SWOT ANALYSIS AND MAP OF CLUSTERS STRATEGIC PRIORITIES IN THE ALPINE AREA

ALPS4EU, «OVERCOMING THE FRAGMENTATION OF CLUSTERS IN THE ALPINE SPACE»

Identification of potential transnational cooperation between clusters in the Alpine region.
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INTRODUCTION

Alps4EU, a project funded by the European Territorial Cooperation 2007-2013 programme «Alpine Space», aims to overcome clusters initiatives fragmentation and favour the emergence of meta-clusters, applying a macro-regional vision and driving Alpine area clusters to be more competitive in the European scenario for the benefit of Alpine Space’s economy. 13 project partners from six countries (France, Switzerland, Italy, Germany, Slovenia and Austria) are involved. For more information, visit the project website www.alps4eu.eu.

One specific work package within Alps4EU-project contains the elaboration of a SWOT-analysis of the cooperation potential between clusters in the participating regions in four key sectors (Energy and Green Tech, Mechatronics and Engineering, Chemistry and New Materials, ICT). The objective is to identify the potential for establishing meta-clusters in the Alpine area.

A meta-Cluster can be defined as a trans-regional network of cluster initiatives, which focuses on the same or complementary specific technological field or sector. A meta-cluster consists of at least three cluster initiatives in three different regions.

As part of these activities, representatives of 46 cluster initiatives in six countries were interviewed by the project partners in the summer of 2012. These interviews focused on the organisation, activities and competences of the cluster initiatives as well as the strategic potential for the creation of meta-clusters from the point of view of cluster managers. The questionnaire is attached to this report as Appendix A. The questionnaires for cluster interviews were filled out and passed on to Standortagentur Tirol. The quantitative and qualitative analysis was carried out by Pöchhacker Innovation Consulting (www.p-ic.at).

The swot-analysis and interpretation of the results were executed on this basis. Furthermore, we outlined the potential for meta-clusters in the Alpine region referring to the competences of the clusters and organizational potential of the clusters and organizational potential of the cluster management.
EXECUTIVE SUMMARY

The analysis of the presented results are based on a broad investigation of clusters in the alpine space region with 46 cluster managers from six countries interviewed, representing 8,500 cluster members, of which 7,100 companies. The questionnaire was very detailed and most of the clusters were analysed very deeply regarding their structure, strategy, strengths and challenges.

The structure of the analysed clusters is very heterogeneous, regarding the age and maturity of the cluster initiatives, the amount of cluster members or their resources. Concerning cluster members the investigated clusters contain competitive companies – leading companies as well as SMEs – and high-level research institutions. In the outlook, a clear majority of the cluster managers expects regional and national funding to decrease – while throughout all countries and regions regarded in this survey, a fundamental shift in the financing of the clusters from the regional and national level towards the European level is expected.

The awareness on the meaning, benefits and challenges of international cooperation among the cluster managers is very pronounced. Most of the clusters have experience in international cluster cooperation, especially in the participation in EU programs. Furthermore, a clear majority of cluster managers interviewed are actively involved in EU-platforms, programs and projects at present. Still, there is a gap between the strategic relevance of international cooperation in the future and the extent of experience in international cooperation in past and present.

The analysis shows clear potential for increased international cooperation of SME’s through the concept of meta-clusters by following a 3 step approach:

- The fragmentation and heterogeneity among the clusters should be overcome by common strategies for clusters. For that, initial workshops of cluster managers of the same thematic focus in the defined four key sectors (Energy and Green Tech, Mechatronics and Engineering, Chemistry and New Materials, ICT) would be useful (networking, concrete interests in collaboration, expectations, capacities etc.). On this basis, common strategies for clusters with the same focus could be defined.

- Collaborative R&D and innovation projects can be initiated as the clusters contain companies and research institutions at high level of excellence. There is undoubtedly a high potential for a strong common participation in the European Research Area (ERA). The key aspect is the clusters’ ability to activate and integrate a broad range of their members, esp. companies, for collaborative projects.

- A meta-cluster as a network of cluster managers could be a strong and sustainable basis for fostering transregional and transnational cooperation and a remarkable increase in the European and international visibility. The opportunities and benefits of cooperation can be promulgated to companies, researchers, public bodies and the public.
RESULTS OF THE SURVEY OF CLUSTER MANAGERS

In the first part of this report, the results of the survey of cluster managers are summarized. The presentation of the results is divided in four parts referring to the structure of the questionnaire:

* Structure and organization
* Strategy
* Core competences and strengths of the cluster
* International cooperation

46 cluster managers from 6 different countries participated in the survey. As illustrated in figure 1, 16 of them are located in Italy, 10 in France and 9 in Switzerland. The other cluster managers come from Germany, Austria and Slovenia.

Figure 1: Number of interviewed cluster managers by country

n = 46

STRATEGY AND ORGANIZATION

The first part of the questionnaire included aspects of structure and organization of the cluster initiative, esp. cluster members, cluster activities and the budget/financing of the cluster initiative.

Start of the cluster initiative
As shown in figure 2, a majority of the cluster initiatives was started in 2005 or later. Only 8 cluster initiatives were started before 2005. 16 cluster initiatives – or one third of the participating clusters – started less than three years ago.

n = 45

Figure 2: Start of the cluster initiative by year
Legal form

Regarding the legal form of the cluster initiative, most cluster initiatives are organized as an association. Some declared to be a temporary association of companies for a definite purpose.

In some cases other legal forms such as a department or unit within a public organisation were chosen, mainly in fields of regional marketing agencies, or as a private company. Two cluster initiatives have no legal status yet.

Organizational holder

Interestingly, a significant majority of cluster initiatives is carried out (partly) by other organizational holders. Thereunder, usually a cluster organisation or cluster manager holds a mandate of the association or organisation under which the cluster is constituted, e.g. a science and technology park. Occasionally, the managing organisation is the consortium itself. Beyond that members itself (companies, foundations, universities or private organisations) are the organizational holder of the cluster initiatives. In general Clusters often focus on the Triple Helix Model. This model focuses on university-industry-government interactions and has been recognised as a key to innovation in knowledge-based societies.

Thematic focus

The regional government acts as organizational holder of 10 cluster initiatives, in 4 cases an innovation support agency and in 3 the national government resp. a regional development agency fulfill this role. One cluster initiative is organized by a research institution.

*multiple answers possible; n = 46

Figure 3: Organizational holder of the cluster initiative*

*multiple answers possible; n = 46

Figure 4: Thematic focus of the cluster initiative*
The Alps4EU project concentrates on clusters in four key sectors: Energy and Green Tech, Mechatronics and Engineering, Chemistry and New Materials and ICT. As shown above, 21 cluster initiatives are engaged in fields of Energy and green technology, 11 in ICT and 10 in Mechatronics and Engineering resp. Chemistry and New Materials. Multiple answers were possible, therefore 8 cluster managers said their cluster initiative is relevant in two categories. Within these categories, the main thematic topics are:

- Energy and green technology: Green energy, sustainable building, energy efficiency, renewable energie, mobility
- Mechatronics and Engineering: metallurgy, micro-engineering, automation, precision technology
- Chemistry and New Materials: plastics, textile, automotive components, nanotechnology
- ICT: IT-security, microtechnologies, networks/cloud computing, software development

The two cluster initiatives in the category «others» are engaged in health care and agrifood.

**Cluster members**

In total, the 46 cluster initiatives contain 8,553 members, resulting in an average of 186 cluster members. Once more, the heterogeneity of the clusters is obvious: 4 clusters declared to have more than 500 cluster members (in one case 995), while 4 clusters have less than 50 partners involved. Moreover, 3 of the 4 clusters with more than 500 members have no membership fees required (the sole exception being the ICT Cluster in Germany BW. The following figure shows the average composition of the cluster members by three categories: Enterprises, research and educational institutions and others such as intermediaries and public bodies. Differences to the numbers mentioned above arise from partly inaccurate and contradictory information in the questionnaires.

Among the category «enterprises», three out of four cluster members are small and medium enterprises (SMEs)

1 According to the EU-commission, SMEs are characterized by three criteria: Less than 250 employees, turnover less than or equal € 50m or balance sheet total less than or equal € 43m. These ceilings apply to the figures for individual firms only. A firm which is part of larger grouping may need to include employee/turnover/balance sheet data from that grouping too (http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm)
**Annual budget**

The annual budget varies enormously: 14 cluster initiatives have an annual budget less than €250.000, while 12 cluster initiatives have more than €2,000.000 available per year.

![Annual budget chart](image)

**Sources of financing**

This budget is financed by two main sources: Funding by regional government and membership fees (Figure 7 shows that 39 out of 46 clusters are using membership fees for financing). Funding by national government, income from services and activities and funding by European programmes are also a relevant source of finance for the cluster initiatives. Private funding and other sources (such as funding by local governments, support by Chambers of Commerce or research institutions) play a minor role.

The following figure shows the average financial composition of the 46 cluster initiatives: Almost a quarter of the annual budget derives from funding by regional government resp. by national government. Therefore, national funds for cluster initiatives are in general less by number, but more in total funding. The further sources of financing form almost half of the annual budget at approximately the same share.
Time periods of funds receipt
As shown above, public funds are a crucial source of financing for cluster activities. 25 cluster initiatives receive annual funds, two cluster initiatives receive the financial support at the beginning and 9 at the end of the funding period. These financial periods depend on the legal structure and the organizational holder of the cluster initiative. Furthermore, a project-oriented funding approach is determined by the project duration and the administrative funding procedures.

Cluster management
Usually, a cluster manager or management team is responsible for the planning and implementation of the cluster activities – only 3 cluster initiatives have no fixed staff. On the other side, some cluster initiatives have a team up to 36 employees. On average, 4 full-time equivalents work in the cluster management.

Main activities
The spectrum of cluster activities is quite wide and includes networking of cluster members, initiation of collaborative projects with companies and information and communication activities in the majority of the 46 clusters interviewed. Other cluster activities (collaborative projects with research institutions, activities to foster the internationalisation of SMEs, trainings and seminars etc.) should not be neglected.

In the category «others», the comments included e.g. technology and market transfer of R&D projects, SME services and support, serving as regional contact point for international collaboration and inquiries, location promotion as well as acquisition of employees.
**Evaluation of the cluster performance**

In the majority of cluster initiatives interviewed – 85% – the cluster performance is being evaluated regularly, only 7 cluster initiatives have not been evaluated so far. The form of evaluation of the cluster initiatives is quantitative and qualitative in equal shares – in many cases both methods of evaluation are applied.

The periods of external evaluations differ from one to five years, mostly in coherence with the financing periods. Evaluations are commissioned by regions and states as well, e.g. a federal ministry. As the comments show, self-evaluation is often applied or integrated as a permanent management tool (BSC-models, annual member satisfaction survey, evaluation of single projects or events, etc.).

**STRATEGY**

The second main focus of the survey was laid on the strategic orientation of the cluster initiatives, concerning the present and future strategic targets, documents and considerations.

**Targets and strategies**

*multiple answers possible; n = 45

Figure 10: Targets and strategies pursued by the cluster initiative*
The targets and strategies which are pursued by the cluster initiative, include first of all the creation of cooperative networks among the cluster companies. Likewise, strengthening the competitiveness of cluster companies and supporting research and innovation in cluster companies are central ambitions of the cluster initiatives. Further targets include the valorisation of research output, trainings, collaborative projects of companies, internationalisation of the cluster members and so on.

**Strategic documents**

91 % of the cluster initiatives who participated in the survey dispose of strategic documents on the cluster. Only 4 clusters – 9 % – have no strategic documents on the cluster at all.

Mostly annual cluster strategies or programmes are in use, multiannual cluster strategies are as well relevant for approximately half of the cluster initiatives. In many cases the strategic documents on the cluster are part of a regional innovation strategy.

**Definition of the cluster strategy**

In 3 out of 4 clusters, the cluster strategy for the next years will be defined by an internal cluster process. Furthermore, in 20 cases the future cluster strategy will be created as part of a regional innovation strategy or defined by the responsible organisation or owner.

As the comments show, the cluster strategy is in many cases linked to the financing of the cluster activities. Therefore, the future cluster strategy will be defined in a collaborative process between the cluster and the financing institution, e.g. relating to the EU-structural funds period 2014-2020.

Beyond, some clusters actively involve cluster members or members of the governing board in the creation of the future strategy. So the strategic process includes a bottom-up- and a top-down approach at the same time.
**Business models | financing strategies**

In addition, the cluster managers were asked what kind of business models or financing strategies would be mainly considered in future. The results clearly show that public funding by regional and national authorities is expected to decrease in future.

Participation in EU-funded projects, earnings by services and activities and membership fees are in general expected to play a more central role in the next years.

Within the category «others» the following aspects were remarked: Advanced training at international level, provision of human resources, match-making with investors, business intelligence, market analysis, company representation and internationalisation.

**Non-monetary cluster support**

Support for cluster activities consists not only in financial means, but also in non-monetary funding. Thereunder, support in the context of networking events is mainly regarded as useful by the cluster managers. Other useful supporting actions are collaboration with universities, R&D transfer services, databases, communication platforms, enterprise visibility and so on. Not very useful in the view of cluster managers are provision of infrastructure and low loan rates.

*multiple answers possible; n = 46

*multiple answers possible; n = 45

*Figure 13: Business models or financing strategies mainly considered in future to decrease or increase*

*Figure 14: Non-monetary cluster support regarded as useful*
Most required support in the future

<table>
<thead>
<tr>
<th>Support Type</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field specific support e.g. in internationalization</td>
<td>15</td>
</tr>
<tr>
<td>Non-monetary support e.g. coaching</td>
<td>12</td>
</tr>
<tr>
<td>Financial support</td>
<td>25</td>
</tr>
<tr>
<td>Others</td>
<td>10</td>
</tr>
</tbody>
</table>

*multiple answers possible; n = 45

Figure 15: Most required support in the future*

It is very clear that the question of financing will play a crucial role in the future. 37 out of 45 cluster managers stated that the financial support will be an essential requirement in the next years. Approximately one third – 16 cluster managers – is interested in field specific support, e.g. in terms of internationalisation. Non-monetary support will not be required by most of the clusters.

Two further comments were given at this question: One cluster manager remarked to need contribution from the policy level and the companies in the way of marketing. Another one said to have no need for support.

Ideal duration of a cluster program or initiative

The ideal period of a cluster program or initiative should be less than 5 years (15 answers) or in between 5 and 10 years (12 answers). 6 cluster managers declared a longer duration as ideal in their opinion.

Overall, several cluster managers mentioned the difficulties in defining an «ideal» duration of a cluster program, as the market or the support of cluster members would indicate the relevance and the value added through the network collaboration.

CORE COMPETENCES AND STRENGTHS OF THE CLUSTER

Third, the cluster managers were asked to specify the core competences and strengths of the cluster. In detail, the strengths, weaknesses and competitive advantages of the cluster companies were identified as well as the core competences and strengths of the research institutions in the cluster.

Strengths: Core competences of the companies in the cluster

The cluster managers interviewed were asked to specify the core competences and strengths of the companies in the cluster in fields of international leading companies, strong SME basis, market leaders in niches, innovation leaders, high-tech business creation/entrepreneurship and others.
**International leading companies**
Most clusters have cluster members which are internationally active and leading companies, but all together they form a minority among the cluster members. Only two clusters do not contain an international leading company. According to the thematic focus of the cluster, the international leading companies mentioned are active in different branches of industry.

**Strong SME basis**
The clear majority of cluster members are small and medium enterprises (SME) – approximately 3 out of 4 cluster companies are SMEs. This underlines one characteristic moment of cluster initiatives, namely their ability to stimulate SMEs, which is sometimes accompanied by the political mandate to address SMEs in particular. Competitive advantages of SMEs, that have been mentioned by the cluster managers, are their flexibility, their knowledge in specific aspects, their specialisation and their innovativeness, qualified employees, closeness to the customer etc. In the 46 clusters involved, these advantages are very clear and obvious. Although, a strong SME basis is not always a benefit, as some cluster managers said – especially when they do not reflect the structure of the companies in the region and/or industry.

**Market leaders in niches**
25 out of 46 cluster managers (= 55 %) stated that there are market leaders in niches in their cluster. Most of them could name concrete companies in the different industries. Interestingly, several cluster managers mentioned supply chains and industrial networks in this context. In other words, market leaders in niches often cooperate with large manufacturers.

**Innovation leaders**
Almost all clusters do have innovation leaders in their network. This includes large companies as well as SMEs. The broad range of answers to this question – some cluster managers could not specify the field or characteristics of innovation leaders in their clusters while others could easily name several innovation leaders – was quite surprising as cluster initiatives generally stress the aspect of innovation in cluster activities.

**High-tech business creation/entrepreneurship**
Out of 46 cluster managers interviewed, 20 answered the question of core competences and strengths of the cluster in fields of high-tech business creation/entrepreneurship. 14 named concrete examples of start-ups in the cluster or describe specific activities by the cluster management to stimulate high-tech start-ups.

**Others**
Other core competences and strengths of the companies in the cluster were mentioned by 7 cluster managers. The responses included a strong and interdisciplinary university base, diversity and complementarities of different competences, covering the value chain, know-how, financial services, e-government and others.
**Weaknesses and threats: Specific weaknesses and threats of the companies of the cluster**

In contrast and addition, the cluster managers were asked to describe the specific weaknesses and threats of the companies in the cluster in an open question. The answers were grouped afterwards. In decreasing order of occurrence, the following aspects were mentioned:

- **Structure of the cluster members**
  - Structure of the cluster members (cluster companies are too small to compete internationally or to lead projects, strong regional orientation etc.)
  - Critical mass of companies
  - Lack of appropriate research infrastructure and universities

- **Internal company capacities**
  - Lack of financial resources for R&D
  - Too strong national orientation I missing export orientation
  - Low attention to and difficulties in protecting IPR
  - Difficulties in transferring the results into products
  - Hard to find the time to innovate in SMEs

- **“Soft factors” (communication, mindset, cooperative orientation)**
  - Lack of interest to cooperate in the cluster companies I lack of communication within the cluster
  - Cultural aspects I CSR
  - Weak dynamic environment
  - Lack of open mindset

- **Economic and legal framework conditions**
  - Uncertain global economic outlook I strong dependencies on market development
  - Difficulties in terms of internationalisation I hard to find new markets
  - Lack of diversification
  - High international competition in the market
  - Market fragmentation
  - Small domestic market I weak internal market
  - No pressure to internationalize
  - High volatility of production systems
  - Lack of international drivers
  - Obstructive regulation framework I uncertain perspectives of legislation

- **Financial aspects**
  - Fluctuation of national currencies (esp. CHF)
  - Lack of risk capital | venture capital
  - Lack of financial support | funding programmes
  - Difficulties in availing national funds

**Opportunity: Specific competitive advantage of the companies of the cluster**

45 cluster managers stated specific competitive advantages of the cluster companies in the following aspects:

- Numerous small companies in the cluster € engagement of leading companies in joint programmes
- Technology transfer within the cluster as well as with external partners
- High R&D-orientation of the cluster companies
- Unleashing the synergies among different actors and competences in the cluster
- Flexibility and diversification high concentration and excellence
- Technology competences & innovation capacities
- «Innovation through cooperation»
- Know-how and technological experience
- Heterogeneous competences and skills
- Overcoming small domestic markets through transnational cooperation
- Raise of awareness for innovation
- Technology-transfer from universities to regional companies

In summary, business opportunities are seen mostly in mobilizing SMEs, fostering innovation and cooperation and entering new markets.

**Core competences of the research institutions in the cluster**

Furthermore, the core competences and strengths of the research institutions in the cluster have been considered. The results show that they are seen especially in internationally excellent research institutions, strong research structures, internationally renowned researchers, strong engagement of research institutions in the European Research Area and strong cooperative research.

* **Internationally excellent research institutions**
Most of the cluster managers interviewed mentioned internationally excellent research institutions as cluster members. The answers consisted mostly of precise descriptions of the research institutions and their thematic focuses, e.g. in fields of energy efficiency/green building, medical technologies/life science, food science/agriculture, hydrogen technologies, IT, engineering/automation and nanotechnologies.

* **Strong research structures**
Usually cluster initiatives have no research structures on their own. The added value consists in providing access to research infrastructure in the cluster region, mainly for SMEs. In fields of cooperative research, mostly public research infrastructure is opened for public-private-partnerships (e.g. laboratories at universities). The clusters include in general the large and prestigious universities and other research institutions in the region – therefore the research structures can be used for cluster projects as well.

* **Internationally renowned researchers**
Strong transnational networks with highly renowned researchers can provide access to international scientific communities in the relevant fields of science and technology. 20 out of 46 cluster managers are prepared to name internationally renowned researchers either by name or by institution. This reflects the broad range of know-how and thematic focuses in the 46 clusters involved.

* **Strong engagement of research institutions in the European Research Area**
Over all, the engagement of research institutions in the European Research Area (ERA) shows further potential for development. 19 cluster managers confirmed that research institutions in the cluster are engaged in the ERA – sometimes stating the research institutions by name or even the field of research (e.g. food, green building, IT, microsystems, nanotechnology).
**Strong cooperative research**

Concerning cooperative research, one can hold that cooperative research plays a crucial role in the majority of the clusters in the Alpine region, but could be further increased. Fostering cooperation between companies (esp. SMEs) and research institutions is a main target and ambition of the cluster initiatives. Besides several examples of successful cooperation projects in terms of R&D, some cluster managers stated that there is still more potential.

A crucial aspect is seen in available funding schemes: Financial support for cooperative research by public bodies is a strong enabler for cluster projects. Depending on the national and regional funding scheme, cooperative research projects are more or less easy to realize.

**Specific advantage of the research institution in the cluster**

First of all, the close relation and cooperation between universities and other research institutions and cluster companies was mentioned several times as a major advantage of the cluster. Beyond this, highly specialized research institutions become more and more a location advantage. Almost all cluster managers specified the advantage of the research institutions in the cluster.

Among the broad spectrum of answers, most of the cluster managers emphasized the role of technology-focused and cooperative research institutions in the region. Competitive advantages for the whole region arise by the combination of excellent R&D providers and their structural linkage with other industrial members of the cluster.

In sum, technological know-how in universities is excellent and up to date, in a few cases thematic focuses with a strong tradition and expertise in the region could be named (e.g. energy in Lombardia or research in the automotive sector in Baden-Württemberg). This reflects the meaning of regional tradition and specialisation, which covers the scientific and the entrepreneurial sphere as well.

If this is not the case, the experience and expertise of research institutions can largely repeal the lack of experience and knowledge in the companies of the cluster. Esp. SMEs gain profit from cooperation and networking with researchers from the same field – cluster activities can make an important contribution.

Besides the thematic expertise of researchers, the national and international reputation of universities and other research institutions becomes more and more important in terms of international visibility.

A challenge in this context is to maintain the balance between a broad range of technologies and research fields on the one hand and excellence and scientific focus on the other hand.

A minority of cluster managers stated specific development potential regarding the research institutions in the cluster. Not explicitly asked, one cluster manager said that new services for enterprises and/or research institutions are to be developed and offered by the cluster initiative.
INTERNATIONAL COOPERATION

The last part of the questionnaire was dedicated to international cooperation – its strategic relevance for the clusters, their experiences in international cooperation, their current engagement in European or any other international activities and finally their expectations regarding the establishment of a meta-cluster in the Alpine region.

Strategic relevance of international cooperation
On a scale of 5 categories, 12 cluster managers estimated a clearly high strategic relevance of international cooperation for the cluster initiative. 14 cluster managers said the strategic relevance is either medium (3) or medium/high (2). Only 5 clarified that international cooperation is of low relevance.

Experience in international cooperation
As shown below, the extent of experience in international cooperation is highly variable. A relative majority of 16 cluster managers said their international experience was at a medium level, only 4 clusters have low experience in international cooperation. On the other hand, 10 clusters – more than one out of five – have high experience in international cooperation.

Experience in using EU-programmes for international cluster cooperation
EU-programmes and funding schemes are said to be major driving forces in stimulating transnational cooperation projects. Therefore, it is quite surprising that the experience in using EU-programmes for international cluster cooperation is significantly lower – only three cluster managers have high experience in using European programmes for international cluster cooperation.
Currently, a remarkable percentage of clusters – 80% – are engaged in European or other international activities. These are in decreasing order of frequency:

* **Programmes of European Territorial Cooperation (27 clusters)**
  - Interregional cooperation programme (15)
  - Transnational cooperation programmes such as Alpine Space, Central Europe,... (10)
  - Cross-border cooperation programmes (9)

* **7th Framework Programme for Research and Innovation (17 clusters)**
  - Regions of Knowledge (11)
  - Research for SME Associations (4)

* **Competitiveness and Innovation Framework Programme (14 clusters)**
  - Entrepreneurship and Innovation Programme (7)
  - Intelligent Energy Europe Programme (7)

* **CORNET (3 cluster)**

* **Others (7)**
  Bi- or multilateral interclustering programmes (USA, Japan,...), Leonardo da Vinci, WIINTECH, Ecolup, EUREKA

Cluster initiatives therefore mainly engage in Programmes of European Territorial Cooperation, esp. interregional cooperation programmes. In terms of research and innovation, 37% of the clusters interviewed have participated in FP7, 30% in CIP.

Interestingly, the strategic relevance of international cooperation for the cluster initiative is designated quite high. Further, a clear majority of cluster initiatives is engaged in EU-programmes for international cluster cooperation. Yet the experience in international cooperation is assessed distinctly lower by the cluster managers.
In these international cooperation projects, mainly the cluster management was involved (approximately in 3 out of 4 cases). Companies from 28 clusters participated in international projects, among these were 13 large enterprises (39 %) and 20 SMEs (61 %). Research institutions were involved in 23 clusters, furthermore 10 public bodies. “Others” include cluster managing companies, an environment park or other cluster initiatives.

**Participation in an innovation oriented cluster platform on international level**

18 out of 46 clusters are participating in an innovation oriented cluster platform on international level. Among these are international cluster platforms and networks (European cluster collaboration platform, European cluster manager club, European cluster observatory, ...) as well as thematic networks like the European textile platform, European chemical regions network, Semiconductors clusters forum etc. and networks as part of cooperative projects, e.g. in EIT-projects.

**Benefits in international cooperation with other cluster initiatives or networks**

The benefits in international cooperation are seen in five terms: International cooperation with other cluster initiatives and network functions as a door opener for international contacts and transnational collaboration. Besides, it gives access to innovative developments and technologies, international collaboration raises the international visibility of the cluster resp. the cluster region and it opens new international markets for the cluster companies. Another aspect, which was mentioned by 29 cluster managers, is the access to public funds through international cooperation projects.

A subordinate role play aspects such as mobility of human resources, acquisition of new cluster members or cost reduction through usage of synergies. Missing in the proposed categories was the aspect of international cluster visits, as one comment shows. It allows to test the experience in an unknown environment and to learn from practices and mistakes of others, said one cluster manager.
Barriers of international cooperation

78% of the cluster managers interviewed – or 36 in absolute numbers – did experience barriers with international cooperation so far, 10 did not. As shown below, the involvement and motivation of companies for the participation in international projects was a difficult issue.

Further relevant barriers are funding for international activities, administrative efforts for EU or international projects and the fact that in 14 cases the objectives and results of international projects are not fully in the scope of cluster strategy.
Additional funding for international activities by local and European authorities | Increase funding to liberate cluster human resources

Strengthening and expanding existing cooperation platforms and networks

Fostering communication within the cluster | Support for cluster members, esp. SMEs, in international activities

Simplification of administration and funding processes | Involvement of large companies and research institutions

Increase of international network activities | Personal contacts as a basis for cooperation

Offer of efficient organisational solutions | Establishing contact points at local and European level with regular meetings

Promoting clusters in context of international trade fairs and delegation visits

Increasing knowledge transfer in the course of cooperation projects

Building a network of clusters with shared strategy and common plan of activities

Establishing an exchange program for cluster managers

**Helpful activities of a meta-cluster**

The objective of “ALPS4EU” is to overcome the fragmentation of clusters in the Alpine space. Establishing a meta-cluster could be useful to intensify the cross-cluster-cooperation and remove transnational barriers. A meta-cluster is defined as a trans-regional network of cluster initiatives, which focuses on the same or complementary specific technological field or sector and consists of at least three cluster initiatives in three different regions.

In the view of the 46 cluster managers interviewed, especially the following activities of a meta-cluster would be helpful to foster their international cooperation with other clusters and networks:

- **General activities to strengthen the visibility and influence at EU level**

  39 cluster managers said a meta-cluster should carry out general activities to strengthen the visibility and influence at EU level. This could be due to the fact that participation in EU-funded projects is estimated to increase in terms of cluster financing in the future by 40 out of 46 cluster managers - visibility and strong networks at EU level play a crucial role in the development and implementation of EU-funding for cluster activities.

- **Joint analysis and studies**

  Nearly the same number of cluster managers, 37 by count, regard joint analysis and studies as useful. This could relate to the characteristics of meta-clusters as a network of cluster initiatives, which focus on the same or complementary specific technological field. Therefore the identification of global economic and technological trends, which affect the cluster companies in different countries in a similar way, and expertise on the outlook is of interest for several clusters.
* Define common cluster action plans on a yearly basis
The definition of common cluster action plans on a yearly basis was regarded as helpful by 32 cluster managers. Three out of four cluster managers are thus willing to expand the regional strategic orientation and focus on transregional collaborative actions on a common basis. Nevertheless, cluster initiatives will remain their autonomy and responsibility for the regional cluster members.

* Establishing of a common intercluster information/data warehouse
Quite surprisingly, the establishment of a common intercluster information or data warehouse-systems is helpful according to 29 cluster managers and takes the fourth place in regard to useful activities of a meta-cluster. This could be interpreted as information about the cluster members, their competences and requirements etc., which is an important basis for the identification of common strategic actions, programs and projects.

* Define common policy strategies
27 cluster managers said the definition of common policy strategies through an intercluster-network would be helpful to foster international cooperation with other clusters and networks. This may arise from the fact mentioned above, that meta-clusters deal with the same or familiar technology or branch of industry. Therefore, common policy inputs at regional, national and European level could have more impact force as individual ones.

*multiple answers possible: n = 46
Figure 22: Helpful activities of a meta-cluster to foster international cooperation*
### Expectations regarding the establishment of a meta-cluster

- Global visibility of meta-cluster
- Driving force for exceptional economic development
- Driving force for employment, skills development and attraction of international talent
- Strengthening the knowledge base of the meta-cluster region
- Leading edge research activities
- Large-scale research projects
- Access to financial funding of the EU
- Door-opener for major international networks and collaboration
- Transnational policy development and programming
- Others

*Multiple answers possible; n = 46

Figure 23: Expectations regarding the establishment of a meta-cluster*

The concrete expectations of cluster managers regarding the establishment of a meta-cluster in the Alpine region are clearly visible: A meta-cluster should function as a door-opener for major international networks and collaboration and deliver access to financial funding of the EU. According to this result, the aspect of financing should play a crucial role in all considerations about the establishment of a meta-cluster. All other possible effects and gains are not expected by more than a half of the cluster managers interviewed.

Three comments were given: One cluster manager said a meta-cluster should provide a fertile breeding ground for a better knowledge and collaboration among cluster members. Another interview partners stated to have no specific expectations respectively sees no need for new meta-clusters.

### INTERPRETATION

First of all, an interpretation of the presented results has to stress the significance of the survey: 46 cluster managers from six countries were interviewed, representing 8,500 cluster members, of which 7,100 companies. The questionnaire was very detailed and most of the clusters were analysed very deeply regarding their structure, strategy, strengths and challenges. The statements given and considerations exposed should therefore not be underestimated.

Against this background the following conclusions can be drawn:

* The structure of the clusters is very heterogeneous, regarding the age and maturity of the cluster initiatives, the amount of cluster members or their resources (e.g. the human resources in the cluster management vary from 0 to 36 full-time equivalents). Nevertheless, the financial resources
are relatively extensive – more than half of the clusters have an annual budget of € 1,000,000 or more. In either form of cooperation among the clusters, this wide spectrum of organizational capacities has to be considered.

* Looking deeper at the aspect of finance, the sources of financing used for cluster activities show a high meaning of regional funding and membership fees. In some cases, national funding also plays a crucial role. In the outlook, a clear majority of the cluster managers expects regional and national funding to decrease – while participation in EU-funded projects as a source of finance will highly increase in future. Throughout all countries and regions regarded in this survey, a fundamental shift in the financing of the clusters from the regional and national level towards the European level is expected. This can be a powerful driving force for a distinct intensification of transregional and transnational cooperation, which is usually demanded for the acquisition of EU-funds.

* The clusters contain competitive companies – leading companies as well as SMEs – and high-level research institutions. The structure and know-how of cluster members form the basis for cluster activities at international level, especially in terms of collaborative projects. The preconditions for raising international cooperation are given, as most of the clusters contain excellent enterprises and academic institutions.

* One important value added by cluster networking is the ability of clusters to activate SMEs for international cooperation. 5,900 SMEs participate in the 46 clusters, many of them are very specialised companies at high levels of competence. Yet the greatest barrier of international cooperation is, according to the cluster managers, to involve and motivate cluster companies for participation. At present, European policy stresses the potential of SMEs in terms of innovation, internationalization and entering new market fields.

For example, in the upcoming 8th Framework Program for Research («Horizon 2020»), SMEs and SME associations will be especially addressed and involved in European research activities.

* In the majority of the cluster initiatives – 85 % – the cluster performance is being evaluated on a regular basis. This shows a strongly pronounced culture of evaluation, which is the basis for adjusting the cluster activities to the demands of the cluster members and the objectives pursued and usually stands for a high level of professional and excellent cluster management. The efforts in the preparation and composition of international networks, projects and meta-cluster activities require organisational competence and must be taken in mind by evaluation authorities.

* The targets and strategic outlook are very coherent among the 46 clusters. On top of the agenda are (a) the creation of cooperation networks among cluster companies, (b) knowledge transfer and (c) strengthening the competitiveness of cluster companies. According to this, a stronger emphasis on international collaboration of clusters is nothing but a logical consequence of economic developments (globalization, international division of labour, multi-national enterprise networks and supply-chains, etc.). Transregional and transnational collaboration of clusters can make a valuable contribution to strengthening the competitiveness of cluster members and achieving access to knowledge and expertise.

* Most of the clusters set a thematic focus on Key Enabling Technologies (KETs), such as nanotechnology, micro- and nanoelectronics, advanced materials, biotechnology and photonics. The European Commission regards these technologies as main driving forces behind the development of future goods and services. Therefore they play an important role in R&D and innovation strategies of many industries and regions and are regarded as crucial for ensuring the com-
petitiveness of European industries in the knowledge economy.

Almost half of the clusters are active in fields of energy and green tech. There is no doubt that energy and sustainable economy will be of high priority in politics, innovation and research in the next years. In the current strategies at the European level (Europe 2020, Horizon 2020, regional policy...), energy and sustainability are a main part of the so called “grand challenges” and will be a major issue to deal with.

The awareness on the meaning, benefits and challenges of international cooperation among the cluster managers is very pronounced. Most of the clusters have experience in international cluster cooperation, especially in the participation in EU programs. Furthermore, a clear majority of cluster managers interviewed are actively involved in EU-platforms, programs and projects at present. Still, there is a gap between the strategic relevance of international cooperation in the future and the extent of experience in international cooperation in past and present. Challenges arise mainly from the involvement of cluster members, as mentioned above, and the funding for international activities. Taking into account that 98 % (!) of the cluster managers consider an increase of international cooperation in the future, the barriers have to be removed as quickly as possible and an upgrading of competences in participating in EU programs and using EU funds will be crucial. Therefore, qualification and training measures with regard to the program portfolio of the next EU period from 2014 – 2020 seem to be reasonable. Besides, the diverse benefits of international cooperation have to be stronger enlightened.

Finally, the potential for meta-clusters – defined as a trans-regional network of cluster initiatives – can be identified in the following aspects:

First, the fragmentation and heterogeneity among the clusters should be overcome by common strategies for clusters. For that, initial workshops of cluster managers of the same thematic focus in the defined four key sectors (Energy and Green Tech, Mechatronics and Engineering, Chemistry and New Materials, ICT) would be useful (networking, concrete interests in collaboration, expectations, capacities etc.). On this basis, common strategies for clusters with the same focus could be defined, including an emphasis of collaborative projects, potential partners and cluster members involved, facing the barriers and so on. As the issue of financing obviously plays a crucial role, the possibilities of EU-funding and participation in funded projects should be considered from the very beginning and appropriate experts should be involved.

Second, collaborative R&D and innovation projects can be initiated as the clusters contain companies and research institutions at high level of excellence. There is undoubtedly a high potential for a strong common participation in the European Research Area (ERA). The key aspect is the clusters’ ability to activate and integrate a broad range of their members, esp. companies, for collaborative projects. There is evidence to suggest that a stronger international participation, esp. of SMEs, in collaborative projects and support by European bodies will be required from 2014 on. This opportunity must not be missed and clusters from the Alpine region should early set priorities and actions to contribute to their strengths and knowledge in the ERA.
Third, a meta-cluster as a network of cluster managers could be a strong and sustainable basis for fostering transregional and transnational cooperation and a remarkable increase in the European and international visibility. The opportunities and benefits of cooperation can be promulgated to companies, researchers, public bodies and the public. Furthermore, the cluster managers should function as multipliers in their regions and nations and as enablers for cross-cluster-cooperation. Beyond, the knowledge, benefits and potentials of clusters in the Alpine area will sooner or later be broadly appreciated.
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44 Micronarc. Micro-nanotech cluster of Western Switzerland  
45 Cleantech Alps  
46 Reseau energie et batiment
The ALPS4EU project gathers 12 project partners from 6 different European and non-European countries, closely linked to the alpine space area, including:

**2 regional authorities:**
- Regione Piemonte (IT)
- Rhône-Alpes (FR)

**6 local/regional development agencies:**
- CESTEC and Veneto Innovazione (IT)
- MFG and Steinbeis Europa Zentrum (DE)
- Tiroler Zukunftsförderung (AT)
- Pososki Center (SL)

**4 organisations representing enterprises:**
- Unioncamere Piemonte (IT)
- Institut Jozef Stefan (SL)
- Chambre de Commerce et d’Industrie de Nice Cote d’Azur (FR)
- Pôle Scientifique et Technologique du Canton de Fribourg (CH)
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Marco Mangiantini
Giulia Maccario

Angelo Gatto
Silvia Corbetta

Maria Sole D’Orazio
Ivan Boesso
Alessandra Torresan
Chiara Scaramuzza
SWOT Analysis and Map of Clusters Strategic Priorities- Potential Transnational Cooperation between Clusters in the Alpine Region

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