

# Foresight exercise Diagnosis report

---

Final document, 14<sup>th</sup> October 2014

**PP2 Veneto Region – Research and Innovation Department  
with the collaboration of University of Padova - Department of Economics and Management**

## TABLE OF CONTENTS

1.	INTRODUCTION .....	3
2.	MAIN CONCERNS AND TOPICS ACROSS CLUSTERPOLISEE REGIONS .....	6
A.	COOPERATION AND INTERNATIONALISATION .....	6
A.1.	THE GEOGRAPHY OF COOPERATION.....	6
A.2.	THE ACTORS OF THE COOPERATION.....	8
B.	REGULATION AND AUTHORITIES INVOLVED IN THE CLUSTER POLICY.....	10
B.1.	IMPORTANCE OF DIFFERENT (EXISTING) AUTHORITIES TO BE INVOLVED 11	
B.2.	IMPORTANCE OF COHERENCE BETWEEN REGIONAL, NATIONAL AND EU AUTHORITIES' ACTION .....	12
C.	CLUSTER POLICY GOALS .....	15
C.1.	DIVERSITY OF CLUSTER POLICY GOALS ACROSS SEE AREAS.....	15
C.2.	IMPORTANCE OF TRAINING .....	16
C.3.	IMPORTANCE TO DEVELOP INFRASTRUCTURES .....	20
C.4.	IMPORTANCE TO DEVELOP AN APPROPRIATE EVALUATION METHODOLOGY .....	21
D.	FINANCE .....	23
D.1.1.	PUBLIC FUNDINGS .....	23
D.1.2.	PRIVATE FUNDINGS.....	25
E.	SMART SPECIALISATION STRATEGIES.....	27
E.1.	SUSTAINABILITY .....	28
3.	CONNECTING THE EMERGING ISSUES WITHIN THE 6WG AREAS: THE MODEL	30
	APPENDIX 1 - Respondent's code, organisation name and country.....	35
	APPENDIX 2 - Respondent's answer considered by country of origin.....	36
	APPENDIX 3 – List of criteria adopted for the SWOT analysis in WP 4.3 .....	47

## 1. INTRODUCTION

The document presents an analysis of the materials collected during WP 4.2, WP 4.3<sup>1</sup> and by the working groups to finalize the setting up of the SEE Cluster Initiative (6.1) and the development of the Joint Strategy and Sustainability Plan (6.3). The study analyses the information collected coming from both the **Aggregate Report on Foresight Analyses** and the **ClusterPoliSEE SWOT Final Report**, in order to provide a comprehensive overview of the most important topics emerged so far and to identify relevant differences or similarities across regions. This analysis aim at being the starting point to develop, the final steps of the ClusterPoliSEE project.

More precisely, this report aims at providing a systemic and overall analysis of the data collected, by employing a stepwise approach, in order to inspect the main issues, highlight common visions and understand differences among SEE regions.

### DOCUMENTS AND METHODOLOGY

This analysis is based on the following documents:

- The **Aggregate Report on Foresight Analyses**: this document provides the results of a study conducted on diverse countries participating to the program<sup>2</sup>.
- The **ClusterPoliSEE SWOT Final Report**: starting from a list of 71 pre-defined criteria inserted on a SWOT analysis, the respondents, selected the ones that better represented clusters' key issues and policies' features. In this way, respondents had the opportunity to critically evaluate the role of the actors involved, but also the efficacy and the state of development of the policies implemented at local, regional and national level<sup>3</sup>.

The methodology used for the analysis was based on three main steps aiming at investigating, under different perspectives and with diverse purposes, the data provided in the documents.

---

<sup>1</sup> WP 4 – Learning Process for Reflective Policy Making: The aim of WP4 is to create a common framework of understanding among all project partners, leading to an in-depth understanding of current cluster policies. This learning process is the first step towards developing smarter policies in support of existing clusters in SEE and enhancing the capacity of policy makers to confront, prevent and anticipate change. The learning process itself consists of four major actions: a past actions analysis for learning input, innovative information gathering from foresight workshops, creation of a framework of existing cluster policies for policy learning, and learning from study visits and benchmarking. Sound and effective transmission of results to relevant stakeholders is to be achieved through the SEE Cluster Policy learning platform, establishing a constant feedback process. More in detail WP 4.2 refers to “New contribution from innovative data sources gathered form study visits” and WP4.3 is focused on “Policy learning from current regional policies framework”. Source: “ClusterpoliSEEPortal” platform.

<sup>2</sup> Albania, Slovenia and the Veneto were not included in this document so have been analysed using the data included in the “WP Area 4.3” on the “ClusterpoliSEEPortal” platform.

<sup>3</sup> Slovenia (two Respondents) and Veneto were not present in that document so the information have been integrated using the data reported in “WP Area 4.3” in the “ClusterpoliSEEPortal” platform (<http://www.clusterpolisees3.eu/ClusterpoliSEEPortal/> section: WP AREA (4.3))

As a first step, an analysis has been conducted connecting the answers of each of the 31 (regional) respondents to the country they belong (12 countries in total), and comparing them in relation to the criteria chosen among the 71 available and the responses provided. This stage was aimed at underlining differences and similarities, in regards to common points, among regions in the same country to highlight the various approaches and conditions. It is worth underlining that this approach was not meant to make generalisations at the national level but was rather a step of a method aimed at identifying the common issues across regions. The result of such an analysis is provided in *Appendix 2*, where data are organized in seven tables reporting the respondents' codes (*see Appendix 1*), the number of the chosen criteria (for more information see: ClusterPoliSEE SWOT Final Report) and a short summary of the content. This first analysis has highlighted some common issues and key points evidenced by the respondents. Furthermore, it has underlined that, even if respondents were coming from the same countries, the fact of belonging to different regional organisations, implied that approaches, topics, concerns and main issues considered were diverse even within the same countries.<sup>4</sup>

The second step of the analysis has focused the attention on the single respondents, in order to refine the major topics emerged from the first step analysis. Consequently the answers provided by the respondents have been compared with respect to the core aspects emerged, in order to detect similarities and differences. In the following paragraph we lists (not in order of importance) the five common concerns emerging from such an analysis, briefly anticipating the main results coming from the analysis, which will be reported more in depth in the following chapters.

The findings resulted from the analysis of the respondent's answers presented within with the “**ClusterpoliSEE**” platform WP 4.3 section<sup>5</sup>, have been compared and integrated with the data presented in the WP 4.2 section<sup>6</sup>.

The last step of the analysis has been to develop a model identifying the relationships existing among the key elements emerging from the analysis and the 6 WG areas identified in the ClusterPoliSEE project, comparing and integrating the emerging evidence with data coming from the “Aggregate Report on Foresight Analyses” document.

## THE FIVE COMMON CONCERNS IDENTIFIED

**A. Cooperation & Internationalisation.** Cooperation and internationalisation are important aspects to be implemented at various levels in order to enhance cluster development and to become more competitive in the markets. Cooperation may take place inside the clusters, for example between SMEs and large firms or multinationals, or with universities and research centres. It could also exist among clusters, for instance between traditional and new technological ones. Last but not least, cooperation also

---

<sup>4</sup> Sometimes contradictory answers have been provided, demonstrating that different actors may conceive diverse cluster policy's plan and visions. On the other hand, in some cases, respondents from the same nation have fill up the SWOT analyses with mostly identical answer.

<sup>5</sup> [http://www.clusterpolisees3.eu/ClusterpoliSEEPortal/en/act\\_4\\_3.page](http://www.clusterpolisees3.eu/ClusterpoliSEEPortal/en/act_4_3.page)

<sup>6</sup> [http://www.clusterpolisees3.eu/ClusterpoliSEEPortal/en/act\\_4\\_2.page](http://www.clusterpolisees3.eu/ClusterpoliSEEPortal/en/act_4_2.page)

mean an inter-regional/inter-national cooperation aimed at exchanging knowledge, sharing skills and learning from best practices.

- B. Regulation & Authorities involved in the cluster policy.** These two topics are considered important aspects, because the functioning of the cluster or regional authorities has consequences on most of the cluster related aspects. For most regions, regulation is not responding to specific cluster needs, being too complicated, inadequate or inefficient and consequently it is often perceived as an area to be improved. Several respondents highlighted also the role of the personnel involved in the policies implementation, with respect to the number of people employed, their expertise and actions aimed at policy creation and delivery.
- C. Cluster Policy.** Cluster policy is a core aspect of the analysis because its efficiency and efficacy is crucial for all cluster related aspects. A case in point is made by the cluster development that, to be enhanced, needs specific policies' implementation. Another example is made by the workforce that is represented by a wide number of actors involved in different roles, including cluster managers, clusters' employees and members of the authorities or of other organisations involved. The respondent's comments aimed to underline the importance of a skilled workforce and how the lack of skilled employers from one side and the high level of unemployment (in relation to the crisis) from the other, could lead to the "brain drain problem".
- D. Finance.** Under this section were grouped all the comments on attribution and attraction of public and private funds, both at national and European levels. The capability to attract funds is connected to political and economic issues. Furthermore, because funds allocation could be implemented on a national, regional or local base, an efficient evaluation methodology is needed to clearly outline the cluster strategy and structure, allowing clusters to apply more successfully for funds. Capitals are also important in relation to infrastructures' development and to enhance interregional/international cooperation.
- E. Smart Specialisation.** Despite the fact that countries have different stages of Smart Specialisation Strategy (S3) implementation, most respondents have underlined the importance to enhance and put into practice this strategy. Importance is also given to the relationship existing between the S3, clusters and clusters policies.

## **2. MAIN CONCERNS AND TOPICS ACROSS CLUSTERPOLISEE REGIONS**

The following paragraphs inspect the main topics emerged from the analysis, highlighting differences and similarity among the various respondents' conditions or perspective in relation to the topic described. In fact, respondents' perceive subjects in different ways due to differences existing among environments, clusters and policies. To underline or better elucidate differences or perspectives, examples of the answers provided have been added to the study. To name the single respondents the codes reported in *Appendix 1* have been used. The analysis is organized so to highlight the different sub-issues emerging across each main topic and possible differences across regions and with a wider perspective, countries.

### **A. COOPERATION AND INTERNATIONALISATION**

All respondents are aware of the benefits coming from collaboration strategies and the importance of their implementation (when this practice it is not developed enough). At this regard, the evidence suggests that the main elements highlighted by ClusterPoliSEE project participants as far as cooperation is concerned, regard on the one hand the geography of such collaboration, and on the other hand the type of partners that should be involved in order to increase the chance of clusters to develop higher competitive advantages.

#### **A.1. THE GEOGRAPHY OF COOPERATION**

##### **A.1.1. Intra-cluster and inter-cluster cooperation**

Respondents' answers suggest that collaboration is considered essential both within the cluster among cluster members, and outside the cluster, at regional, national and international level. Respondents consider that the benefits of the collaborative projects would not be limited to the cluster itself, but would have positive consequences also at regional level. This is what emerged, for example, from a study reported by the Austrian respondent (criteria 70<sup>7</sup>), where it is explained that cluster collaborative projects have positive effects on the cooperation culture. Another example is made by the Bulgarian respondent, who highlights how knowledge exchange and collaboration among clusters, are important to face business challenges (see the sentence below).

(R16, criteria 14) *“The economy is always on the move. In order to keep up with the new business challenges cluster governance has to be open to continuously looking for business potentials, not only between cluster participants but with other actors as well. Cluster policies and programmes should ensure and support knowledge exchange and collaboration between clusters with a view to accelerating the dissemination of new ideas, knowledge and technologies between different sectors in the economy.”*

---

<sup>7</sup> A list of the criteria used may be found in the Appendix 3 at the end of this report.

Policy (also through financial support) plays an important role in enhancing the international collaboration among regional business players and may also foster cooperation and partnership among enterprises with research actors such as R&D centres and universities, but also between traditional sectors and new technological ones. The following responses from Marche Region (R1) and Lower Austria (R5) are case in point.

(R1, criteria 27.9): *“The role of national level towards cluster identification and development comprises the actions (...) aimed at integrating research/training/innovation through the support of National Technology clusters development. These programmes represent an opportunity to create excellent collaboration at national level and for regional clusters (...) to become national competitors. In the framework (...) is a financial support for enterprises which intend to make an investment in R&D based on the establishment of a technological-productive chains, through partnership agreement, contract for networks activation, with the involvement of research actors (universities and research centres) and Innovation Transfer Centre. This regional policy is an opportunity enabling enterprises and academic sectors to work together in collaborative, research and development projects, without the creation of intermediaries for networks management.”*

(R5, criteria 11): *“1. The cluster policy fosters strong linkages between the business and the research sphere through requiring the involvement of research institutions (...) in the membership of the clusters themselves; but also through fostering the collaboration between cluster initiatives and the Technopols (...). 2. The cluster initiatives foster the diversification of these technologies into the (traditional) sectors (...). 3. The cluster management (...) enables the involvement of SMEs in international R&D projects by providing the project management of these projects.”*

Some respondents (e.g. the Greek ones, R14) add that the national culture and mentality complement the role played by cluster policies in this respect, and may represent a weakness and a threat to the cluster development with a consequent loss of competitiveness. Cases in point are made also by the Albanian and Slovenian respondents (see below, R3, R30).

(R14, criteria 2): *“Cluster policies can play an important role at national and regional level by bringing together and making people and businesses cooperate, a cooperation mentality that is not eminent in the Greek economy and society at the moment”.*

(R3, criteria 27.8): *“More knowledge exchange is needed as well as to overcome the individualistic mind-set”.*

(R30, criteria 34) *“Loosing competitive advantages due to inactivity, lack of knowledge, lack of networks.”*

### **A.1.2. International cooperation**

Several respondents see internationalisation as an opportunity to learn from other countries' best practices and to improve the cluster competences. They also underline the importance for inter-cluster cooperation to overcome national borders. A case in point is made by Slovakia, which highlights the positive outcomes of international cooperation activities (R10, criteria 29.3) and underlines the importance of networking to improve the innovation capabilities and the transfer of knowledge and technologies (R9 criteria 29.5). The same point of view is shared by the Austrian respondent (see quotation below):

(R5, Criteria 29): *“Bring technological know-how to the region through enhanced collaboration with research institutions abroad [...]”*.

## **A.2. THE ACTORS OF THE COOPERATION**

### **A.2.1. Collaboration with universities and R&D centres**

As briefly mentioned in the previous chapter, the role of the universities is considered important for research related aspects and also for the education of highly qualified work force. For these reasons collaboration with universities and with knowledge and research institutions is considered very important for the cluster development. This relation may be enhanced by the cluster policy, as in the case of the Austrian (R5, criteria 11) and the Marche Region (R1, criteria 27.9) respondents. At this regard, an example is made by the Italian respondent from Emilia Romagna who sees the increase of collaboration with R&D centres as an opportunity to boost the innovation process (R6, criteria 11). According to the same respondent the transfer of knowledge from universities and public research organisations to firms should be encouraged:

(R6, criteria 11) (Strength): *“Promotion of industrial research and technology transfer from universities and public research organisations to firms through a regional network of industrial research laboratories and innovation centres, organized into regional thematic platforms and located into a regional network of techno poles”*.

Furthermore collaboration among firms and universities as well as the promotion of R&D projects involving graduates are important methods to train a skilled workforce capable to meet clusters needs. Two Italian respondents, respectively from Emilia Romagna and Marche regions, highlight the various, valuable aspects related to these collaborations (refer to quotations below).



(R6, criteria 11) (Strength): *“Promotion of R&D activity in firms, and especially in SMEs, supporting projects involving newly graduates and including collaboration with research centres”*

(R1, criteria 49) (Strength): *“Regional policy activated an industry (through the involvement of associations/unions as representative of industrial sectors) - academy partnership, first of all in the development phase of cluster policies: universities were asked to provide support in the identification of enterprises' needs (training, innovation and R&D needs), so that policies can be steered towards real industry's requirements. Industry-academy cooperation was also fostered through specific financial support to networks creation and development in different fields: innovation, R&D, training and logistic sectors (e.g. PhD scholarship was granted based on industry/academy partnership). A challenge for regional policy is to establish steady networks between universities and industry.”*

Interestingly, the analysis suggests also that the level of collaboration among universities or research centres and companies differs from one region to the other. If the examples above show that such virtuous circle is already in place, other respondents report that such collaboration does not exist in their regions and this is considered as a major weakness. A case in point, reported in the table below, is made by the Croatian respondent (R26), who underlines the gap between educational programme and companies' needs. Furthermore, as reported below, the Romanian respondent (R2) highlights the importance to invest more in R&D, to realign Romanian national expenditure with the European average, to limit the negative effects.

(R26, criteria 27.11): *“Government did not align education programs with the demand and development strategy. School programs are outdated and based on theoretical facts and almost negligible in practical knowledge. Except in the medical field there are no significant and on-going links between educational institutions and enterprises.”*

(R2, criteria 40): *“R&D represents a prerequisite of innovation. Concerning innovation, there is already a significant gap between North East Region and the national level and between Romania and the European average. In the latest Innovation Scoreboard 2011), Romania was scored as a modest innovator, with R&D expenditures in public sector at 38% of the European average while business R&D investments at only 15%. Failing to support an R&D in the context of cluster development will lead to further increase in the gap”.*

### **A.2.2. Collaboration with large firms**

Some respondents underline the importance to collaborate with large firms or multinational companies to enhance R&D, internalisation and competitiveness. In this sense, large firms would play, from a private level, a similar role than public R&D centres and universities.

To this extent a Hungarian respondent, whose answer has been reported below, positively underlines the importance of the cluster policy in enhancing these collaborations.

(R18, criteria 22): *“Cluster policy in respect of securing the presence of large firms promoting inward investments activities and regional marketing, initiating supply chain management projects are very strong.”*

Such collaboration would be particularly valuable for SME. However, the cooperation between large enterprises and clusters of SMEs is not always granted. Sometimes large enterprises belonging to clusters have no interest in cooperating with the clusters. Some respondents suggest that this lack of cooperation may be caused by different situations. In some cases such a lack of cooperation between large firms and SMEs may be driven by a lack of State support, as reported by a Slovakian respondent (R9) below. In other cases it may be driven by the absence of big enterprises in the area, as this makes more difficult to involve large companies in cluster initiatives, as suggested in the example by the Austrian respondent.

(R9, Criteria 42): *“Weak support of cluster by large enterprises. Even though Auto-cluster operates within the automotive industry, car manufacturers operating in Slovakia are not interested in becoming members of the cluster and thus support activities of cluster towards small and medium-sized enterprises - a potential suppliers to the automotive industry, because there is not visible cluster support from the state.”*

(R5, Criteria 22) *“In the region there is a relatively small number of large (multi-national) companies to be involved in the clusters as driving forces.”*

### **A.2.3. Collaboration between traditional clusters and high-tech organisations**

Last but not least, some respondents have underlined also the importance of collaborations between traditional clusters and public centres or private enterprises entailing competences in high-tech or emerging industries as a useful interaction to foster cluster development. This aspect is also underlined by a Croatian respondent (R24), who highlights the opportunities coming from the technological support of traditional enterprises:

(R24, criteria 2): *“Croatian economy has a proactive attitude towards traditional entrepreneurship which is reflected in the fact that the incentives are affecting the increase of economic efficiency of Croatian companies, raising the technical and technological equipment, personnel expertise and quality of managerial concepts, which will affect the development of clusters”.*

## **B. REGULATION AND AUTHORITIES INVOLVED IN THE CLUSTER POLICY**

Regulation is a significant topic because it has consequences in every cluster related aspect, from the fund fruition to cluster policy implementation and evaluation and with repercussion on the work force preparation, job creation, and intra and inter-cluster collaboration. The regulation issue is strictly connected with the authority responsible for its implementation and adaptation to national, regional and local necessities. The analysis underlines that these key aspects need to be better

structured or restructured (where they are already developed) to be more efficient and to better support the cluster activities.

For most of the countries, government regulation represents an obstacle more than a support for the clusters activities, either because it is absent or insufficient, or because it is too complex. A case in point is made by the responses provided by the Veneto region, where both aspects appeared as weaknesses of the regional system.

(R31): *“Finally, the regional public institutions aimed at regulating and supporting the job market are not well functioning and are completely absent at the district level”.*

(R31) : *“A main weakness of Veneto financial framework, which is common at the national level, is the complexity of the funding regulations, which in some case inhibits firms to apply for funds, even if their project would be applicable, or, in case they apply and win the grant, implies an high administrative burden.”*

### **B.1. IMPORTANCE OF DIFFERENT (EXISTING) AUTHORITIES TO BE INVOLVED**

An important aspect related to regulation concerns the organisations that should be responsible for the development and management of the cluster initiatives.

Also in this case the diversity across region is very high. The majority of regions report of a poor integration between existing institutions to foster cluster competitiveness, but examples of effective cooperation among authorities which results in efficient cluster policy implementation do exists. A case in point is made by the Austrian respondent, who highlights that a well-integrated cluster policy enhances and supports regional innovation and collaboration between various stakeholders, being in line with the Smart Specialisation Strategy.

(R5, criteria 9): *“The Lower Austrian cluster policy is very well integrated in the Regional Innovation Strategy (Economic Strategy 2015), the implementing body Ecoplus is part of the well-defined governance system for innovation support within the region. The cluster initiatives are in line with the region's strategic priorities (innovation, cooperation, sustainability) -> Smart Specialization. There is also a well attuned collaboration between the cluster managements and other innovation support providers (internationalisation support services, start-up support services, etc.)”*

Several respondents report that a deeper integration between different existing authorities is needed in order to improve the effectiveness of cluster policies. In the following examples the Albanian (R3), Hungarian (R27) and Bulgarian (R4) respondents underline the limited role of the authorities in relation to the cluster support.

(R3, criteria 27): *“More involvement of all institutions required.”*

(R27, criteria 26) *“Public authorities has limited role in supporting clusters.”*

(R4, criteria 32) *“Only Ministry of Economy, Energy and Tourism is responsible for the cluster policy. No other institution is involved in the process of its elaboration and implementation.”*

This problem is often exacerbated by the fact that the personnel devoted to develop cluster initiatives is often under numbered to support clusters. This element has negative effects on effectiveness and efficacy of the policy implementation. A clear example is given by the Albanian respondent:

(R3, criteria 5): *“Limited staff, on both sides, public and private.”*

## **B.2. IMPORTANCE OF COHERENCE BETWEEN REGIONAL, NATIONAL AND EU AUTHORITIES' ACTION**

Other regions report that authorities involved in cluster policy setting may be over-numbered, leading to a broad tasks fragmentation and consequently to inefficiency and uncertainty with regard to the effective cluster policy implementation. This problem is exacerbated when such authorities are not coordinated and do not follow common goals. The following statements by a Romanian (R2) and a Slovenian (R30) respondent are useful cases in point, since they lists the various responsibilities and the condition of uncertainty related to the wide tasks fragmentation and risks connected to the lack of collaboration among the key actors involved in the cluster policies development.

(R2, criteria 4): *“Far too many public authorities at national level are involved in the development of the cluster policy. While the Ministry of Economy holds the coordinating role, it can only be directly responsible for industrial-manufacturing sectors. As a consequence tourism and agriculture are being left out of financing schemes dedicated to clusters. The Ministry of Agriculture and the Ministry of IT&C dealing theoretically speaking with clusters in their own sectors have not done significant steps in the direction of cluster support. The Ministry of Regional Development, coordinating the activities of RDAs (who encouraged clusters emergence) is mainly responsible for the regional policy but coordination with the Ministry of Economy is rather loose. On the other hand the Ministry of Education and Research is responsible for the elaboration of the innovation policy and drives currently the smart specialization process. The Home Ministry is responsible for the industrial parks. The multitude of actors brings in a serious degree of confusion and uncertainty both regarding concept, policy*

(R30, criteria 27): *“If policies are not developed in collaboration with key actors: Weaknesses: difficulties in implementation. Avoidance of collaboration. No common goals. No clear. Lack of implementation. Lack of results (efficiency).”*

In the case several authorities take responsibility for developing clusters through the implementation of targeted policies a major problem is due to the fact that their actions do not follow coherent objectives. This aspect is particularly relevant when we consider authorities of different administrative levels: regional, national and European ones. The inefficiency in the tasks' allocation, with respect to cluster policies, may lead, on one hand, to a misunderstanding or underestimation of the real cluster needs and objectives and as a result to the creation of inadequate cluster policies; and, on the other hand, to miss some important opportunities.

The study of the SWOT analyses made by the respondents suggests that the major problems regard the integration between the regional and national levels and between the national and the European one.

In particular, some regions - such as the Greek region of Central Macedonia (R14), Marche Region (R1) and the Romanian Nord-Est region (R2) - explain that in several cases the regional level is not taken in due consideration either because there is a lack of regional leadership (no specialized agencies responsible for cluster policy implementation) or because a "top-down" approach is imposed at national level. In both cases, decisions on how to identify and support clusters are taken at the national level, which may lead to the risk to lose the sight of regional or local specificities and needs and to miss important opportunities.

(R14, criteria 52): *"There is no regional leadership in the cluster policy and therefore sustainability of cluster programmes is based on national priorities and initiatives."*

(R14, criteria 37): *"Cluster programmes have only national coverage with no regional specialization."*

(R14, criteria 43): *"National and regionally there is not specific specialized agency responsible for the implementation of cluster policy."*

(R1, criteria 4): *"The Decree of Italian Ministry of Industry of the 21st April 1993 (...) aimed at identifying the Italian industrial districts following a "top-down" approach based on statistical and qualitative data. A "model" of district was the point of reference in the ministerial action and this "hierarchical" approach did not fit with the concrete features of the regional districts. For this reasons this ministerial approach was not effective in districts development and support since it was difficultly applied at regional level."*

(R2, criteria 9): *"As the regionalization process is in its infancy there is a loose level of correlation between national and regional policies.(...) However the results could not be integrated into the policy at national level as until now financing schemes under structural funds have been managed on national level and foresaw no regional differentiation or specific measures. The continuation of the above described situation will lead to negative spill over effects and loss of momentum concerning cluster development policy."*

Similarly, the discrepancy between policies developed by national and European authorities may also lead to the loss of important possibilities, especially with regard to access to funds. In the following example the Romanian respondent (R2) underlines the gap in relation to the stage of cluster policies implementation, between EU and Romania (RO), which turns in the impossibility to apply for EU funds.

(R2, criteria 1): *“It is only in 2008 that the Ministry of Economy started to undertake the first steps in shaping up the cluster policy in Romania. (...) Concerning the financing instruments, a single call for proposals has been launched so far in August 2012 dedicated to poles of competitiveness, understood as clusters of national importance. Proposals are still in evaluation. Hence clusters have emerged either by means of self-financing or FP7 - regions of Knowledge. On the other hand, at European level, regions of Knowledge will no longer exist within Horizon 2020, and main focus of European support to clusters will be placed in the field of internationalization towards extra European markets. Thus, at the moment there is a gap of at least one stage of cluster development between RO and European clusters (generation-development- excellence - internationalization), i.e. RO clusters are in the generation (few have passed unto the development phase) while European ones find themselves in development-excellence phase. If concrete support measures are not foreseen quickly, gap will grow and it will become more and more difficult to be overcome.”*

## **C. CLUSTER POLICY GOALS**

In this topic, we reported the evidences emerging from the analysis with respect to the cluster policy development, evaluation and management, which is strictly connected with the other four topics discussed in the document.

### **C.1. DIVERSITY OF CLUSTER POLICY GOALS ACROSS SEE AREAS**

Respondents' answers highlight that the regions involved in the project are dealing with different stage and issue of the cluster development, supporting what emerged also in previous paragraph in regard to the fact that the SEE area seems not to be homogeneous. Subsequently, the goals pursued by cluster policies differ across regions. This aspect is also underlined in the "Aggregate Report on Foresight Analyses": "(...) a certain East West divide may be noticed (...) showing the difference in the cluster development level". The same report explains how this gap affects the identification of development opportunity. As a matter of fact, Italian and Austrian regions focus their attention on "smart specialisation and individuate threats in lack of critical mass and low level of R&D investment". On the other hand, the Eastern regions look for internalisation process and public funds use and are preoccupied for the deepening of the "economic crisis and an unsustainable financing model". Concerns about funds and their more appropriate expenditure are a common issue, though.

Moreover, and in accordance with the previous document analysed, in the interviewed regions part of countries like Italy and Austria, clusters are well developed and the cluster policy issues are more related to the fund regulation, international/interregional collaboration among traditional cluster and KETs cluster and new technology firms, in order to meet the Smart Specialisation, sustainability and to be more competitive in a global market.

For instance, Emilia Romagna respondent (R6), with regard to criteria 63 (*The role of clusters and cluster policy with regard to the setting up of smart specialisation strategies*), explains that regional economy is strongly based on large consolidate clusters and that there is also the presence of innovative ones, with a spontaneous "cross fertilisation process" between clusters. It is also underlined how a consolidate policy can support the collaboration among SMEs and research & innovation centres. Moreover, it is seen as an opportunity to support research and reinforce emerging clusters with high innovative potential, strengthening collaborations between complementary clusters in European.

Other countries, in which the cluster policy is at an early stage, are rather focused on developing the clusters, increasing the awareness of its presence in firms and institutions at both local and international level and are focused on learning from best practices. This is the example of both the Greek and the Albanian regions interviewed, as emerges from some relevant sentences reported below, which explains that at both national and regional level their countries are now facing the "initial phase" of cluster development and support the main goals of cluster policy.

(R3, criteria 3): *“Cluster policy concentrates on the initial phase of cluster development.”*

(R3, criteria 27): *“willingness to develop further the cluster policies.”*

(R3, criteria 15): *“We have planned to organize more workshops in different cities in Albania to promote the cluster concept and benefits, share best experiences and development/growth.”*

(R3, criteria 1): *“We have started implementing the cluster program according to the Albanian national strategy, organized workshops and round tables with related stakeholders. But it is in the initial phase. We need to assess the priority sectors that have innovation and internationalization potential.”*

(R3, criteria 29): *“Learn from best practice of management and implement accordingly.”*

(R14, criteria 1): *“Since cluster policies at regional and national level are at a very early stage policies could be formed according to best practices developed by other countries”*

(R3, criteria 29.1): *“participate in activities and presentations of successful clusters.”*

Finally, there are countries, such as Romania, characterized by clusters with different development stages and different objectives in terms of cluster policies. Most of the Romanian clusters has passed the generation phase and their policies and actions are focused on supporting the intra- and inter-cluster cooperation. In addition, other newly-established clusters also exist and they require to be supported by policies with different goals.

(R2, criteria 14): *“Most of RO clusters have passed the generation phase. They are facing now the challenge of developing the intra and inter cluster cooperation, both Business to Business and Cluster to Cluster. Recently, the Ministry of Economy has identified 2 main cross-sector cluster development directions at national level, i.e. “technical textiles” (...) and “green technologies” (...). 5 out of 6 clusters in Region NE deal with the first topic: (...). The strengthening of ties between the above mentioned clusters at regional and national level represent an opportunity in increasing the regional economic competitiveness”.*

## **C.2. IMPORTANCE OF TRAINING**

Another important aspect highlighted by several respondents is the importance of training the personnel of clusters' firms and organisation, in order to have employees capable to cover their role at best in a fast changing environment. This aspect has been underlined also in the *“Aggregate Report on Foresight Analyses”* where it is explained that: *“(…) almost all regions identified the quality of existing human resources as one of the strongest points (RO, GR, SRB, HR, IT)”*.

The importance of training activities is advocated for both the personnel of cluster management organisations and for cluster companies' employees.



### **C.2.1. Improving human capital of firms belonging to clusters**

The importance to improve the level of human capital across the firms belonging to clusters is made clear by several respondents, and it is an objective that has to be pursued at regional level rather than just at cluster level. To be able to compete in an international environment and/or to apply new technologies and methods, clusters need to count on skilled workforce. Consequently, policies aimed to support and develop clusters employees abilities and prepare high skilled managers are considered essentials to increase clusters' results.

In the example below, the Italian Marche Region (R7) defines human capital as a key priority in the regional policy, with the potential to increase R&D activities and explains which steps have been taken on a regional level to achieve this goal:

(R7, criteria 17): *“The human capital is a key priority in regional policy: in order to fill the regional gap towards R&D activities (low level of R&D in regional context) regional actions aims at increasing the qualification of human resources through VOCATIONAL TRAINING fitting with enterprises' development needs and HIGH EDUCATION focusing on technology development. E.g. in our region I.T.S. - TECHNICAL INSTITUTE FOR FASHION AND SHOES SECTORS - "New technologies for the made in Italy" was established in order to increase innovation, R&D in a regional traditional manufacturing district (shoes/fashion). Another example of regional action: the "AGENT FOR CHANGE AND DEVELOPMENT" was developed and tested - a professional figure aimed at detecting enterprises' training needs. A professional figure with knowledge and competences to support innovation within enterprises/clusters linking TRAINING ACTIVITIES TO THE EVOLUTION OF THE ENTERPRISES ORGANIZATIONAL STRUCTURES with the strategic goal to support the adaptation of the regional productive sectors to the new dynamics of the global markets.”*

Also the Serbian respondent from Srem region (R21) affirms that the support of human capital is fundamental.

(R21, criteria 17): *“Support of human capital to the cluster companies is substantial.”*

In several regions the level of human capital is considered a weakness of the regional and cluster system. Some respondents see the lack of investments or the implementation delays as a weakness and a threat for the clusters future sustainability. This problem regards employees at all levels, even at the top management one. Many respondents underline the need to invest on these aspects, ask for additional funds and for developing specific programs, advocating the importance to deepen the collaboration with universities to improve the competences of both current and future employees. Below are reported sentences by the Romanian (R2), Bulgarian (R15), Slovakian (R11) and Croatian (R24 & R25) respondents on such a problem both at the cluster and regional level:

(R2, criteria 18): *“Labour force has been identified as a main problem in all RO clusters. Analyses conducted on three vectors: quantity, quality and qualification revealed several problems out which following are to be emphasized:*

*(1) the lack of practical skills of the university graduates due to the hyper theoretical educational system; and*

*(2) lack of relevant qualification of skilled workers leading in supplementary qualification costs at the level of the enterprise. At a closer look to the industrial structure of the NE Region, one finds a concentration on low-skill, low-tech sectors including textiles, food, wood and metal products. Only machinery and equipment within the region can be considered high-intermediate tech. Failing in shaping concrete programmes which should ease the integration of graduates on the labour market will result in further competitiveness losses.”*

(R15, criteria 17): *“Negligible extent of support to the availability of human capital to the cluster. There are no specific programs and measures aimed in this area.”*

(R11, criteria 59): *“Low number of human resources. Because of financial reasons EnKS cannot afford to employ more human resources. Clusters funding legislation in Slovakia is still not solved in any way, which is a considerable handicap in this area.”*

(R24, criteria 17): *“Extent of support in the context of the available human capital is the weak point of cluster development in Croatia”*

(R25, criteria 17): *“Availability of proper human capital in Croatia is a major issue.” “If this issue is not properly addressed by authorized institution, all other efforts regarding cluster policy will be affected.”*

Various countries highlight that the “brain drain” problem also results in the lack of skilled employees available. This problem does not seem to be related to the cluster development itself. Some respondents connect this issue with the economic crisis and with the lack or low number of job offers available in the region/country and also to the missing of careers programs. They also underline the threat related to the fact that, when skilled employees move abroad and start a career there, they may decide to not come back. The sentences, reported below, respectively by the Albanian (R3), the Austrian (R5) and Croatian (R24) respondents, highlight these various aspects:

(R3, criteria 66): *“Generally, trained staff move to other opportunities, no proper transfer of knowledge or institutional capitalisation”*

(R5, criteria 17): *“Brain drain to Vienna: due to a lack of tertiary level education in Lower Austria young people leave to study in Vienna and often don't come back (lack of adequate jobs, life style, etc.)”*

(R24, criteria 18): *“There are no important programs for career development in Croatia. The best personnel often have their business practice abroad and achieve a career there, which is a great threat to the development of clusters in Croatia, as the professional staff is a cornerstone of any successful organization.”*

However, it has to be underlined that, some countries report to be active in tackling this issues by implementing projects to turn this situation into a more positive one, as reported in the following example from the Istrian Development Agency (R26).

(R26, criteria 17): *“Human capital in Croatia regarding cluster organisation and top management in general is a working progress. There is also a practice of importing top managers from EU countries.”*

### **C.2.2. Improving competences of cluster managers**

The importance of training clusters' personnel for cluster development is clearly explained by the Bulgarian respondent (R15) in the example below.

(R15, criteria 67): *“The decisive competitive advantage for the future is knowledge and competence of managers and employees in the businesses and the supporting organisations of the cluster. Creating sufficient conditions for training of qualified cluster managers cluster allows the development of competitive clusters.”*

The Istrian development agency (R26) also makes a list of the mistakes that managers should avoid, giving a demonstration of the importance of these actors and the impact of their choices:

(R26, criteria 53): *“Common mistakes in financing that cluster managers should avoid are:*

- Incentive funds are not requested in a timely manner*
- Use of Incentives as the main pillar of the financing model*
- Unrealistically low cost estimates*
- Planed finances does not include sufficient liquidity reserve*
- Misjudged budget of external customers*
- Lack of controlling system, etc.”*

Most of the respondents specifically refer to the cluster management aspect as an important topic that, for different reasons, is considered problematic. The lack of trained and competent personnel is seen as a burden and therefore, they ask for the development of programs aiming at training their future cluster managers. In this regard a financial support is often required. The following examples, made by the Bulgarian (R17) and Albanian (R3) respondents, illustrate this perception:

(R17, criteria 66): *“Skills and critical know-how for cluster management are still developing in Bulgaria. There is a relative lack of knowledge and expertise in the field especially when it comes to visionary implementation of policies for optimization and collaboration.”*

(R3, criteria 42): *“Lack of coordination and clear ownership of the cluster management that might negatively influence its development”.*

### **C.2.3. The role of universities and research centres**

As briefly explained in previous paragraphs, some respondents highlight the importance to collaborate with universities and to involve students in the cluster activities as a way out of the problems of low availability of skilled personnel in cluster firms and organisations.

Particular emphasis is given to the creation of training programs aimed at students and to the development of specific university courses capable of responding to the cluster needs. This aspect is connected to the R&D activity because clusters need trained personnel. The Romanian respondent (R2, criteria 18) underlines the gap between university teaching and market needs. Other regions underline the great potential of involving secondary schools, universities and PhD students in the cluster work environment. The following examples, made respectively by the Italian (R6), Albanian (R3), Bulgarian (R4) and Slovakian (R11) respondents help to highlight the aspects explained above:

(R6, criteria 11): *“Promotion of R&D activity in firms, and especially in SMEs, supporting projects involving newly graduates and including collaboration with research centres”.*

(R3, criteria 27.11): *“AIDA is organizing discussions for Observatory, cooperating with business associations and universities that offer PhD studies, toward the actual business needs”.*

(R4, criteria 49): *“The level of the cooperation between academia-industry is very intensive. Almost all clusters created and developed so far, have as members respective universities or departments”.*

(R11, criteria 55): *“Interest from educational institutions (high schools and universities) for training, workshops, seminars in the area of RES using. It is essential in the Trnava region to explain this subject to the general public and to integrate this topic of using renewable energy possibilities into the curriculum or other educational methods. Interest from secondary schools and universities increasingly deepens aiming to bring up a new generation of environmental awareness and creating favourable conditions of production and consumption of electricity. At the same time it is possible to train the experts and specialists in the area who currently absent not only in the Trnava region, but also in Slovakia.”*

### **C.3. IMPORTANCE TO DEVELOP INFRASTRUCTURES**

Many countries highlight how infrastructures may play an important role in cluster policy development as they can offer opportunities to meet other actors, share service and enhance cooperation.

As already explained in the previous paragraphs, in order to have the economic strength to invest in R&D and technological growth, SMEs need to cooperate among themselves and with large firms. In order to achieve this, it is fundamental to create meeting opportunities and provide infrastructures and services. Nevertheless, some respondents underline the low service support and few facilities for small firms.

The Greek region of Central Macedonia (R14) is determined to create local services aimed at supporting the cluster policy. However, they also underline that this service centres have not been implemented yet (R14, criteria 30). Another example is reported by the Italian respondent from Emilia Romagna region (R6, criteria 11), who consider a threat the insufficient/inadequate level of investments in infrastructures, logistics and other related features at a national level. The situation is different in Croatia, a country characterised by high quality of transport and communication infrastructures (refer to R24, below).

Greece (R14, criteria 30) (threat): *“There is no local service centre in the Region that will support cluster policy.”*

Greece (R14, criteria 30) (opportunity): *“There is strong political will to establish in the region a local service centre to support cluster policy”*

(R24, Criteria 21): *“Croatia has a high-quality transport and communication infrastructure”.*

#### **C.4. IMPORTANCE TO DEVELOP AN APPROPRIATE EVALUATION METHODOLOGY**

Several respondents point out that it is necessary to identify and develop an appropriate and efficient evaluation methodology, in order to gain a better understanding about the strategies efficiently implemented and to learn from best practices.

A discrepancy exists amongst the concerned countries also in relation to the levels of development of the methodology used. Lower Austria (R5) is the only region that has already successfully developed a valid evaluation methodology, thanks to the efficient and effective application of a cluster policy. As underlined in the examples below, the application of a well-structured evaluation methodology applied on a regular basis has been essential to efficiently implement best practices or, on the contrary, to end unsuccessful cluster programmes. Moreover, in the second example the same respondent lists some of the “performance indicators” used to monitor the performance.

(R5, criteria 3): *“The Lower Austrian Cluster Programme is a multi-annual programme (2001-2006, 2007-2013, to be continued) that provides support for mapping, developing and implementing cluster initiatives in the region. This long-term commitment of the regional government secures a certain stability and reliability necessary to establish trust and a climate of cooperation. The performance of the cluster initiatives is monitored on a regular basis (two times a year), which allows flexible pro-active measures if a cluster initiative is not performing well - changes in the strategy or even abandoning a cluster initiative.”*

(R5, criteria 7): *“The performance of the cluster initiatives is monitored on a regular basis: performance indicators (number of R&D projects, cooperation rate, involvement in joint qualifications, etc. have to be reported are being discussed with the regional government two times a year. Additional indicators (number of events, press coverage, etc.) have to be reported 4 times a year. Constant monitoring allows flexible reaction, if a cluster is not reaching the targets. Depending on the reasons activities might be changed or the cluster initiative even might be stopped (e.g. the Wellbeing Cluster in 2009).”*

On the contrary, the majority of the countries underline the malfunctioning or absence of an evaluation methodology and identify in the scarcity of measurement the main cause for the lack of effective policies and the impossibility to ask for specific funds.

In some cases, no methodology has been developed nor implemented. This is the case, for example, for the Bulgarian respondent (R4, criteria 7), who explains that no cluster policies talk about evaluation criteria, and for the Greek one (R14, criteria 64), who underlines the absence of mechanisms aimed to identify regional advantages. This is the case especially in countries where clusters and cluster policies are still in their infancy - as indicated by Albania (R3, criteria 7), see below.

(R3, criteria 7): *“Lack of sufficient indicators to measure/evaluate the cluster policy development, financial issues, stakeholders, activities and benefits”*

In other cases, several evaluation mechanisms have been developed, but none of them has been implemented, as in the case by the Romanian respondent (R2) below.

(R2, criteria 70): *“Although several mechanisms of evaluation the effectiveness of cluster policy have been developed over the years none of them is currently set in place.”*

## **D. FINANCE**

To realize and put into practice cluster policies, to support cluster programs, to invest in R&D or in new technologies, to be able to participate in workshops or to build infrastructures to support different actors' connection and, last but not least, to train the cluster workforce, funds are essential, according to respondents. For these reasons, funds availability, their allocation method and options for financial support requests are considered common matters.

The analysis highlights that the provenience and availability of funds is a central concern because often the absence or the limited availability of funds put at risk cluster programs implementation and cluster development itself. Funds used to implement cluster policies and initiatives are both public and private and their availability is heavily affected by the economic crisis. In fact, as some respondents underline, public resources are decreasing due to recession (examples below, from two Slovakian respondents (R10 and R12) and from the Italian region Veneto (R 31), highlight this aspect). With regard to private funds, a respondent underlines the higher difficulties for companies to raise funds from banks.

(R10, R12, criteria 46): *“Non-existing sources of cluster programs funding from the state budget of the Slovak Republic. In the times of crisis Government does not support clusters from the state budget.”*

(R31, criteria 46): *“Considering for the recession, there is a much lower availability of funds at the national and regional level for support industrial policies in general, including cluster activities and Veneto so far has been proficient in looking for other funds, e.g., accessing EU funds. If this capability will not be developed, the overall amount of funds may be too low to support advanced projects.”*

### **D.1.1. PUBLIC FUNDINGS**

At public level various types of funding opportunities exist: local, regional, and national funds. From the analysis of the respondent answers, it seems that the lack of national funds often leads many countries to consider the application to EU programs as a valid alternative to national funds. In the three examples reported below, the Romanian (R2), Slovakian (R12) and Albanian (R3) respondents underline that EU funds are an opportunity for clusters development.

(R2, criteria 59) (Strength): *“RO clusters are mainly based on self-financing, as no national public funding dedicated to clusters has been available so far. They have developed innovative financing schemes, including resort to other easier to access European Programmes (...), ESF programme sect and private contributions from the members.”*

(R12, criteria 46) (Opportunity): *“Sources of cluster programs funding (EU funds and projects). Despite of the unfavourable financial situation Elektroklastar figures in several projects in which co-financing from internal sources of the cluster is not necessary: (...).”*

(R3, criteria 17): *“The Cluster Program within the Albanian Business and Innovation Strategy foresees training and capacity building for staff...”* (Strength) *“... While some EU funds on cluster development can actively support in this direction”* (Opportunity).

The way finances are allocated and the policies behind this allocation are central issues of public funding. The efficient allocation of funds is fundamental to enhance and support clusters development. Respondents suggest that lack of funding may be also linked to the absence of appropriate policies to identify clusters or to the existence of non-appropriate ones. The following examples by the Slovakian (R12) and the Italian Veneto (R31) respondents are interesting cases in point: the Slovakian respondent finds the cause of the lack of funding in the absence of a cluster model, while the second respondent reports of a resource dispersion due to an excessive number of clusters.

(R12, criteria 46): *“Lack of funding. The lack of funding is caused mainly non-existing cluster model of funding from the state budget.”*

(R31, criteria 41): *“(...) Despite the good intentions to enlarge the potential benefits of law also to districts that would have not been identified through a top-down approach, this choice turned out to be a weakness of the law in that it has not been selective, (...) This way funds have been dispersed to fund a very large number of clusters, rather than focusing on those having the real shape of a cluster. Moreover, some districts have not been able to take advantage of this law because they were not organized accordingly, even if they had the shape of cluster.”*

Furthermore, from the respondents' answers it has emerged that policies related to the funding allocation have to take into consideration cluster specificities and differences at cluster development level, the type of activities they are involved in and the characteristics of the regions where they are operating. In relation to that, (see example below) the Austrian (R5), Bulgarian (R4) and Romanian (R2) respondents underline that sometimes funds allocation policies do not take these elements into account as they are elaborated at the national level and, therefore, are not aware of clusters real needs.



(R5, criteria 59) (threat): *“Rigid interpretation of State Aid Rules: cluster initiatives fulfil various tasks ranging from joint market developing to regional innovation development (...) The financing structure of cluster initiatives have to take these different activities into consideration, i.e. public tasks require public funding. Limitations (...) threat public tasks of cluster initiatives.”*

(R4, criteria 23): *“There is only one programme for cluster development. Its financial support is low, and not appropriate for development of experienced clusters. There is no direct financing for cluster members. The SME could apply directly to the OP Competitiveness for financing.”*

(R2, criteria 1): *“It is only in 2008 that the Ministry of Economy started to undertake the first steps in shaping up the cluster policy in Romania. Concerning the financing instruments, a single call for proposals has been launched so far (...). Proposals are still in evaluation.”*

#### **D.1.2. PRIVATE FUNDINGS**

Business angels, venture capitals and FDIs are also considered useful opportunities to support the clusters development. If public funding should improve its allocation system, private funds should pay greater attention to attraction. In the following examples the Romanian (R2), Hungarian (R28) and Bulgarian (R17) respondents well describe the potential high importance of private funding.

(R2, criteria 22): *“The latest study by the Romanian National Bank is indicating Region NE as the least attractive for FDIs (...). There is a positive correlation between the FDI indicator and the regional contribution to the national GDP (...). Thus, clusters have the opportunity of becoming important factors of attracting more FDIs as drivers for economic competitiveness and employment”.*

(R28, criteria 24): *“The ways in which the cluster policy provides support to cluster members in their access to finance: provision of information and support with respect to access of finance and mainly through business angel networks with fostering access to venture capital.*

(R17, criteria 60): *“For the development of the clusters in Bulgaria there is need of furthering the scope of the participation of commercial and public financial institutions for financing clusters. Unfortunately the country has a small market share globally and there is no substantial venture capital funds presented in Bulgaria yet.”*

As outlined by the examples above, private funds attraction is an aspect strictly linked with the national and regional political context and, more in general, with the economic landscape in which the clusters are operating. In fact, a stable political environment is essential to attract foreign investors, establish international relation and, consequently, to organise and to realise efficient and long-term cluster policies, as suggested below. An unstable and unpredictable economic and political environment may threat the cluster development and negatively affect policy implementation.

(R17, criteria 27) (Opportunity): *“The main government role in the cluster policy is to continue providing a stable and predictable economic and political climate, creating favourable law framework conditions for the further development of the economy and keep minimizing the regulatory regimes to improve the business climate in the country.”*

(R15, criteria 27) (Opportunity): *“Stable political environment and banking system in Bulgaria. There are financial instruments for cluster development within the Operational Programme “Competitiveness” funded by EU Structural Funds.”*

(R31, criteria 27.1) *“The instability of the economic and political climate, both at the regional and national levels, could heavily affect the possibility of the new law for ruling clusters and firm’s”*

## **E. SMART SPECIALISATION STRATEGIES**

Development of a well-defined Smart Specialisation Strategy (S3) is mostly considered essential to progress and efficiently implement clusters competitiveness and sustainability. From the participants' responses, it seems that in the regions participating in ClusterPolISEE project, Smart Specialisation Strategies are at different stages of implementation. Some countries are in the process of developing a Smart Specialisation Strategy based on national/regional specificities, while other countries have already developed it, such as the region of Lower Austria. On the one hand, S3 is considered an important tool for clusters to respond to the difficulties that the macroeconomic environment presents; on the other hand, clusters and cluster policies should play an important role in the choice of the Smart Specialisation Strategies. In the following examples respondents from Bulgaria (R4), Serbia (R22) and Hungary (R27) highlight the importance of the role that clusters play in the implementation of Smart Specialisation Strategies.

(R4, criteria 63) (Opportunity): *“Existing active clusters and the Association of Business Clusters in Bulgaria could play significant role in the future smart specialization strategies”.*

(R22, criteria 9): *“There is a possibility of the cluster politics harmonization and taking significant position of clusters regarding to EU strategy-smart specialization”.*

(R27, criteria 63): *“Clusters and cluster policy play an important role in smart specialization strategies”.*

Respondents suggest that traditional clusters should be supported enhancing the research and collaboration with complementary clusters in Europe, while emerging innovative clusters should be supported during their initial phase with the aim to foster their growth and development. To be able to efficiently implement a Smart Specialisation strategy, cluster policy should primarily responds to the necessities related to market environment and to fits the territory vocation and needs. To achieve this goal, the educational system seems to represent an important aspect, as reported by a Croatian respondent (see below).

In order effectively support cluster development, S3 should be developed in strict connection with regional cluster policies, as suggested below by Romanian (R2) and Lower Austria (R5) respondents (see below):

(R2, criteria 63) (Opportunity): *“Currently the Ministry of Education and Research finds itself in the process of developing the smart specialization strategy at national level. An extensive and intensive analysis of the cluster landscape has been performed and included in the preliminary report. "Technical Textiles" (textile -agro food-health-electronics) has been pre identified as a possible smart specialization of the region NE. The integration of clusters as backbones of regional smart specialization represents a strong opportunity for further regional economic development.”*

(R5, criteria 9): *“The Lower Austrian cluster policy is very well integrated in the Regional Innovation Strategy (...), the implementing body EcoPlus is part of the well-defined governance system for innovation support within the region. The cluster initiatives are in line with the region's strategic priorities (innovation, cooperation, sustainability) -> Smart Specialization. There is also a well attuned collaboration between the cluster managements and other innovation support providers (internationalization support services, start-up support services, etc.)”*

(R5, criteria 64): *“Fostering smart specialization through identifying niche markets (e.g. Plastics-Cluster: bio-plastics, smart textiles) and diversifying General Purpose Technologies (IT, material science, bio-tech ...) into the clusters.”*

## **E.1. SUSTAINABILITY**

All the regions analysed consider important to position or reposition their clusters towards sustainable strategies, in line with the S3. Collaboration among various actors is a fundamental step on this path, supporting the development of R&D and the introduction of eco-innovation. Repositioning the cluster is becoming fundamental in times of crisis. A case in point is made by the Lower Austria respondent (R5) who explains how sustainability is a priority of their innovation strategy and that all cluster initiatives focus on eco-innovation. Another example is provided by the Greek respondent from Central Macedonia region (R14): innovation is considered the only way out of the crisis.

(R5, criteria 55): *“Sustainability is a clear priority (...) of the Lower Austrian Innovation Strategy (Economy Strategy 2015). All cluster initiatives address eco-innovation (...).”*

(R14, criteria 23.3): *“Following the financial crisis, the region is redirecting its aims and targets the promotion of innovation as a way out of the crisis.”*



### **3. CONNECTING THE EMERGING ISSUES WITHIN THE 6WG AREAS: THE MODEL**

In the previous chapters the main issues emerged from the analysis have been illustrated and explained with the support of specific examples in order to increase the comprehension of the topics and to highlight the respondents' point of view and necessities, drawing the attention to the similarity and the differences among them.

Based on that analysis, in this chapter we developed a model, reported in Fig. 1, with the purpose to connect the main aspects related to the cluster policy within the 6WG areas and to link them in order to understand which role every aspect plays. In this context, all the elements and actors emerged from the analysis have been considered in relation to the connections existing among them and with regard to the context in which they operate. It is possible to read the model in a clockwise direction, following the order of the 6WG areas. Otherwise, if preferred, the model could be read following the arrows' directions, which show the connections among the various elements.

The central element of the model is the cluster policy, extensively discussed in paragraph C, considering its key role for the clusters' good functioning. The analysis highlighted that cluster policies implemented in SEE regions are rather diverse in terms of goals (C.1), which are strictly connected to the stage of development of the cluster. Common goals regard training aspects (as it will be better discussed with reference to the WG6), the importance to develop suitable infrastructure and to evaluate the projects and initiatives implemented (C.2, C.3, C.4); all aspects contributing to a great extent to the competitiveness of the clusters' members and to foster the well-functioning of clusters as a whole.

As shown in the model, cluster policies impact on all the cluster related aspects (within the six WG areas), but they are also influenced by financial (WG4), regulative and managerial elements. Regulation and authority (discussed in paragraph B) have been included in a ring shape, which encloses the cluster policy feature because, as emerged in previous part of the analysis, authorities actions and the existing regulation have effects on the cluster policy implementation, organisation and evaluation. The choice of the shaded grey colour, which let transpire those of the other parts, have been made because their functioning has repercussion to all the cluster-related aspects. The analysis suggests that it is important that different authorities take part to the development of cluster policy, even if the involvement of an over-number of them may be rather a risk (see paragraph B.1). The key to ensure such a participation, to improve the efficacy and effectiveness of cluster policy in improving clusters' competitiveness, is the coherence between the action of all the authorities involved, at local, national and European level (see paragraph B.2), allowing for the greatest possibilities for the cluster development and a better allocation of funds.

In the following paragraphs, the various aspects related to the cluster policy will be inspected considering the WG areas in which they have been inserted.

**Fig. 1 - The model connecting the elements emerging from the analysis with the 6 WG areas**



**WG1 - Innovation, R&D driving cluster development**

The main elements connecting to WG1 are those linked with intra and inter-cluster cooperation developed in the paragraph A of the second chapter, considered an essential ingredient to enhance innovation and R&D, which drive cluster development. In this regard, the possibility to connect with actors outside of the region and the country is seen as particularly important. As suggested

below such cooperation shall comprise firms (including both, SMEs and large firms) and public or private organisations or research centres entailing advanced knowledge and emerging technologies (including university and research centres but also KIBS, KICs and the like). Other than connecting single actors within the clusters, the analysis highlighted the importance to connect existing clusters with other clusters with complementary specialisations or with institutions entailing technologies that can support the upgrading of the clusters, also improving the competitiveness of its members. The positioning of the “university” box on the border with WG6 (new skills and job creation) is not by chance: universities may indeed be actively involved in the cluster activities (especially in the research field), but they also play an important role in training and forming new and skilled workforce necessary to implement more advanced technologies and recognize new opportunities (WG6).

### ***WG2 - Sustainability through cluster development***

Following the clockwise order, the WG2 area is represented by the green triangle on the bottom, left side.

As highlighted by the respondents’ answers, cluster development is focused on the implementation of eco-innovation and new technologies, but also on the fact of mixing them with available resources (paragraph E.1). This is obtained through cluster cooperation and the development of a new type of clusters (see the light blue arrow from WG1 area). In fact, cluster development is also achieved merging together traditional clusters with a solid experience in a specific field and more innovative clusters or institutions. The clusters sustainability is achieved identifying the resources available at local level and enhanced via the development of new technologies, the exchange of knowledge and the cooperation, in line with the S3 strategy, discussed in paragraph E. Several regions have implemented or are in the process of implementing the Smart Specialisation Strategy, where clusters play a key role. In this way new impulse would eventually be given to their development.

### ***WG3 - International cluster cooperation and networking***

The last sentence brings us to the third WG area, located in the blue triangle on the top, left side.

As discussed in paragraph A.1.2, the international cooperation and networking among clusters (see the light blue arrow from WG1: violet triangle on the bottom) is considered crucial in order to boost clusters competitiveness in global markets and their innovation, thanks to the exchange of knowledge, technology and best practices. The international cluster cooperation also increases the exchange of information (see the arrow leading to WG4: red triangle on the top). Another connection with the WG4 area is represented by the influence that the political and economic environment has on the international collaboration. In this view some respondents underline how political and economic stability impact on cluster attractiveness.

### ***WG4 - Financial framework improvement***

Funds section is collocated in the pink triangle on the top of the model and refers mostly to the discussion reported in paragraph D.

On the right there are public (regional, national, European) or private (mainly FDIs, business angels, venture capitals) funding sources. The first ones are for all clusters, while the second ones



are mostly targeted to single firms. Considering the low resources available at both public and private level, the possibility to access EU funds is considered an important opportunity and an alternative to the scarcity of national funds. The attraction of funds is indeed related to the political and economic stability that also leads to international collaboration opportunities (WG3 International cluster cooperation and networking).

The other main fund topic/issue is the financing of new or existing clusters by financing the implementation of projects or supporting infrastructures for clusters' development. The analysis suggested that the development of an appropriate evaluation methodology is an important tool to be able to clearly outline strategies and cluster structures. As all the other aspects, it is related with the policy and it has an impact on funds' attribution providing information also about cluster related opportunity or funds eligibility (information is an important aspect already mentioned in the previous paragraph: WG3) and supporting eligibility that impacts on the funds' attribution.

The attribution (as explained more in depth in paragraph D.1.1) is a core issue, consequently in the model it has been collocated between funds, regulation & authority and cluster policy. These aspects are also connected through a double pointed arrow because they influence each other. In fact, as underlined in the paragraph D.1.1, funds are needed to implement the cluster policy but on the other hand, the cluster policy, through the regulation and the authorities' action, will allow the fund attribution. Furthermore as underlined from the respondents (see examples reported at section D.1.1.) a prudent funds' attribution is essential to invest in the most efficient and effective manner, considering differences and necessities.

### ***WG5 - Cluster and regional specialisation***

The light green triangle on the top, right side, comprises the aspects emerging from the analysis that connect with the cluster and regional specialisation topic, developed extensively within the paragraph B.2.

The regional specialisation is considered an essential aspect and it represents a strength for the cluster development because it takes in consideration the regional specificities and assets. Several respondents suggest that such specificities should be considered while developing cluster policies, so that a strict connection between the national and regional levels needs to be pursued in order not to lose the sight of regional or local specificities or miss important opportunities.

A feature connected to the regional specialisation is the opportunity represented by the collaboration among regional clusters (see the light blue arrow leading to WG1 area).

To the regional specialisation aspect is linked the necessity for specific funds allocation that are essential to enhance cluster development (this topic has been highlighted also in previous section: WG4, and examples related to this issue are reported at paragraph D.1.1.).

Last but not least, because of the importance of specific regional strategies, the need to create specific cluster policies is underlined by respondents as an essential issue (as discussed at B.2 paragraph). In fact, as underlined by some respondents (see also the examples reported at paragraph B.2) due to different reasons (such as the missing of regional leadership or presence of a "top-down" approach), there is a concrete threat of fragmentation, inefficiency and uncertainty about the implementation of cluster policies at regional level, if new specific cluster policies will not be created and coordinated at regional, national and EU level.

### ***WG6 - New skills and job creation***

“New Skills” are needed to be able to deal with the new market environment and its challenges. Furthermore, new technologies and the implementation of innovative applications generate the need for skilled employers.

In fact, as discussed in paragraph C.2, respondents consider important to train personnel which skills needed to be improved both at firm and the cluster level in order to implement cluster capabilities and be able to compete at international level.

At the firm level, skilled workforce has to be able to interact and operate with the new technologies and methodologies. Consequently there is the necessity to train the (current and future) employees and to employ them.

In relation to the workforce preparation, this aspect is connected to the “Job Creation” part. The trained/skilled future employees should have the opportunity to find a job tailored to their skills, or, on the contrary, the threat will be the loss of these important assets useful for future cluster development, leading to the brain drain problem as underlined by several regions (for more detailed information see paragraph C.2.1). To escape this trend or threat, job opportunities have to be implemented through specific policies implementation aimed at enhancing inter/intra cluster and firms collaborations, in the direction of new technologies, R&D and sustainability implementation.

At the cluster level, respondents highlighted the importance of training for personnel working in the cluster managers organisation (CMO), to train and prepare skilled cluster managers that allow CMOs to be effective in finding new opportunities for cluster firms (WG1), attracting external funds (WG4), developing collaborations with other clusters or organisation to develop innovation, the use of new technologies (WG1) and identify new opportunity for international cluster cooperation and networking (WG3).

For these reasons the importance of improving the competences of cluster managers is highlighted by most respondents (at paragraph C.2.2 some examples are reported) that lament the lack of trained personnel and ask for the implementation of specific programs.

Finally, as already underlined in WG1 section, the university and R&D box is collocated between WG1 and WG6, The role of R&D centres and universities is closely connected with the cluster activities, especially concerning the training for the future skilled workforce. As discussed in paragraph C.2.3 some respondents underline the importance to involve students in the cluster activities and of to create specific university courses, in order to respond to clusters necessities.

## **APPENDIX 1 - RESPONDENT'S CODE, ORGANISATION NAME AND COUNTRY.**

<b>CODE</b>	<b>RESPONDENT</b>	<b>COUNTRY</b>
R1	Confindustria Marche - Regional Federation Of Industry	Italy
R2	North East Regional Development Agency	Romania
R3	Albanian Investment Development Agency	Albania
R4	Association Of Business Clusters	Bulgaria
R5	Regional Government Of Lower Austria	Austria
R6	Emilia-Romagna Region	Italy
R7	Marche Region	Italy
R8	Marche Region	Italy
R9	Automotive Cluster – West Slovakia	Slovakia
R10	International Energy Cluster Centrope	Slovakia
R11	Energy Cluster – West Slovakia	Slovakia
R12	Electrotechnical – West Slovakia	Slovakia
R13	West-Transdanubian Regional Development Agency	Hungary
R14	Regional Development Fund	Greece
R15	Bulgarian Small And Medium Enterprises Promotion Agency	Bulgaria
R16	Ministry Of Economy, Energy And Tourism	Bulgaria
R17	Council Of Ministers Of Bulgaria	Bulgaria
R18	Pannon Business Network Association	Hungary
R19	Administration Of The President Of The Republic Of Bulgaria	Bulgaria
R20	Confindustria Marche – Regional Federation Of Industry	Italy
R21	Association For Competitiveness Improvement Of Metal Sector In Srem Region	Serbia
R22	University Of Novi Sad - Centre For Competitiveness And Cluster Development	Serbia
R23	Agency For Local Economic Development Of Temrin Municipality	Serbia
R24	Ministry Of Economy	Croatia
R25	Ministry Of Entrepreneurships And Crafts	Croatia
R26	Istrian Development Agency	Croatia
R27	Office For National Economic Planning	Hungary
R28	Vas County Authority General Assembly	Hungary
R29	Maribor Development Agency - Energy Optimised Construction Cluster	Slovenia
R30	Chamber of Commerce and Industry of Slovenia	Slovenia
R31	Veneto Region	Italy

The code refers to the “ClusterPoliSEE SWOT Final Report”.

To match the Respondent name with the output, the information will be found in the section WP AREA (4.3) in the “ClusterpoliSEEPortal” platform:

<http://www.clusterpolisees3.eu/ClusterpoliSEEPortal/>

## **APPENDIX 2 - RESPONDENT'S ANSWER CONSIDERED BY COUNTRY OF ORIGIN.**

ITALY		
RESPONDENT	CRITERIA CHOSEN	MAIN TOPICS
		<b>AUTHORITIES INVOLVEMENT, POLICIES AND CLUSTER DEVELOPMENT</b>
R1, R20, R31	4	"Guarino's Decree" do not fit with the regional necessities. It is seen as a threat and a weakness. Need for laws able to valorise the regional specialisation through regional policies.
R1, R20, R31	70,71	Policy makers have to take in consideration external condition (as globalisation) to be able to provide effective cluster development and networking policies.
R1, R20, R31	1, 15, 34	Regional policy proposes a new approach for regional district support and development (Veneto: law 285/2013). Law may be less effective if too many/few firms apply for funds.
R31	41, 64	Even if the importance of Industrial districts has been recognized by the law, there is the need for a clearer definition of clusters and IDs to avoid funds dispersion.
R1, R7, R20	50	Intermediaries in the cluster policies create fragmentation, misunderstandings and are not effective.
R1, R7, R20	10, 27, 27.9	National level policy to map and analyse the Italian regional districts and to integrate research/training/innovation through the support of the national technology cluster development. This represents an opportunity for new national cluster collaboration and for regional cluster improvement. Promotion of R&D in technological and productive chain. R&D is seen as an important supporting policy.
R1, R7, R20	12, 49	Regional policies activate industry and academy collaboration to work on cluster policies respondent to industries requirements.
R1, R7, R20	12, 49	Regional planning to connect industry/university and to improve cluster competitiveness has been implemented.
R6, R7, R8	11, 20, 21	Regional policy for physical infrastructure needs to be improved. Lack of regional physical infrastructure, especially for SMEs.
R7	25	Internationalisation policies to support regional clusters increase the internationalisation competitiveness of large and medium enterprises and the international cooperation. They have to look at new markets.
R8	1	Started 40 years ago.
R8, R31	9, 15	Loose correlation between regional innovation and cluster policy. Current laws don't support inter-cluster innovation, especially in relation to innovation projects or the cooperation with other actors outside of the region.
R8	13	Few linking industry academy. Low development of specialized research facilities.
R8	75	Government role in manufacturing and artisan business is positive.
R8	69	Creative industries should be supported to foster the main regional assets.
R31	2	Cluster policy have a large impact because cluster play a key role in the region.
R31	27.1	Instability of economic and political climate is a threat.

R31	27.11	Cooperation with university and research centres should be improved (more timely, cooperation on advanced projects).
R31	29.3	It is considered an opportunity the international cooperation, especially within Europe to complement the existing knowledge stock. This could be obtained also with the participation to EU programmes.
<b>FUNDS ISSUE</b>		
R6, R7, R8	8	Non-sufficient incentives and services to support technological development, R&D and to support SMEs internationalisation. The new program will be focused on that.
R1, R7, R20	10, 27, 27.9	Financial support that enhance the collaboration between research actors and enterprises without intermediaries.
R31	46	Low regional and national funds need to access to EU funds.
<b>MANAGEMENT AND PERSONNEL</b>		
R6, R7	11, 17	Human capital is a key priority in regional policy to fill the gap toward R&D activities and focusing on regional development. Increasing qualification of human resources.
R7	72, 28.2	Regional entrepreneurs are traditionally reluctant to any form of integration and this could mean a threat for cluster policy effectiveness. The regional context must be considered as a whole. It has to be increased international competitiveness of entrepreneurs.
R6	11	Low use of ICTs (advanced), insufficient investments in training and research.
R6	11, 17	Increasing cooperation between region, academy and SMEs for R&D.
R6	14	Low managerial capabilities.
R6	14	High specialisation, innovation, quality and dynamism of SMEs' entrepreneurs.
R6	63	The smart specialisation strategy is focused on emerging innovative clusters working with research and innovation centres and with complementary clusters in the European region.
R31	2	Presence of specialized workforce.
R31	43	CMOs represent a weakness, not all districts have one and they should be more focused toward the outside rather than to the inside of the cluster.

SLOVAKIA		
RESPONDENT	CRITERIA CHOSEN	MAIN TOPICS
		<b>AUTHORITIES INVOLVEMENT, POLICIES AND CLUSTER DEVELOPMENT</b>
R9	1	Absence of cluster policy regulation.
R9	29.5, 29.8	Agreements with international EU partner. Strong international co-operation project to improve innovation (Automotive cluster).
R9	42	There is not visible cluster support from the state and consequently from large enterprises.
R9	42	Clusters have increased quickly their members (Automotive, SMEs).
R11, R12	42	Low number of members. Low interest in participation in the cluster, only interest for consulting services.
R10	28.1, 42	Strong international cooperation with Austria (first international cluster in renewable energy sources - RES created between Austria and Slovakia). It has a strong interaction with universities and secondary schools.
		<b>FUNDS ISSUE</b>
R9, R10, R11, R12	46	Lack of Funding. No State funding for clusters. Opportunities come from EU funds.
R10	59	Lack of cluster funding, model of self-financing strategy.
		<b>MANAGEMENT AND PERSONNEL</b>
R9, R11, R12	66	Existing know-how and experience. (Auto cluster is working to improve quality of human resources and technological innovation).
R10, R11	55, 59	Low number of human resources due to lack of funding.
R10, R11	55	Low RES awareness lead to high prices for equipment and lack of education.
R12	66	Increased need for trained and skilled workforce.
R11, R12	55,66	Increased need for R&D and use of new technologies.
R11	54	Key objective is use of renewable energy (correlation with agricultural production).

HUNGARIA		
RESPONDENT	CRITERIA CHOSEN	MAIN TOPICS
		<b>AUTHORITIES INVOLVEMENT, POLICIES AND CLUSTER DEVELOPMENT</b>
R13, R27, R28	70	Weak evaluation and measurement of policy effectiveness.
R27, R28	1, 2, 6, 7	Cluster policy is not well developed as western countries and at regional level is a weakness.
R27, R28	4, 5	Excellent personal skills of the persons behind the cluster policy.
R18, R27, R28	9, 11	Correlation between regional R&D and cluster policy is moderate (should be improved).
R27	40	R&D involvement in cluster programs is low.
R27	16, 27.4	Enterprise cooperation and networking favoured by cluster policy, government is raising awareness on the benefits from cooperation and networking.
R13, R28	14, 15	Cluster policy support to networking and partnership is negligible to moderate.
R18, R28	21, 33	Technology and business parks and innovation are an opportunity.
R18, R27	26, 27.3	Low support from public authorities (is essential but very limited), which should foster cluster development.
R27	27.1	Instability of economic and political climate is a threat.
R27	27.9	Collaborative research programs are seen as an opportunity.
R27	27.11	Universities and research institutions should be flexible accordingly with the need of the industry.
R18, R27	28.1, 28.2, 28.3, 28.4, 31	Internationalisation strategy in cluster policy is a strength and an opportunity.
R18	16, 38	Focus on business and regional development in general is a strength.
R18	20	Cluster policies physical infrastructure is very low.
R27	69	Cluster policy should focus more on emerging industries, traditional industries will not be competitive in the future.
R18	22	Cluster policy strongly support large firms.
		<b>FUNDS ISSUE</b>
R13, R28	46	Financing are largely coming from EU projects.
R28	24	Access to venture capital and business angels networks are opportunities.
R18	23, 25	Access to finance and funding provided by cluster policy is moderate.
		<b>MANAGEMENT AND PERSONNEL</b>
R28	18	Cluster policy provide support to development of human capital through educational programs and vocational training.
R27	66, 67	Cluster management skills should be developed, courses and training are opportunities.
R18	17	support of availability of human capital is moderate.

SERBIA		
RESPONDENT	CRITERIA CHOSEN	MAIN TOPICS
		<b>AUTHORITIES INVOLVEMENT, POLICIES AND CLUSTER DEVELOPMENT</b>
R21, R22, R23	2	Existing strategy for cluster development at National and Regional Level.
R21, R22, R23	2	Development of a networking system is seen as an opportunity.
R21, R22, R23	4	There are support mechanisms for cluster policy implementation but they are extremely modest and there is lack of cooperation. Absence at local level.
R21, R23	37, 43	Cluster programs and implementation agencies at national and regional level, but not at local level.
R21, R23	38	Strong regional development policy but industrial policy is a weakness.
R21, R23	5	Change of national, regional or local authorities is seen as a threat.
R21	6	Significant support for cluster policy making from government.
R21	8	Low level of awareness and knowledge regarding the cluster operation models.
R21, R22	9	Low correlation between cluster policies and regional innovation (R22: there are regional strategies, there are opportunities from EU smart specialisation strategies but the level of awareness is low).
R21, R23	13	There is a linking between industry, academy and government with regard to the development of innovative technologies.
R21, R23	14, 15	Cluster policy substantially support networking and partnership (R21: Lack of coordinated actions of different levels of administrative authorities).
R21, R23	21	Regional authorities provide support for business incubators.
R21, R23	21	Lack of transport and communication infrastructures.
R21, R23	22	Initiate supply chain management project could be an opportunity.
R21	25	Cluster policy support the internationalisation of companies in clusters and market research.
R21, R22	26	Poor cooperation and lack of coordination of the activities between regional and local authorities, cluster could become intermediaries.
R21, R22	26	Significant support from the government.
R21, R22, R23	27.4	Knowledge exchange between SMEs and clusters.
R21, R22	34	Clearly defined requirements in coordination and implementation of cluster programmes it is weakened when applied to multidisciplinary and complex clusters.
R21, R23	39, 40	The main target of cluster programmes is business. Low involvement of R&D.
R23	25	Support of internationalisation, market research. Opportunities for joint branding and marketing.
		<b>FUNDS ISSUE</b>
R21, R23	15, 23, 24, 45	Cluster policy provide substantial access to finance for cluster members (and information and support to access finance).
R21, R22, R23	8, 15, 46, 59	Insufficient budget at national and regional level, low level of funding.
R21, R23	41	The support of cluster with no potential is a threat.
R21, R22, R23	44	Cluster program on emerging clusters is a weakness.



R21, R22	59	EU funds could provide opportunities.
		<b>MANAGEMENT AND PERSONNEL</b>
R21, R23	17, 18	Support of human capital to the cluster policies (through cooperation cluster-educational institutions) is substantial, however more investments on human capital are needed.

CROATIA		
RESPONDENT	CRITERIA CHOSEN	MAIN TOPICS
		<b>AUTHORITIES INVOLVEMENT, POLICIES AND CLUSTER DEVELOPMENT</b>
R24, R25, R26	1	Early stage of cluster development policy. Implementation is a slow process.
R24, R25	2	Need for further cluster development.
R26	4	The efforts of ministers responsible for cluster policy implementation are not sufficient.
R26	6	Cluster policy making (focused on innovation capacity and skills) is not enough and lack of concrete development measures.
R24, R25	7	There is insufficient use of evaluation indicators as an instrument for development and promotion of clusters.
R24	8	More coordination is needed between regional and national policies.
R25	8	National policies are supporting cluster development not only financially but also regarding lobbying actions.
R26	8	Incentive methods by the government are insufficient.
R24, R26	9	Loose correlation between regional innovation and cluster policy.
R24, R25, R26	14	Cluster policy provides negligible support to networking and partnership.
R24	18	Brain drain problem.
R25, R26	21	Need for science/technology and business incubators and R&D development.
R24	21	High quality transport and communication infrastructure.
R24	27, 27.12	Bureaucracy is a major problem.
R25	27	Still insufficient new product development.
R24	27.9	Framework programme to support innovation, energy, and information and communication technology is an opportunity.
R24, R25, R26	40, 47	The level of R&D is very low in the cluster programme.
R24, R25, R26	27, 28, 47	Not enough has been done in the area of internationalisation strategy (R24: which lead to lack of competitiveness).
R26	31	Collaboration only for lobbying purposes.
R24, R26	47	Education and development innovation are weak points in the cluster policy.
R24	29.5	Participation to EU programmes is seen as an opportunity.
R24	35	Croatian policy is developing in the direction of promoting regional and sector mobility and increase in labour productivity.
R24, R25, R26	52	Focus on the industrial companies repositioning and restructuring as clusters as cluster competitive at EU level.
R25	52	Recession period is slowing the development.
		<b>FUNDS ISSUE</b>
R24, R25	2	Non-sufficient information about financial options available for clusters.
R24	22, 27	"Non-investment grade" of Croatia prevents new investments.
R24	22	Opportunities could be offered by attracting FDIs, especially in export oriented sectors.
R24	23, 24	Opportunities could be offered by EU funds.
R24, R25	24, 46	Insufficient knowledge of funding opportunities offered by EU could result in

		under-utilisation.
R24	24	There is a network of business angels.
R26	27	Difficulties in attracting new investments.
R26	46	Need to find alternative sources of investments outside of EU funds.
R24	46	Funds provided by government and regional development agencies.
<b>MANAGEMENT AND PERSONNEL</b>		
R26	27.8	Low knowledge exchange resulted in under qualified personnel.
R26	27.11	There are no significant links between educational institutions and enterprises.
R26	53	Cluster managers have to avoiding financial mistakes.
R24, R25, R26	17	Very weak support to the availability of human capital to the cluster companies

SLOVENIA		
RESPONDENT	CRITERIA CHOSEN	MAIN TOPICS
		<b>AUTHORITIES INVOLVEMENT, POLICIES AND CLUSTER DEVELOPMENT</b>
R30	1	Several well developed and experienced clusters.
R30	1	Lack of new clusters initiative, no specific regional or national cluster development programme.
R30	29.5	Many international contacts have been established.
R30	43	No support to cluster policies from national entities (only from some SMEs supporting institutions).
R29, R30	70, 34, 43	No evaluating and measuring programme running on regional or national level.
R29	11, 13	Cluster policies need to be coordinated and implemented in collaboration with key actors.
R29	34, 43	Lack of implementation activities.
R29	34, 43	Poorly managed policies.
R29	34, 43	Known responsibility for implementation. Control over the results. Well managed policies.
		<b>FUNDS ISSUE</b>
R30	29.5	All clusters active in applying for UE funds programmes.
R30	29.5	Lack of pre financing for participation in EU programmes.
R30	46	No specific financing sources for clusters on national and regional level.
R29	11, 13	Strength: Focused RTD funds.
		<b>MANAGEMENT AND PERSONNEL</b>
R30	29.5	Lack of cluster management staff.

BULGARIA		
RESPONDENT	CRITERIA CHOSEN	MAIN TOPICS
		<b>AUTHORITIES INVOLVEMENT, POLICIES AND CLUSTER DEVELOPMENT</b>
R4	2, 3, 4, 6, 13, 27, 28, 40, 44, 45, 47, 49, 54, 55, 58, 61, 70	<p>Necessity of cluster policy revision and government support with specific lows because at the moment the cluster policy and programme is just focused on the cluster creation and financially support is focus on that, while it should be implementing other stages like internationalisation, R&amp;D, eco-innovation, to find key improvement areas, and to enhance the cooperation between industry and academy (that is very intense, though).</p> <p>Need for evaluation methodology.</p> <p>Low correlation between regional policies on innovation and cluster development.</p> <p>Need for supporting infrastructure.</p>
R15	1,6,8,9,25, 28,30,34,40	Initial phase of clustering (1 R15).
R16	1, 28, 44, 14, 70, 20, 71,2	<p>Is in contradiction with what underlined above (1: initial stage R16) ( 2, 44).</p> <p>Importance of internationalisation and cross-border cooperation.</p> <p>Evaluation methodology methods issue (70, 71).</p> <p>Supporting infrastructure seen has on Opportunity for development.</p> <p>Cooperation inter-intra enterprise and networking in cluster policy is seen has a T. (16).</p> <p>Cluster policy has to support but not to substitute the clusters work (2).</p>
R17	1,2,4,6,11, 14,26, 27	<p>Cluster development Initial phase (1).</p> <p>Need for cluster strategy implementation and importance of efficient cluster policy to support best practices' implementation, internalisation, networking.</p> <p>Latent Ministries responsible for the cluster policy implementation is a W.</p> <p>Public Authorities' Relatively limited role in cluster development is a T. Their support should be important (27).</p> <p>Development of a vast technology park is a S.</p>
R19	6, 22, 24, 27.8, 27.12, 28.1, 28.2, 29.5, 30, 34, 42, 43,70	<p>Cluster policy is seen has a strength (6)in R&amp;D too(11).</p> <p>Insufficient regulation to maximize flexible adaptation to changed market conditions.</p> <p>Cooperation between SME &amp; large firms is an O.</p> <p>Methodology inefficiency with not well-defined and standardized measurement system with risk for funds allocations.</p> <p>Lack in cooperation too much individualism.</p> <p>Internationalisation and participation to EU programmes is seen as an opportunity.</p> <p>Lacking in local services centres.</p> <p>lack in coordination and fragmentation in cluster programme even if there are well-rounded group of participants in the cluster debate.</p> <p>lack of coordination and clear ownership of cluster policy.</p>
		<b>FUNDS ISSUE</b>
R4	23, 27, 40, 42, 44, 45,	Need for financial support (low) to sustain new cluster policies, new strategies and cluster members.

	52, 53, 56, 57, 59, 60, 61, 62	At the moment just one programme and not appropriate, consequently there is a limited budget for buying equipment for R&D, international cooperation because it is not supported by the cluster strategies. Opportunity is seen in the Bulgarian participation to European cluster platforms.
R15	27, 46	EU funds for Operational Programme “Competitiveness”. However there is not a focus on promotion and internationalisation. (R15).
R16	36	Budget limits. Lack of private sector participation.
R19	15, 23, 24, 29.5, 46	MODERATE Financial support provided, T are seen in the funds allocation because of the evaluation methodology inefficiency. EU funds for cluster are an (O), however they have to develop self-sustainability methods for their development program.
R17	46, 60	Need of implementing BRIDGE-FINANCING using funds from a few EU, commercial and public financial institution.
		<b>MANAGEMENT AND PERSONNEL</b>
R4	32, 43, 53, 66, 67, 68,	Need for creation of appropriate institution and agencies to better support the cluster policy and strategy. Need for the support of managerial schemes. Negligible support to the availability of human capital to the cluster.
R15	17, 19, 67	Lack of effective measures to improve the professional skills and competences of employees.
R16	1, 44	Long term but flexible support of clusters and cluster management organisations with stable principles is required, looking at different needs.
R17	66, 67	Lack of knowledge and expertise in cluster management, especially for optimisation policies. No sufficient cluster management training programs and generic training.
R19	19	Support employees development, provided.

## **APPENDIX 3 – LIST OF CRITERIA ADOPTED FOR THE SWOT ANALYSIS IN WP 4.3**

**Criteria examples (respondents were allowed to choose a criteria from the list below or to add new ones)**

1. The development stage of the cluster policy (early or initial phase, long-term development, etc.)
2. The significance of the cluster policy at national or regional level
3. The character of the cluster policy (cluster development policies; cluster leveraging policies; cluster facilitating policies)
4. Ministries responsible for cluster policy implementation
5. Persons or organisations behind the cluster policy (individuals, political party, research institute ...)
6. Support to cluster policy making (strategy policy documents; activities of official advisory and consultative forum; policy advisory services)
7. The significance and use of the cluster policy evaluation results
8. Incentive methods employed by the local, regional and national policies for supporting the achievement of key cluster policy objectives (entrepreneurship, SMEs development, employment, territorial cohesion, regional development, international competitiveness, export-led growth, SMEs internationalization, FDI (Foreign Direct Investment) attraction, innovation, science and technology, new technology-based firms, start-ups, sustainable development, rural development)
9. Degree of correlation between regional innovation and cluster policies (strong, moderate, loose)
10. Mode and form of correlation between regional innovation and cluster policies (indirect, direct, simultaneous)
11. Means of linking innovation or R&D policies with cluster policy (development of research infrastructure needed by the clusters; technology transfer activities within cluster; fostering joint projects between research and industry)
12. Areas of correlation between regional innovation and cluster policies (social policy, economic policy, educational policy, institutional policy, regional innovation policy, research policy, industry policy)
13. Cluster policy in the development of innovative technologies (funding for basic and applied research; developing of specialised research facilities; supporting the development of research networks; linking industry- academy-government or developing triple helix concept)
14. Extent to which the cluster policy provides support to networking and partnership (low, negligible, moderate, substantial)
15. The ways in which the cluster policy provides support to networking and partnership (financial support to cluster initiatives; institutionalisation of the network; engaging firms in the strategy building; creating physical focal point for the network e.g. cluster office, house of innovation ...)
16. Stimulating inter - and intra-enterprise cooperation and networking in cluster policy
17. Extent of support to the availability of human capital to the cluster companies (low, negligible, moderate, substantial)
18. The ways in which cluster policy provides support to availability of human capital (fostering the development of specific programmes by existing education providers; supporting the development of internship programmes, vocational training, summer schools; promoting career perspectives within cluster sector; ...)
19. Modes and forms of support to employment and development of employees' competencies in the cluster policy (presence of incentive measures; incentives to individual competency development ...)
20. Extent to which the cluster policy enhances regional physical infrastructure (low, negligible, moderate, substantial)
21. The ways in which the cluster policy provides support to enhance regional physical infrastructure (science, technology and business parks; business incubators; land use policies; transport and communication infrastructure; ...)
22. Cluster policy in respect of securing the presence of large firms (promoting inward investments activities; regional marketing; initiate supply chain management projects)
23. Extent to which the cluster policy provides access to finance for cluster members (low, negligible, moderate, substantial)
24. The ways in which the cluster policy provides support to cluster members in their access to finance (provision of information and support with respect to access of finance; support of public and private R&D funding; innovation funds; support regarding the creation of business angel networks; fostering access to venture capital ...)

25. The ways in which the cluster policy enhances access to markets (support of internationalisation of companies; support of joint branding and marketing; providing information on markets)
26. The significance of the role of support activities of public authorities (fundamental or important role, limited role, no role in supporting clusters)
27. The various roles of the government in the cluster policy
  - 27.1. ... establishing a stable and predictable economic and political climate
  - 27.2. ... creating favourable framework conditions for the smooth and dynamic functioning of markets (infrastructure, competition policy and regulatory reform, provision of strategic information)
  - 27.3. ... creating a context that encourages innovation and upgrading by setting a challenging economic vision for the nation or region
  - 27.4. ... raising awareness of the benefits of knowledge exchange and networking
  - 27.5. ... providing support and appropriate incentive schemes for collaboration and initiating network brokers and intermediaries to bring actors together
  - 27.6. ... acting as a facilitator and moderator of networking and knowledge exchange
  - 27.7. ... acting as a demanding and launching customer when addressing needs
  - 27.8. ... facilitating the informal and formal exchange of knowledge
  - 27.9. ... setting up competitive programmes and projects for collaborative research and development
  - 27.10. ... providing strategic information (technology foresight studies, strategic cluster studies)
  - 27.11. ... ensuring that (public) institutions (especially schools, universities, research institutes) cultivate industry ties
  - 27.12. ... ensuring that rules and regulations maximise flexible adaptation to changed market conditions and stimulate innovation and upgrading processes
28. The components of internationalisation strategy in cluster policies/programmes
  - 28.1. ... to develop internationally competitive sectors and to maximize the international potential of the region's science & innovation and education assets
  - 28.2. ... to increase the international competitiveness of entrepreneurs
  - 28.3. ... to develop the framework for strong research and innovation environments in order to work more systematically and strategically on international challenges
  - 28.4. ... to enable the development of world-class clusters
  - 28.5. ... to create a large pool of international cooperation within the region, to support the intensification of international cooperation among business players
29. The contents of international activities in national/regional cluster policies
  - 29.1. ... organisation of study trips for the regional stakeholders and organisation of trainings for cluster managers
  - 29.2. ... active complementarity between export-oriented policy measures and SME support for international activities, as well as involvement of cluster organisations in activities related to trade development and inward investment
  - 29.3. ... promotion of clusters at international level and intention to support their linking with similar organisations
  - 29.4. ... institutionalisation of cluster evaluation through international panels
  - 29.5. ... participation in EU-programmes and practice of international cooperation at this level
  - 29.6. ... putting of international structures already developed for enterprise support on foreign markets (permanent business missions, commercial attachés, office representatives, etc.) at the disposal of clusters for better targeted support of SMEs
  - 29.7. ... creation of new structures for transnational cooperation in research and development (call for proposals and funding)
  - 29.8. ... signing agreements with peers where international cluster cooperation plays a central role
30. Establishment of local service centres in support of cluster policy
31. Cluster policy focus on joint actions (local labels; common promotion and marketing strategies; shared export information...)
32. Cluster policy focus on joint support of institutions (training, ICT, research and development ...)
33. Cluster policy focus on common infrastructure support (business incubators, quality centres ...)
34. Coordination and implementation of cluster programmes
35. Policy focus in cluster programmes (geographic coverage; cluster lifecycle-oriented; focus on SMEs; interregional focus; R&D focus ...)
36. Number of cluster programmes present in the regional cluster policy
37. Geographic coverage in cluster programmes (national, regional, local)
38. Main policy area in focus of cluster programmes (regional development policy, science and technology policy, industrial policy, mixture)



39. Main target groups of the cluster programmes (business, research institutions, training and education institutions, public authorities, mixture)
40. Level of R&D involvement in cluster programmes (low, medium, high)
41. Selection of clusters in cluster programmes (programmes based on application from clusters, based on top-down or bottom-up selection)
42. Target groups of cluster programmes (businesses, research institutions, educational institutions, public authorities, others)
43. Agencies responsible for the implementation of cluster policy
44. Cluster programmes focus (SMEs, emerging clusters, developed cluster)
45. Cluster programmes offer (financial support, support to knowledge/network development, mix thereof)
46. Financing sources of cluster programmes (national budget, regional budget, EU funds)
47. Key improvement area the cluster policy is addressed to
48. Structure of the cluster policy
49. The level, content, role, and significance of industry-academy cooperation in the cluster policy
50. The position, role and significance of intermediaries in the cluster policy
51. The use of R&D results in innovativeness identified in the cluster policy
52. Sustainability of cluster programmes by ensuring a leadership role in the cluster policy
53. Financial and managerial schemes to achieve sustainability in the cluster policy
54. Development and implementation of eco-innovations in the cluster policy
55. Cluster policy tools in fostering eco-innovation (information, qualification, special calls, collaborative projects)
56. Forms of international cooperation identified in the cluster policy
57. Forms of financing international cooperation and networking identified in the cluster policy
58. Forms of effective and sustainable cluster support in the cluster policy
59. Cluster financing and self-financing models in the cluster policy
60. Commercial and public financial institution participation in financing clusters in the cluster policy
61. The role of and opportunities for Public-Private Partnership (PPP) in financing clusters in the cluster policy
62. New cluster financing tools in the cluster policy
63. The role of clusters and cluster policy with regard to the setting up of smart specialization strategies
64. Cluster policy in defining mechanisms for identifying advantages of regions
65. Status of collaboration with S3 platform in cluster policy
66. Skills and critical know-how for cluster management in cluster policy
67. Training programmes, courses and training for cluster management in the cluster policy
68. Motivation and methods of training in cluster management in the cluster policy
69. New and creative industries in cluster policy
70. Evaluating and measuring cluster policy effectiveness