
45	Compared to the other regions of the country, Piedmont has a good number of foreign multinational companies: there are 600 foreign companies with operative base in Piedmont, with 100nds employees and 15 billion Euros annual turnover	
46	Manufacturing declining as elsewhere but from a very high start point (and unusually stable high-tech output and employment)	
47	Industrial specialization in many strong clusters such as automotive, aerospace, textile, machinery and components, etc. and some emerging industries-related clusters such as biotechnology, environment, ICT, nanotech, new materials	
48	In many industrial sectors (ICT, aerospace, automotive, biotech) there is a good technological level: export of technology (not incorporated in any good, patents, labels, know how, etc.) is worth each year at least half a billion Euros. The export from Piedmont is worth 15% of the total national export	
IX	**Bottom-up clusters**	**9**
50	Mostly bottom-up clusters in Hungary	
51	Spontaneous (bottom-up) cluster creation and growth	
52	Building of cluster policy based on a bottom-up approach	
53	Appearance of local entities which are ready to implement and continue cluster initiatives	
X	**Local and regional actions**	**9**
54	Self-governing regions activity	
55	Since 2001 the constitutional national law gives to Italian Regions competences and resources for innovation policy	
56	Support for cluster initiatives and clusters from local government	
57	Existing tool for regional cluster support	
58	Region-specific and technology-specific approaches	
59	Upgrading of regional cluster initiatives	
XI	**Strong/dedicated institutional background**	**8**
60	National level coordination and dedicated implementation agency for cluster development	
61	National level coordination and dedicated organisation for cluster development	
62	Implementation agencies	
63	Inter-departmental coordination of innovation, research and technology issues on a federal level	
XII	**Analytic methods, statistical methods**	**6**
64	Identification of potential clusters based on regional mapping	
65	Cooperation with the Main Statistical Office (GUS) on analytical work aimed at the development of methodologies for the identification of cluster structures and potential cluster links which provide a way to measure the impact of programs supporting clusters and the design of new instruments of public policy in this field	
66	Identification of new and potential clusters at the regional level	
67	Analysis of the potential of cluster initiatives	
68	Identification of the most important clusters from the perspective of regional growth	

No.	Weaknesses	Total points
I	**Difficulties in translating knowledge to marketable products**	**15**
1	Difficulty of firms to translate knowledge into products and services for the market	
2	Difficulty of firms to translate knowledge into products and services for the market	
3	Weak links and different priorities in the realms of science and business	
II	**Problems of innovation and educational environment**	**13**
4	High-technology entrepreneurship, patenting, R&D levels even if high compared with the national average, are not always competitive at international level	
5	Companies and research institutions investment in patent is increasing in the last years, but it is still not well widespread among all the entrepreneurs (they are often afraid of exposing their discovers to the competitors) and other players	
6	Patent degree relatively lower with respect to European areas with similar standards of innovation output	
7	Rare actions taken to adapt changes in the educational system to the needs of clusters	
III	**High dependency on state funds and its consequences**	**12**
8	Dependence on cluster supporting programmes (state aid)	
9	Rent-seekers in the system	
10	Excessive distortion effect of available supports	
11	High dependency on structural funds, inflexible conditions and implementation structures	
12	Domination of the public factor in the financing of cluster initiatives	
13	Lack of knowledge on alternative sources of funding for cluster activity	
IV	**Inadequate mindset of companies and entrepreneurs**	**12**
14	Few firms with a strong vocation for growth (even among the more sound ones)	
15	It is difficult for some firms to have a long term – structural approach to innovation and internationalization	
16	There is often a lack of entrepreneurial mindset even among the best graduates or post-graduate students	
17	Low participation to lifelong learning of Piedmont work force	
18	Insufficient knowledge of cluster policy among managers of existing businesses	
19	Different understandings and expectations with regard to clustering (great interest in the idea itself, but varied understandings of the concept itself or how a cluster works)	

No.	Weaknesses – continued	Total points
V	**Changing or incoherent policies, unrealised strategies**	**11**
20	Relatively frequent changes in policies and strategies makes them difficult to rely on for economic actors	
21	Lack of implementation of the strategic materials	
22	Lack of stability and long term orientation in policy programs (changing priorities and programs)	
23	Lack of comprehensive policy action to maximize effects (non-financial activities, policy-mix)	
24	Lack of a comprehensive strategy supporting the development of clusters	
25	Cluster support strategy is not well suited to the current stage of cluster development	
VI	**Low awareness of stakeholders**	**11**
26	Lower awareness among entrepreneurs and other stakeholder about cluster benefits	
27	Low awareness of the entrepreneurs about clusters benefits	
28	Significance of cluster policy is not well recognized by local government	
29	Limited awareness of the role of clusters among regional authorities	
VII	**Lack of financial sources/capital at SMES/in the business sector**	**10**
30	Lack of capital at SMEs to launch innovation projects	
31	Limited clusters/firms resources	
VIII	**Limited/ineffective cooperation between firms or between firms and science/local government**	**10**
32	Still limited cooperation between stakeholders	
33	Unwillingness of firms to cooperate with each other	
34	Low tendency for Polish firms to cooperate with each other or for the sphere of science to work with the business environment	
35	Ineffective cooperation and functioning of the 'triple helix' (business, higher education and local government)	
IX	**Modest quality level of programmes, Implementation of programmes with deficiencies**	**8**
36	Low measurement of impact of cluster support policy	
37	Lack of mutual coordination between ministries and state institutions in implementation of their measurements and actions	
38	Uncoordinated implementation and structures, too many intermediaries, low quality of services	
39	Lack of focus and continuous support for the best performing groups (specialization)	
40	Lack of cohesion, of a unified approach and coordination between specific programs and entities responsible for the implementation of cluster policy	
41	Use of inflexible programs and tools to support clusters and cluster initiatives	
42	Reduced ability to adapt regional cluster programmes to market needs	
43	Partly focus on lagging regions	

No.	Weaknesses – continued	Total points
X	**Problems of growth dynamic and economic crisis**	**8**
44	In the last decade Piedmont grew less than the most dynamic Italian regions	
45	Exports are still too much oriented to traditional and less dynamic markets	
XI	**Insufficient state support**	**7**
46	Insufficient state support of the clusters	
47	Lack of sufficient financial support for cluster development from public authorities	
XII	**Lack of supporting legal environment**	**7**
48	Complicated state aid regulations for groupings of enterprises, complex administration of EU funds	
49	Lack of a unified definition of a cluster	
50	Lack of appropriate, comprehensive legal regulation on the creation of clusters and their functioning	
51	Limited resources to support existing, but not yet excellent clusters	
XIII	**Unbalanced sectoral development of clusters due to policy**	**5**
52	Slower development of clusters in services and other not supported sectors	
XIV	**Societal issues**	**5**
53	Population ageing	

No.	Opportunities	Total points
I	**Inter-regional cooperation, internationalisation and stronger cross-border links**	**16**
1	Support of international cluster projects	
2	Fostering internationalization at the policy and business level	
3	Cluster internationalization	
4	Many Piedmont clusters have already recorded excellent results in internationalization (mechatronics, food and agriculture, textiles, biotech). These models can be adopted by other clusters	
5	Clusters are instruments which facilitate and enhance inter-regional cooperation	
6	Increasing support of the internationalisation of clusters	
II	**Better/consistent implementation of policies/programmes linked to clusters**	**15**
7	Continuous support of excellent cluster projects	
8	Cooperation with other European countries in harmonisation of cluster supporting policies	
9	Enhance policy implementation	
10	Synchronization of EU and member states	
11	Commitment to the implementation of the new innovation strategy, ensuring long term stability in policy orientation	
12	Implementation of the "policy mix" models, comprehensive financial and non-financial activities	
13	Long history of public investment in university incubators, which (especially the Politecnico university incubator) shown a great capacity to generate start-ups	
14	Support to the start-ups that received support from business incubators (so to reach EUR one million turnover per year)	
15	Extending recent years' best practice policies to multi-regional programs within Italy or across the borders	
16	Evaluation and monitoring of activities undertaken	
17	Proved instruments for the successful promotion of cluster development	
III	**Better knowledge transfer**	**14**
18	Improvement in knowledge transfer	
19	Firms' demand for R&D and cooperation (with other firms and research institutions) is increasing	
20	Increasing interest in knowledge transfer from R&D actors	
21	Long history of public investment and support to the technology transfer tools hosted in Piedmont such as technology and scientific parks and innovation clusters	
22	Increased influence of RSI on cluster activities	

No.	Opportunities – continued	Total points
IV	**Potential to higher growth, competitiveness and innovation thanks to existing clusters**	**13**
23	Good cluster image may attract newcomers to the regions	
24	25 accredited clusters with strong innovation potential and joint innovation projects under implementation	
25	From the more than 100 clusters and business co-operations some may emerge in the middle-, long-run as strong clusters	
26	Cluster growth due to economy growth	
27	Innovation clusters are key actors for the development of smart specialisation regional strategies, since they provide a favourable environment to foster competitiveness and drive innovation	
28	Impact of clusters on the ongoing enhancement of the level of competitiveness and innovativeness for local, regional and national economies	
29	High number of excellent cluster initiatives	
V	**Targeted policies**	**12**
30	Continuing to stimulate the development of the new economic sectors or production in life science, ICT, new-materials, environmental technologies, etc.	
31	Specialization and investment in the defined priority technology and industrial fields using the experiences of clusters and networks developed	
32	Clusters as a measure to support SMEs	
VI	**Stronger focus on cluster policies fostered by EU**	**11**
33	Use of European cluster supporting programmes	
34	Stronger focus on cluster at new EU policies and in the next budgetary period	
35	Implementation of the Europe 2020	
VII	**Higher awareness of clusters and the potential in clusters**	**11**
36	Clustering has become a wide-spread phenomenon in the Hungarian economy	
37	Cluster PR (for public and politicians)	
38	Propagation of knowledge on the significance of clusters in the form of several publications by entities as well as PARP	
39	Increased knowledge on clustering throughout society	
VIII	**More intensive cooperation of stakeholders, partners of triple helix**	**11**
40	Collective action - bridging technology gaps in more traditional sectors, introduction of higher-grade technologies by SMEs in joint interest	
41	Increasing cross-cluster co-operations	
42	Cooperation with final producers	
43	Willingness and openness of the scientific community to cooperate	
44	Improved communication of public authorities with clusters	

No.	Opportunities – continued	Total points
IX	**Attraction of capital/FDI thanks to clusters**	9
45	"Incorporate" FDI to current clusters	
46	Some historical know-how and international level assets in manufacturing sector can be worth foreign direct investment from Arab or Far East countries	
47	The growing of venture capital can bring to Piedmont innovation system the investors (and management organizations) needed to support and accelerate business growth	
X	**Supporting/favourable business environment**	7
48	Climate and technological changes	
49	Piedmont Region (as well as the regions around the Piedmont area) has still a high level of income and one of the highest accumulated wealth in Europe	
50	Piedmont has a good position in some industrial sectors where there is the possibility of converging technologies (automotive, aerospace, ICT, nanotech, new-materials, environmental technologies)	

No.	Threats	Total points
I	**Economic/financial crisis**	**14**
1	Economic crisis - lower incentive to invest in longer term cooperation and to engage with competitors	
2	Deepening economic crisis	
3	Current crises	
4	Push on cost	
5	Economic crises and change of priorities	
6	Contraction of the GDP growth rate can limit public R&D spending	
7	Limited ability of companies to contribute to projects due to financial crisis	
II	**Sustainability of clusters**	**13**
8	Sustainability of clusters without any financial support	
9	Sustainability of the clusters because of dependence on state support	
10	A lot of young and weak cluster-like organisations	
11	Lack of willingness to keep clusters going when further public funding is not available	
12	European Regional Development Fund important source for cluster support on a regional level	
III	**Lack of targeted policies**	**9**
13	Cluster support needs to be concentrated on areas of comparative advantage	
14	Government priorities movement /switch	
15	Status fixation (no future changes)	
16	Dispersion of R&D funds and the consequent failure in reaching the critical mass to radically improve research and innovation level in the main important industrial clusters	
17	Clusters support needs to be concentrated on areas of comparative advantage	
18	Approach to "strengthen the strong" may increase regional disparities	
19	Lack of targeted innovation strategies with concrete actions on a regional level	
IV	**Decrease of public funds**	**9**
20	Public finance limitations/cuts	
21	Decrease of public funds	
V	**Unfavourable sectoral changes**	**9**
22	Sectors declining (foreseen)	
23	Increasing de-industrialization and firms de localization toward low or medium cost countries	
24	Some of the most important industrial sectors in Piedmont (automotive, textile) are operating in mature European markets and are pressed to delocalize towards low and medium cost countries	
25	Increasing divergence in GDP growth rate with respect to the most advanced and wealthy European regions	
VI	**Decline in cooperation among stakeholders**	**9**
26	Slowdown in cooperation and integration process among the firms and between them and the research system. Piedmont firms have to establish a stronger connection among them as well as with research infrastructures	
27	Unwillingness of entities towards mutual cooperation	

No.	Threats – continued	Total points
VII	**Divergence of clusters from their role as innovation drivers**	**9**
28	Clusters becoming common interest associations, rather than innovation drivers	
VIII	**Social changes and problems of labour market**	**8**
29	Social changes	
30	Growth of unemployment rate	
31	Weak policies against population ageing (without any relevant and sustainable immigration policies)	
32	Decreasing of expenditure in human capital, due to the shortfall in budget resources	
33	Low labour-productivity growth and wages	
34	Lack of professional skills	
IX	**Cluster as a fashion**	**6**
35	Clustering as a fashion	
36	Clustering as a fashion	
37	Perceiving clusters as a solution to all economic problems	
38	'Passing fad'	
39	Participation of entities with improper intentions within cluster initiatives	
X	**Confusing EU calls with unclear objectives**	**6**
40	Too many cluster support measures in EU - dependency of clusters on funding and European transnational projects with unclear goals instead of focusing on competitiveness	