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Table of Contents

1. INTRODUCTION	3
2. THEORIES IN ACTION: CLUSTERS DEVELOPMENT AS A POLICY INSTRUMENT	5
3. CLUSTERS IDENTIFICATION IN CASE STUDY REGIONS.....	9
3.1. CLUSTER IDENTIFICATION.....	9
3.2. PRESENCE OF CLUSTERS IN CASE STUDY REGIONS	11
4. CLUSTER FORMATION AND DEVELOPMENT	15
4. 1. THE PRECONDITIONS FOR SUCCESS.....	17
4.1.1. <i>Viable market based competitive edge</i>	17
4.1.2. <i>Free information exchange between various stakeholders with common interests</i>	18
4.2. LOOSE CLUSTER TO CLUSTER	21
4.3. CLUSTER FROM SCRATCH	23
4.4. CLUSTER – IS IT THE END OF THE ROAD?	24
4.4.1. <i>Cluster’s development potential</i>	24
4.4.2. <i>Over-dominant clusters</i>	25
4.5. CROSS BORDER INTERNATIONALIZATION OF A CLUSTER	26
5. LESSONS ABOUT CLUSTER POLICIES	28
REFERENCES	33

1. INTRODUCTION

Cluster policies have increasingly important role to play in the academic analysis and policy making related to regional economic development. Interestingly enough there seem to be certain gap between the academic debate and actions on the ground. In academia there is a significant research stream trying to qualify and quantify clusters, to analyse the factors that contribute to their development and success as well as to the internal and external linkages of the companies forming a cluster. Many of these studies are based on the example of one given region and very few aims at comparing empirical data from several regions with various economic and social backgrounds. Another not well covered yet topic is the internationalization of clusters.

This paper tries to contribute by filling exactly this gap. In it the problems of cluster development and more broadly entrepreneurship is discussed based on the evidence from 12 EU border regions with very different backgrounds and levels of economic development. The main question raised is to what extent both entrepreneurs and policy makers are being able to identify clusters, stimulate their formation and development. There are several sub themes emerging from it such as what are the factors fostering and hindering cluster development competition in cross-border areas.

The aims of this paper are threefold:

- 1) to review the evidence of existing and nascent to clusters identified in the 12 case study regions
- 2) assess the role of policy in the development of clusters with a particular accent on the relationship between theory and practice, and
- 3) assess the scope for policy interventions in the observed Case Study Regions designed to promote cluster development

In that way the paper attempts to review how big is the gap between cluster theories and the knowledge, skills and capabilities of entrepreneurs and policy makers in 12 EU border regions. Furthermore through narrowing this gap the paper aims to identify

the bottleneck places in the process of cluster development and offer a concrete set of measures that enable it with an optimal balance of resources, efforts and expected results.

The paper is structured as follows. It starts with a short summary based on a comprehensive literature review, which has been done earlier within the same research project. Then it discusses the problems of clusters identification and presents the results collected in the target regions. Chapter four adds to the discussion of cluster formation and development in the light of the evidence collected in the focus region. A special part of it deals with the issue of cross – border internationalization of clusters. Finally instead the paper concludes with the main lessons that could be extracted based on the collected data.

The latter draws on more than 180 interviews with key informants among regional authorities, business support organizations and local experts and on more than 250 interviews with entrepreneurs and managers from companies operating in the selected border regions. That is a considerable wealth of empirical evidence that is structured around several key themes. One deals with the preconditions for a cluster to be successful. The others deal with various possible scenarios of cluster development.

The concluding part of the article tries not only to summarize the key findings but also suggests several ways to optimize cluster policies as to better fit their overall reason –regional economic development.

2. THEORIES IN ACTION: CLUSTERS DEVELOPMENT AS A POLICY INSTRUMENT

In a global economic environment where one may witness constantly shifting nature of business patterns clustering theories and strategies could be the source for an effective economic development strategy. Economic development policies that target individual firms or industries are arguably no longer the most viable option for many regions. Cluster theories certainly do have their place in studying the competitive potential of regions in general and cross-border regions in particular. A starting point could be to elaborate what makes the difference between national regions and cross-border regions. Evidently it is the existence of a national border but what many scholars do not fully comprehend is that border should be interpreted in its widest possible definition - not only as an obstacle for the free flow of goods, services and labour force but also as linguistic, cultural and social divide between regions.

These obstacles significantly modify the strategies needed to enable and stimulate the development of business networks in general and cluster in particular. While in the context of cross-border regions the identification of potential clusters could be relatively easier handled using the established methods it is their nurturing and development that could be much different due to the border divide in its wider definition.

One principal shortcoming inherent in focusing on cluster development is that the likelihood of success could greatly vary for many regions in general and cross-border regions in particular. A prerequisite to developing a cluster is the identification of regional competitive advantage based on one or many several factors such as labour force characteristics, unique regional attributes, availability and quality of public and private infrastructure, and proximity to input and product markets. Industrialization efforts next must identify the targeted industry/firms and provide the services and infrastructure necessary to ensure that these businesses remain successful. Thus, the designing of an industry cluster program requires an extensive understanding of the region and its economic processes (Barkley and Henry, 2001).

One problematic issue is the availabilities of public officials to either identify regional competitive advantage, select “good” industries/firms to target, or design programs to assist specific sectors. Regional competitive advantage changes over time in response to new technologies, tastes, and institutions. It is a leap of faith to assume that state and local development authorities appreciate regional, national, and international economic processes well enough to accurately assess regional competitive advantage. In addition, the selection of specific targets for industry clusters is problematic because projections of industry-wide growth prospects are notoriously unreliable, growth prospects change over time in response to market forces, and individual firms within an industry may exhibit employment and sales trends counter to that of the industry as a whole (Ibid.).

Research on industry clusters is remarkably consistent in its description of the institutional environment required to nurture and support clusters. Many economists are not optimistic that appropriate institutional arrangements will emerge because cooperative behaviour is limited by incomplete information, opportunistic behaviour, and committed assets. These researchers conclude that a consensus for promoting economic development will occur only when the total gains are expected to be very large, when the distribution of the benefits and costs is quite clear, and when the community can reach agreement on helping those who might be harmed (Ibid.). In the context of cross-border regions this issue is particularly important as trust between communities and business actors could be of short supply.

To justify cluster development efforts, some seeds of a cluster should have already passed a market test. Cluster development initiatives should embrace the pursuit of competitive advantage and specialization rather than simply imitate successful clusters in other locations. This requires building on local sources of uniqueness. By identifying clusters, and understanding specific needs (i.e., infrastructure or work force needs) of the industries within the clusters, planners can build on the existing strengths in the region and provide more appropriate assistance to businesses. It is in this context that experts should identify the industries in which “both sides of the border” have their greatest competitive advantage. These “driver industries” may have the spill over effect to suppliers and customers located in the same region to form industry clusters. Once again a serious question for cross-border regions is the

degree to which the border should diminish this spill over effects. The long-term goals of sustaining the economic vitality of a region can only be achieved through a continuing process in which the clusters themselves become players in contributing to their own growth and supporting continuing improvements in the foundations that support them.

As the combination of clustering studies is rarely combined with cross-border cooperation studies there is significant potential in reviewing and analyzing the specific circumstances and obstacles for cluster development in cross-border regions. One notable exception is the in depth analysis and spatial planning activities in Oresund region between Denmark and Sweden (Hospers, 2004; Jensen and Richardson, 2004, Maskell and Törnqvist, 1999; Sornn-Friese and Sorensen, 2005; The Öresund Committee, 2006).

Both formal and informal networking in cross-border areas is a very important part of cluster development. Informal networks should be established by means of personal contacts, and usually function alongside formal decision paths and institutions. While outsiders find these difficult to identify, they can lead to a dramatic reorganization of traditional and accepted power structures. Formal networks on the other hand do not present a challenge in the same way to old established power structures. They are often created by agreements that are soundly based in established institutions. These agreements and the composition of networks are often well documented.

The formation of clusters in cross-border regions may create a new and enlarged arena for local rivalry. By enabling the sharing of experiences and ideas, the firms, institutions and individuals alike will almost certainly boost their general level of competitiveness. The role of local rivalry is particularly important in the context of learning by firms watching each other within a market. Best practices set by someone who shares the same environment and faces the same challenges are invariably more visible and create more direct pressure to catch up, than 'miracles' achieved by actors in far-away places. The importance and the role of social infrastructure in defining industry clusters is another common pattern found in the literature. Rosenfeld (1996) argues that information flow is essential in an effective industry cluster. However, an information flow will be not possible in the absence of a

developed social infrastructure. Therefore a cluster may be in place but its successful existence or at least its efficiency will be highly dependent on social interaction, trust, and a shared vision.

However for all this to occur and tangible and competitive cross-border clusters to appear the biggest effort should be to diminish the visibility and the overall impact of the border as such. A border, that as discussed above, is comprised by much more than physical barriers. That is why it seems the applicability of cluster theories and strategies in cross-border regions may depend very much on the knowledge and thorough analysis of the particular ways to bring closer all the stakeholders involved in this process at every level: institutional, entrepreneurial, cultural, lingual, academic etc.

3. CLUSTERS IDENTIFICATION IN CASE STUDY REGIONS

As mentioned above the study was carried with a focus on 12 cross border regions and 252 companies. Here is their general profile

Table 3.1: Main characteristics of the interviewed companies

Company age (N)	Field (N)	Ownership (N)	Turnover (N)	Employees (N)	Legal status (N)
Less than a year (4)	Industry (106)	Private (219)	Less than €2 mln (97)	Less than 10 (73)	Sole trader (48)
1-5 years (31)	Services (65)	State owned (4)	€2-€10 million (50)	10-49 (75)	Partnership (12)
5-15 years (78)	Transportation (13)	Mixed (9)	€10-€50 million (25)	50-250 (68)	Limited liability company (109)
Over 15 years (105)	Retail & Distribution (45)	Other (3)	More than €50 million (17)	More than 250 (18)	Joint stock company (52)
	Other (6)				Other (8)

3.1. Cluster Identification

One of the key findings regarding clusters identification and formation is that in most cases both entrepreneurs and governmental officials have had considerable difficulties defining clusters and thus also properly identifying them. Two reasons could be highlighted in this respect. One is that very often the concept of clusters should be somewhat watered down to include much more than what academic literature would describe and qualify as a regional or industrial cluster.

As seen below only one of the regions clearly states not to have any present or potential clusters. Partly this could be explained and indirectly confirmed by the interviews with regional authorities that demonstrate their eagerness to find at least potential clusters and argue in favour of their future development that requires regional development funding. There are several projects in Eastern Estonia under way for the development of clusters, e.g. Phare CBC SPF INNOCLUS - Innovative cluster development in Metal-Machinery-Electronics Sector as well as the project

“EstRuCluster”. It is difficult to evaluate the business viability of such projects or the essence of the cluster ingredient in them. In 2006 In Zgorzelec (Poland) the authorities initiated the actions to create the Bogatynia-Zgorzelec Industrial-Technology Park as a joint initiative between two powerplants (BOT Elektrownia Turów S.A. and BOT KWB Turów S.A.) and the municipal authorities of Zgorzelec district with cooperation of Institution for Management and Self-government from Wrocław. The park aims to create a bio-energy cluster and to contribute to the creation of economic infrastructure and starting business oriented institutions. Its basic aim is to stimulate the economic development by using the financial support from the EU funds (BOT, 2006).

Along these lines there are very few business development initiatives that can not be called clusters. For instance one key informant defined it as *“clusters of enterprises that share the same general goals”* (Key Informant, 2007 Florina).

Another possible misunderstanding deals simply with some quantitative measures. One indicator is the number of interacting companies – group of how many companies could be seen as a cluster? How the critical mass of such group of interacting companies should be measured as to determine if a cluster could be developed or not. Interestingly literature says little about that quantitative aspect of cluster identification. Naturally one factor to account for is the size of one or few of the companies. Another idea could be to also check the size and importance (measured in terms of N of companies or importance for employment or share in Gross Regional Product) and spill over potential of such small company networks.

A good example how size matters could be the way an entrepreneur from South Eastern Estonia describes his vision of clustering activities *“When a bus breaks down, then we take the passengers. And if we have not capacity to fulfil orders, then another firm helps.”* (Southeast Estonia, E04) The local authorities there clearly state that *“There are mostly small enterprises in the region, which are not very actively cooperating. A problem is also that enterprises in the region are rather micro and small enterprises and they lack both human and financial resources to contribute to cooperation.”*

On the premises of the former Biała Podlaska Furniture Factory there exists a concentration of small furniture companies (11 enterprises) together with few other logistics companies. However as 1) they are not functionally interrelated, 2) they are not so many and 3) none of them is considerably big, it is difficult to see a possible cluster formation.

The qualitative dimension is also a serious issue in cluster identification. Quite many of the entrepreneurs review almost any normal “sell-buy” alike business-to-business /b2b/ form of interaction with other companies to be in a way clustering activity. Sometimes that simple b2b interaction may evolve one or few steps further when different companies realize the benefits of various forms of broader cooperation:

“There are cases of cooperation with other companies located in Görlitz in the form of helping each other out with material and special makings. This form of collaboration cannot be called a cluster.” (Görlitz E02).

“A flexible type of clusters, in which the partners are only trying to negotiate all together with the suppliers for a better price.” (Serres E15).

Along the same lines the empirical evidence suggests that there are no ‘clusters’ in the classical understanding of dense local relationships along the value chain but rather loose regional networks of enterprises with similar interests - that may be described as a loose group of companies having various forms of interactions. This may be purchasing group, methods of negotiating the prices of purchased goods, logistics, possibilities of shipping small quantities, negotiations of prices of purchased cars and prices of cell phone operators (Biała Podlaska E01) or subletting customers in cases of not having enough capacity (Hochfranken E05).

3.2. Presence of Clusters in Case Study Regions

The interviews with key informants (authorities, business support organizations etc.) were the key instrument in determining the presence of potential and existing clusters. In order to avoid possible confusion of the interviewee or eventual distortion

of the answer due to suggestive questions the word “cluster” was not used in the interviews. The results are presented in Table 3.2.

Table 3.2: Presence of clusters and potential clusters in focus regions

Country	Region (starting with the economically more prosperous)	Presence of cluster (business field)
Finland	South Karelia	1 present (forestry, pulp and paper) 2 potential (tourism, innovations)
Germany	Hochfranken	2 present (ceramics / porcelain, textile / garment) 4 potential (machine construction, furniture, design, health / wellness / tourism)
Finland	Tornio	1 present (metallurgy) 1 potential (services: shopping & leisure)
Greece	Serres	1 potential (tourism)
Germany	Görlitz	1 present (technology) 2 in formation (food processing, synthetic materials)
Greece	Florina	1 potential (tourism) 1 potential (textile & clothing)
Poland	Zgorzelec	3 potential (textile & clothing, ceramics, eco-energy)
Estonia	Northeast Estonia	3 potential (chemicals, manufacturing, tourism)
Estonia	Southeast Estonia	2 potential (forestry, tourism)
Bulgaria	Petrich	1 potential (textile & clothing)
Poland	Biala Podlaska	1 potential (furniture)
Bulgaria	Kystendil	1 potential (textile & clothing)

Furthermore the companies were also interviewed about their possible involvement in clusters. They provided varying answers to the standard question being phrased *“Is your firm involved in some forms of co-operation with other enterprises operating in the same sector or in inter-related activities in other sectors?”* Here again a balance was sought between the original aim to identify patterns of clustering activities and involvement on one side and trying to avoid distortion of the answer by using the indicative word “cluster”.

Nevertheless the precise wording of the question caused some problem as it gives an opportunity for a wider than intended answer. As a result companies had quite

wide interpretation that was later analyzed and grouped in several different categories as shown in Table 3.3.

Table 3.3: Division of companies according cluster participation patterns

	Cluster as an information exchange	Cluster!	Loose cluster	Misunderstanding a cluster	Negative clustering experience	No clustering activities
Region = Biala-Podlaska	0	1	4	1	0	13
Region = Florina-Edessa-Thessaloniki	1	0	2	2	1	15
Region = Görlitz	0	1	2	4	2	13
Region = Hochfranken	1	1	5	0	1	8
Region = Northeast Estonia	1	2	1	1	0	16
Region = Kyustendil	1	0	3	0	0	16
Region = Petrich	2	1	2	2	0	13
Region = Serres-Drama-Thessaloniki	0	5	2	1	1	13
Region = South East Estonia	4	3	4	5	0	9
Region = South Karelia	4	6	7	0	2	9
Region = Tornio	1	4	3	3	1	7
Region = Zgorzelec	3	2	4	2	0	13
TOTAL:	18	26	39	21	8	145

- *Companies that are not involved in clusters*

There were 145 companies (57, 5% of the total) that were not involved in any type of clusters.

- *Companies participating in a cluster according to its classical definitions*

There were 26 companies (10, 3% of the total) that were part of a cluster in its most classical understanding of interlinked companies.

- *Companies that could be described as participating in loose / potential cluster*

The next two categories emerged in the process of processing the interviews. One of them consists of companies with randomly occurring joint activities. As these are companies that have somewhat sporadic and not really target oriented action they may be qualified as a “*loose / potential cluster*”. There were 39 such companies (15, 5% of the total).

- *Companies sharing information*

Another category consists of 18 companies (7, 1% of the total) that have little interaction with each other but are sharing information or participating in discussions on various issues.

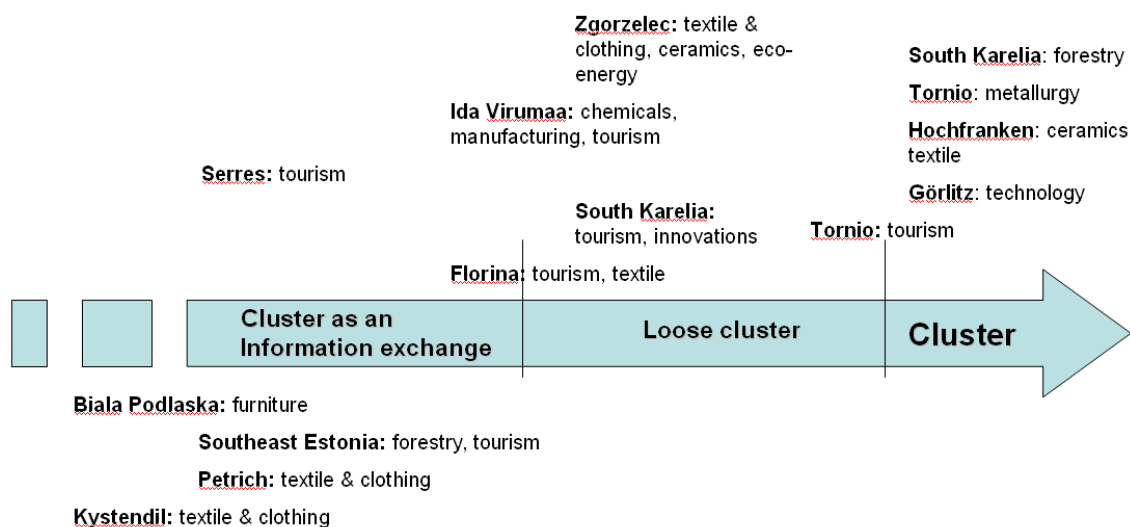
All in all if the latter three categories that include companies sharing information with the companies that moved to the next step, that is sporadically cooperate, and the final group of companies being involved in a cluster their total number would be 83 (32,9% of the total)

Furthermore two categories were added in the course of analyzing the information: companies misunderstanding the clusters concept and companies having negative clustering experience. As the first one yielded all in all 21 companies and the latter 8 companies these two are perceived as sufficient to present a pattern.

4. CLUSTER FORMATION AND DEVELOPMENT

Figure 4.1 illustrates the level of clusters development in the focused regions divided in three broad categories: from cluster as a simple inter-company exchange of information through loose cluster in which companies cooperate randomly to a fully developed cluster.

Figure 4.1: Cluster formation and development in border regions



Clusters form for various reasons but no matter if the cluster was formed 100 years ago or later the underlying reason is some key advantage of the region as forests in South Karelia or raw materials for the porcelain producers in Hochfranken. Furthermore a cluster can be created by the regional authorities or the entrepreneurs where none existed if an advantage is recognized and utilized. The IKEA shop opening in Haparanda generated a considerable inflow of people, which served as the backbone of generating vibrant services cluster in less than four years.

Table four tries to see a correlation pattern between company's age and clustering activities. If the three groups (information exchange, loose cluster and cluster and cluster are united into one) then for companies less than one year old there are two such companies versus three that are reportedly definitely not in clustering activities.

For companies between one and five years old the ratio is 14:18, for companies between five and 15 years old 30:44 and for companies older than 15 years the ratio is 32:67. That may indicate that the younger companies are the more interested they are in participating in clustering activities. One possible explanation is that at early age companies are still insecure in their future and thus, having nothing to loose, more interesting in establishing links and networking. Later as their confidence and stability grows they start being less eager and interested in. Still the mentioned Tornio-Haparanda example to some extent contradicts this as many companies there were established partly due to the opportunities offered by the cluster.

Table 4.1: Correlation between firm age and clustering patterns

	Cluster as an information exchange	Cluster!	Loose cluster	Misunderstanding a cluster	Negative clustering experience	No clustering activities
Firm's Age = Less than a year	1	1	0	0	0	3
Firm's Age = 1-5 years	1	8	5	4	1	18
Firm's Age = 5-15 years	7	8	15	8	4	44
Firm's Age = Over 15 years	8	9	15	8	3	67

In the same way it is interesting to note that the correlation between number of employees (Table 4.1a) and the clustering activities is not very clear. Still the tendency seems to be the smaller the company the more interest in some form of networking that may eventually lead to a cluster evolvement. It is natural provided that big companies become in a way self sufficient being either at the centre of a cluster themselves or not in need to participate in such.

Table 4.1a: Correlation between number of employees and clustering patterns

Current total number of employees of enterprise	Cluster as an information exchange	Cluster!	Loose cluster	Misunderstanding a cluster	Negative clustering experience	No clustering activities
less than 10 employees	4	14	12	5	4	39
10-49	2	6	9	7	4	54
50-250	8	6	13	6	0	42
more than 250	3	1	4	3	0	9

Table 4.1b allows assuming that the bigger the turnover of the company the less likely it is to be involved in clusters. Still while tables 4.1, 4.1a and 4.1b may suggest

that bigger companies have less willingness to involve in clustering activities the evidence might be considered as inconclusive. This attitude could be summarized as “Our enterprise is “free of clusters“, as it is so big and independent that there is no need to participate in a cluster” (Hochfranken E01) Another reason is that big companies may be themselves at the centre of a cluster without perceiving it as such but instead as a simple subcontracting “Collaboration has to turn about, then supplier networks should be established.” (Hochfranken E18) or just admitting to have some ten to twelve suppliers in the region of Görlitz (Görlitz, E12) without seeing cluster potential in it.

Table 4.1b: Correlation between turnover and clustering patterns

Total sales turnover in last 12 months or 2006	Cluster as an information exchange	Cluster!	Loose cluster	Misunderstanding a cluster	Negative clustering experience	No clustering activities
= less than Euro 2 million	5	15	17	7	4	61
= 2-10 million	6	6	8	5	2	28
= 10-50 million	4	0	6	3	0	17
= more than 50 million	1	2	3	3	0	5

4. 1. The Preconditions for Success

4.1.1. Viable market based competitive edge

Perhaps the most important stage of cluster development is to evaluate if the region or industry has a competitive advantage that passes through a market test. Clusters building and development is rich with examples when it was build on the artificial believe of authorities that regional development money may substitute or generate the missing market demand. The temptation is especially strong in the context of the EU enlargement and the development funds targeted to new member states. As a result an unproductive cooperation could occur between authorities and companies that is not targeted to fostering the entrepreneurial advantage of a region but instead aims to build a virtual one needed to apply for funds.

Two examples of top down initiatives are the Digipolis in Tornio and the East-West Competence Centre in Hochfranken. The first is supposed to form a high-tech cluster while the latter aims at boosting connections between companies in Germany and the Czech Republic. Both seem to be examples of supply side interventions that

poorly judged demand or disregarded its weak presence. Still both qualify as modern 21st century initiatives that may receive regional development funding. And, the argument goes further, may stimulate the development of clusters or the internationalization of existing ones.

Another problem is also that enterprises in the region are rather micro and small enterprises and they lack both human and financial resources to contribute to cooperation. Slightly larger enterprises already cooperate on national level. (Southeast Estonia)

4.1.2. Free information exchange between various stakeholders with common interests

The empirical data suggests that nothing helps a cluster form and develop more than a free and open information exchange between various stakeholders interested in the success of their companies and region. It is notable that from point of view of the entrepreneurs the success of their industry in general is somewhat less important and definitely appreciated less than the success of their own company. This most definitely must be accounted when calculating the right strategy to get entrepreneurs on board in an information sharing process aiming to set up the frame for cluster formation and development.

The need for considering the above mentioned is well seen in a key informant report from Eastern Estonia:

“Cooperation between enterprises is at the moment still on the level of meetings and discussions. The entrepreneurs are not yet ready to engage in deeper cooperation. But discussions about the need of cooperation have developed way of thinking and understanding of the need to cooperate, especially when going to foreign market.”

The lack of information exchange is it due to a passive attitude of the authorities or overly sceptical entrepreneurs is also well described by key informant from the Bulgarian region of Petrich:

"Despite geographical concentration of clothing companies, utilization of common technology, utilization of common set of workforce skills their activities are not linked. Usually relations (where existed) are limited and informal based on friendships. For example an entrepreneur helps other to solve accidental problem. This kind of relations does not produce business benefits on regular base. Another type of relations is connected with exchange of information but these seemed to be not important practice."

At the same time in another Bulgarian region Kystendil the need for information exchange is already understood and informants say that

"The existence of cluster-like form of organization has been identified. It comprises about thirty firms from the tailoring branch in the south-west part of Bulgaria. The formation of this cluster began when a Branch organization of textile manufacturers was founded. This organization is created to defend its members' interests and it also makes it possible complex orders to be taken. The idea is firms to have better opportunities for cooperation and help each other with the realization of their production."

One reason for that could be sceptical attitude of the entrepreneurs and sometimes also national mentality. A Greek informant from Florina region explains that:

"...local entrepreneurs (or those involved in agricultural production) do not share a sense of community, but instead prefer to act in an isolated, personal and 'traditional', as they described it, way. Another source in another Greek region (Serres) argues that "...the practice of co-operation is considered by most key informants as not embedded in the Greek mentality; enterprises activating in the same sector tend to view each other as competitors only, which simultaneously rules out any potential for co-operation."

In respect of sharing information it seems that national mentality can be found almost everywhere across the focus regions in six countries. In Estonia *"...the Estonian mentality, which doesn't allow information to be shared easily and cooperation to be made unless there is immediate profit."* (Southeast, E17). Or in Finland where *"The only constraint for collaboration is that as many of the enterprises work in the same sector, some are afraid that too much collaboration could tighten the competition, but in my view the Russian markets are so extensive and continue to grow at such a speed that there is a market for all of us"* (South Karelia E02).

Still undoubtedly some entrepreneurs understand that sharing information and working together brings benefits for all. Another entrepreneur in the same Finnish

region of South Karelia says “...the best member benefit is that we get to know how other people have dealt with their problems and information exchange.” (South Karelia E11). Another entrepreneur from the same region adds “The Club which unites enterprises in the region who are interested in doing business in Russia / CBC has only Finnish companies, small medium and large. The club offers a medium through which entrepreneurs can exchange information and experiences. Some of the members are vertically linked with each other, but we look for synergies and have a complementary / horizontal relationship with the other members. Discussions with colleagues from different firms are very useful; hearing someone else’s thought on the matters always teaches you something new. And I think it is also interesting to tell about our experiences to this forum because someone can benefit from our knowledge.” (South Karelia E14).

Similar initiative exists in the German Hochfranken region where a company “... has organised a kind of 'regulars' table of knowledge", on whose occasion the foremen of the companies meet in one of the factories and exchange knowledge on the working level. The participants talk about the problems each of them had and how they have solved them. Such meetings are intended to take place four times a year. The participating companies do not compete but are able to learn from each other.” (Hochfranken E09). Or in Bulgaria where “In the framework of Expert group, established by the Bulgarian Ministry of Labour and Social Policy and the Bulgarian Association of Textile and Clothing (BATEC). The Expert group members discuss problems of light industry in their meetings aimed at common exchange of information.” (Petrich E03).

Such top down initiatives are very important especially in regions where the companies are small and not united by some professional association, chamber of commerce or another similar organization. Uniting the companies into a group with common interests is not enough. What is equally important is to activate its participants to exchange freely information. That most certainly requires negotiating skills and ability to cut corners and communicate actively the benefits. Otherwise a Greek entrepreneurs witnesses “We participate in a network of tourist firms called “Association of Tourist Agencies”, but it’s practically inactive, because we can’t reach an agreement and jointly promote our common interests.” (Serres E13). Or as in Germany where another interviewee says that:

“The company has loose contacts with other companies located in the region intended to make use of joined and existing marketing channels and platforms but this has not worked out due to differing strategies of the companies.” (Hochfranken E06).

When successful the strategy to convince companies into an information exchange network brings cooperation to the next level. A South Karelian entrepreneur comments *“Yes. We collaborate quite a lot with companies who also serve accommodation services; we have meetings etc. in which we discuss matters relating to our businesses. It is both problem solving and information exchange. The companies in this cluster are all in the same line of business as we, tourism: accommodation services, cruise organizers and companies which organize activities for tourists. We do not all participate in all the activities. The companies are of different sizes, some are large hotels others small micro entrepreneurs.”* (South Karelia E09).

A colleague from the Finnish region of Tornio adds *“We try to market each others services to our contacts if we cannot help the customer ourselves. The services the companies offer are complimentary”* (Tornio, E11). From information exchange to closer cooperation happens also in the Polish Zgorzelec. A local entrepreneur comments:

“Cooperation with carpentry companies from Zgorzelec in the scope of: customers exchange, setting the prices on the same level, exchange of information about companies that do not pay, informing customers in Zgorzelec about companies which produce good doors, windows, stairs etc.” (Zgorzelec E12).

4.2. Loose Cluster to Cluster

As seen above once companies are linked through information exchange they start developing a closer interaction in various complementing fields. This is perhaps when one may say that a loose cluster is formed. To repeat again these loose cluster consists of companies that are competitive as individual companies and serves demand that is not artificial in itself. Shortly both the companies and their industry field are market consistent and competitive. What follows is the need to deepen their cooperation inside the cluster and promote its interests.

The concrete activities that follow information exchange could be very different. It could *“...purchasing group, methods of negotiating the prices of purchased goods, logistics, possibilities of shipping small quantities, negotiations of prices of purchased cars and prices of cell phone operators, marketing, brand building.”* (Biala Podlaska E01). Same is confirmed by a Greek interviewee *“A flexible type of clusters, in which the partners are only trying to negotiate all together with the suppliers for a better price. Together they are able to get better prices, than every single firm could achieve separately”* (Serres, E15).

Or it may involve occasional cooperation as in *“...the IT network of Upper Lusatia. The latter includes about 450 companies, with ca. 830 employees only in Görlitz. The companies specialise and collaborate occasionally and project related.”* (Görlitz E15). Such occasional cooperation happens also in the case of tourism companies in Greek regions and it results in cross-border cooperation networks that are being created in the tourism sector between firms from Bulgaria and Greece- there are several Greek firms cooperate with numerous tourism agencies and hotels from the other side of the borders. It appears to be a dynamic cooperation, which could evolve to a cluster’s formation in the future.

A very natural way to develop the cooperation within cluster is *“In case of capacity overload, the company sublets orders or exchanges production capacities occasionally without a specific contract. While there was formerly rather competition, the companies complement one another now.”* (Hochfranken E05). Similar example could be found in Greece where an entrepreneur reports that *“In the less flexible type of cluster, the partners work together for a specific project. This type of cluster gives them greater power to negotiate and also allows them to complete the project on time. This is very important since many companies are not capable to complete a project on time, therefore in many cases they end up paying fines.”* (Serres, E15).

An interesting example is the feeling of belonging as a unifying factor behind cluster creation and development - belonging to a group or to a territory. Here is an example from Northeastern Estonia *“We can see as a cluster the group of enterprises here on the port territory, which include the port, terminals, enterprise for producing electricity and another one for managing the real estate of the port, also business incubator. This is a group of enterprises residing in one territory, who are very closely connected to each other. We have specialised and thank to that created this kind of synergy”* (Northeastern Estonia, E14).

Another unifying factor could be a common objective like, for instance attracting Russian customers in South Karelia:

“...together with 3-5 other tourism entrepreneurs/companies we try to attract more Russian customers. We have designed and marketed some packages for them that include the cruise, accommodation in cabins or at the Imatra Spa. I am very interested in developing this cluster further – I think it benefits all the members. We could design new, different packages – that to me would seem the best way of developing our business” (South Karelia E05).

Or like belonging to a region and a willingness to develop it further as could be well illustrated in Southeast Estonia:

“A benefit has been first of all that they have started to realize that in tourism it is important to sell a region, it is necessary to sell also the neighbour and neighbour’s neighbour and it is necessary to know what he is doing.” (Southeastern Estonia E01).

4.3. Cluster from Scratch

Within the focus regions Tornio - Haparanda seem to present an interesting example of being very close to creating a cluster from scratch in the area of services with an accent on shopping and leisure. The idea came after IKEA shop opened doors less than two years ago. The estimated number of visitors is some impressive 1, 2 million people per year that by the standards of these not densely populated regions is a significant number. The authorities skilfully recognized the opportunity offered by this inflow of people and decided to stimulate the development of bigger shopping opportunities. That was done by planning and finding an investor for the 13th biggest shopping mall in Finland to be accomplished in 2009.

The shopping mall really contributed to stimulating entrepreneurial activities by offering commercial premises for various shops, restaurants, cafeterias and other services. What comes next is a wide open discussion of how to make the people coming for shopping to stay longer in the area and what services (hotels, restaurants etc.) are needed to make this happen. It makes an impression to see the open mode in which the authorities discuss these opportunities with entrepreneurs and across the border. The level of determination certainly suggests for a successful end result. What is more important is that the fundamentals were interpreted right – the cluster will be built around real life market demand created by an existing inflow of people with sufficient purchase power.

Again it should be stressed that actions were preceded by facilitating a discussion where all interested entrepreneurs may participate and make suggestions and comments. Undoubtedly IKEA made the necessary market research needed to choose Haparanda as an investment site but it was the Haparanda’s authorities that

worked hard to turn IKEA's attention to it. Furthermore it was Tornio's authorities to recognize the opportunity and developed the idea of building a shopping mall on the border in a close cooperation with the Swedish side as well as with entrepreneurs. This is clearly an example of pro-active policy making approach that worked well because it followed and used existing demand instead of trying to create it artificially and because it managed to get all stakeholders discussing the concrete opportunities and needed actions.

That may be not the case in Southeast Estonia where neither agro-tourism nor crafts are presently supported by sufficient demand in terms of number of visitors. In such cases perhaps it is too early to speak about clusters - rather about the need to promote the region and make sure that growing number of visitors is matched by growing number of services to be offered. It is very difficult based on the academic literature to argue if this is a clustering in the classical sense.

4.4. Cluster – is it the End of the Road?

The formation of a cluster does not automatically guarantee its success and consequently the prosperity of the region it operates in. There are several factors and scenarios that should be underlined as a result of the empirical investigation of study regions. Among them should be stressed particularly the problems of cluster's development potential and over-dominant clusters. These two are reviewed into more detail.

4.4.1. Cluster's development potential

Among the focus regions (Kystendil, Petrich, Florina, Zgorzelec, Hochfranken, Northeast Estoniaa) five do have significant textile industry that may be or may be not (depending on how strict a definition is in use) be in the form of a cluster. The problem is to define the development potential of this industry cluster? The answer is important as it may give policy makers the right understanding how much effort and resources should be invested in its nourishing and development.

Textile industry is on a decline across Europe. The industry is perceived to be a victim of globalization because being labour intensive it migrates to low wage places.

That can be also confirmed by the cross-border operations of the Greek textile companies who used labour in Bulgaria, then in Macedonia and lately increasingly in Albania. Eastern Estonia also experienced similar problems as textile industry was growing at the beginning of the 1990s while it is shrinking at present. The problem for policy makers is if the textile cluster is something to be supported and developed even if it is clear that it is a short term opportunity. Based on the example of Greek textile companies one could indeed argue that they are active in a matured industry that does not have visible chances to develop further and grow, hence, policy makers should seek for alternatives. On the other hand, these companies are also able to focus on specific activities, e.g. logistics and management, while relocating the labour-intensive parts of their business to the East (e.g. Ukraine, China). This could further support their growth and they surely need an extended support. Therefore, instead of 'abandoning' this cluster, policy makers could assist its geographical shift, given its significant role for the regional economies. This dimension could be also included in the Life Cycle theory of cluster. Similar argument could be extended to the porcelain cluster in Hochfranken. It is matured industry that does not have visible chances to develop further and grow.

Of course these questions also deal with the perception of timing. For instance the textile cluster may well have 5-10 years before completely losing competitive edge. For the authorities in regions where it is dominant these 5-10 years should be exactly the time to find the next best competitive advantage of the region and develop it into a competitive cluster. For that reasons it is of key importance to be aware of the cluster's life stage.

4.4.2. Over-dominant clusters

The empirical data helped also have a better look at an interesting phenomenon – the over-dominant cluster. Nothing is more vivid than the example of the forestry cluster in South Karelia. Forestry has been the main business in South Karelia for almost 100 years. The business is dominated by three companies. The majority of employment in South Karelia is either in forestry or in the supporting it areas: services, research, logistics etc. Almost all key officials pointed to the cluster as the main reasons of low level of entrepreneurship in South Karelia. The cluster is

simultaneously a reason of regional pride and concern - pride due to its size, international fame and importance for the region; concern about its overwhelming importance and, as mentioned above, life stage.

For there are several factors that make the giant vulnerable. The most important factor is that forestry in South Karelia is largely dependent on raw materials from Russia. As Russia recently changed its export duties for raw wood the very foundations of the forestry cluster were deeply shaken. In a combination with a (perhaps) temporary decline in paper prices the industry is losing competitiveness. If the region would have had more diversified economic structure it would have been easier to offset the consequences. The lesson to be learned is that the authorities should have tried to diversify before the recent problems in the forestry cluster. Furthermore it is important to analyze and choose these industry fields and company groupings that need assistance. The big forestry companies have both the financial and the human potential to develop and grow without much of an external assistance.

4.5. Cross Border Internationalization of a Cluster

The cross-border internationalization of a cluster may follow the above elaborated steps and development phases. Still it involves some essentially new elements: foreign (even if neighbouring) country, different language, different culture and business culture, different business environment, often difficult common history etc. These elements may come in various combinations in which each of them may have big variations of its impact factor. As explained by entrepreneurs *"It's hard to cooperate with Russian firms, they have different way of thinking. It has been relatively good with Estonian competitors, they communicate, exchange information, offer cooperation."* (Northeastern Estonia E09). The theme of *"they are different"* is well covered in the chapter dealing with trust and learning as well as with identity.

The journey of exploring the business opportunities across the border may be initiated in many different ways. It could be that one (often the leading) company in the region made the move and in its cross-border expansion it needs the support of other cluster members who are in turn also forced to internationalize. Or a group of

company may explicitly organize around the idea of exploring and utilizing the business opportunities across the border. Such as the *“South Karelian – Russian Trade Club that organises meeting, presentations on topic that are currently of interest to the members and also field trips.”* (South Karelia E14).

Or again a cross-border interaction could be established as a top bottom initiative as in Zgorzelec *“Yes. We cooperate with construction companies, furniture companies, electric warehouses, concrete companies, we constantly develop cooperation. The cluster is called MTD grupa Polska - Metal, Tworzywo, Drewno (metal, plastics, wood). It was created by Starostwo Powiatowe (local prefecture) in Zgorzelec. It groups about 50 beneficiaries within EQUAL project, small and medium enterprises and is currently being organized. Some foreign trips and fair trips have been organized. We are cooperating with German counterpart of our cluster (TIM 22) which will support us.”* (Zgorzelec, E07). Or as a key informant from Greece explains *“In the framework of the pre-accession instrument PHARE, the Development Enterprise of Razlog, the Municipality of Razlog and the Chamber of Drama have joined their forces in order to set up a support mechanism for the local enterprises activated in the timber sector in the form of a cluster, since this particular industry is very important for both local economies. The actions of this venture evolve around three main axes: the exchange of visits of the participating enterprises in order to achieve efficient communication and familiarise with each other, the dissemination of material aiming at projecting their activities and providing some general information on them and the vocational training of their personnel through joint workshops.”*

One way or another internationalization of the cluster across the border is something to be stimulated as it increases its competitive advantage induces development on both sides of the region. Sometimes however such a cross-border expansion could be perceived negatively by the host country – especially when it creates more competition or puts additional strain on the local labour market. Thus the interests of the cluster have to be matched against the interests of both cross-border regions.

In pursuing this objective it is particularly important to have an all inclusive dialogue from the very beginning. Otherwise as it happened in Hochfranken regional authorities may have ideas, strategies and state policies that do not necessarily match the cross-border realities. According to key informants *“There are hardly any enterprises to be found in the Czech border region with which clusters could be built. It is questionable whether a cross border cluster policy would make sense at all regarding the differing economic*

structures of the two countries.” In this regard, regional experts emphasized that both countries need to develop their border regions also ‘bottom up’ and synergies can only be built in the case of common interests.

5. Lessons about Cluster Policies

The empirical analysis strongly suggests for several key factors that contribute towards more coherent and target based cluster development. The most important are perceived to be as follows:

Potential clusters

- *cluster’s market viability*

In the development of new clusters the most crucial point is to properly evaluate their chances and general market viability. Often such an evaluation should not be exclusively in the hands of regional authorities as the competition for regional development funds may tempt them see clusters where none exist or where there is very little potential for their potential. As mentioned above to justify cluster development efforts, some main parameters of a cluster should have already passed a market test. Cluster development initiatives should embrace the pursuit of competitive advantage and specialization rather than simply imitate successful clusters in other locations. This requires building on local sources of uniqueness. By identifying clusters, and understanding the specific needs (i.e., infrastructure, labour skills etc.) of the industries within the clusters, planners can build on the existing strengths in the region and provide more appropriate assistance to businesses. It is in this context that experts should identify the industries in which “both sides of the border” have theirs its greatest competitive advantage. But what if there are not enough companies as in South-eastern Estonia or the general economic development is not high as in Kystendil region or in Biala Podlaska? Can these regions argue also in favour of developing cluster policies and supporting them financially? Or perhaps it is better to review and re-evaluate their competitive advantages and see what can be developed and how. Regional development does not and should not go necessarily through clusters.

- *cluster's support needs*

For these regions that have the loose networks of companies in one or supplementing each other fields the question is how and what is needed in order to stimulate the formation of cluster and its development and growth. The most important conclusion based on the empirical data is that nothing seems to be more important than uniting them behind common goals, communicating them and creating a free information exchange between companies, policy makers and entrepreneurs. It is precisely the inability of entrepreneurs to outgrow the rivalries and the inability of the authorities to communicate the opportunities that seem to be the biggest among various obstacles preventing company groupings or loose networks start cooperating more intensively for their own good and the good of the region. There seem to be several reasons for that. One is the passive role of regional authorities and business support organizations or their knowledge and professional skills.

The other is the lack of interaction between companies and entrepreneurs on one side and the authorities on the other side. Finally the empirical data confirms that companies need external push and incentives to cooperate more intensively, be it in promoting their business directly or indirectly through promoting the region. Table 5.1 and 5.1a seem to confirm the positive correlation between business organization membership and business support services offered to the formation of clusters / loose clusters or at least a more intensive information exchange. The positive relation between business organization membership and clusters formation is naturally explained as membership as such requires some amount of interaction with other members and assumes some feeling of belonging exists. Thus if the companies exchanging information, having loose cooperation or being in clusters are merged into one group it makes 68, 6% of the all companies being members of some business organization. For the companies not being members this figure is only 29, 6%.

The positive relation is much weaker in the case of regions where business services are offered and where they are not. In Table 5.1a from 154 companies in whose regions business services are offered 48 (31, 2%) were either exchanging information or loosely cooperating or being involved in a cluster. Where business services are not available the same ratio is 25, 6%. It should be noted that the end

result depends much on the ability of business support organizations to play as a negotiator and mediator between the various interests, concerns, rivalries and objectives of the companies in the cluster. Furthermore business services could be offered but still be unused or inaccessible. One issue is that *"these (support) organizations have to inform more about the available support"* (South Karelia E1) because it may happen that *"... there could have been some support mechanisms that we could have utilized,, but at the time we were so busy that we did not have them time to map out such opportunities"* (E18).

Table 5.1

Business organization membership (Total)	Cluster as an information exchange	Cluster	Failing to ally	Loose cluster	Misunderstanding a cluster	Negative cluster experience	No cluster
YES (174)	12	20	10	27	11	8	86
NO (78)	4	5	1	9	7	0	52

Table 5.1a

Business services (Total)	Cluster as an information exchange	Cluster	Failing to ally	Loose cluster	Misunderstanding a cluster	Negative cluster experience	No cluster
Offered (154)	10	16	8	22	12	5	81
Not offered (39)	2	3	2	5	3	3	21

Existing clusters

- clusters development potential

It is very important to keep an expert level independent evaluation on what is the development potential of the cluster in question. The expansion of the Greek textile clusters to Bulgaria first and then to Macedonia is good illustration. As salaries go up it is only question of time when the cluster may start experiencing rapid decline. The relevant question for policy makers is does it pay of to support it and what levels of support are adequate. The same is valid also for regions with traditional clusters as South Karelia (forestry) and Hochfranken (porcelain). There the cluster may be in decline due to external factors such as the Russian wood export excise or not adapting to the globalization trend as in Germany. The authorities must be knowledgeable about the development potential of their cluster and its abilities to adapt in constantly (and rapidly) changing business landscapes. Four – five years may be not much in terms of long terms competitiveness but at a regional level can

give the authorities enough time to check for other regional advantages and start slowly diverting attention and resources from the present cluster to alternatives.

- *support needs of an existing cluster*

An interesting point that could be extracted from the empirical data is that authorities should be willing and able to help the clusters that have the best match between support needs and expected output. The forestry cluster in South Karelia or the metallurgical cluster in Tornio region are powerful and rich enough to be in need of regional aid and assistance. In these cases the role of policy makers is more advisory and monitoring. On the other hand tourism or wine producing in Northern Greece or Hochfranken automobile components need harnessing, attention and resources.

It is again for the regional authorities and business support organizations to decide where and how resources should be mobilized. One compulsory part of the strategy is to set clear priorities that are accepted by most levels of administration and more importantly have the full support of the entrepreneurs. That is not what exactly happened in Hochfranken where regional experts indicated that this cluster policy is not accepted by the enterprises of the region because they have not been involved from the start. That again underlines the key importance to design support policies and measures in a close cooperation with the entrepreneurs and companies involved. Even more target oriented approach could be to have them properly interviewed and questioned as a part of the policies design and further implementation.

- *offsetting the positive negative spill-over of clusters dominance*

Some of the focus regions demonstrate that clusters can become over dominant and thus in a way “suffocate” entrepreneurial development in a region. A typical case is the forestry cluster in South Karelia. It has historical roots and an overwhelming presence that according to most interviews has some significantly negative effect for entrepreneurship development. There are two dangers in this respect. The obvious one is that labour force is attracted to the security provided by big companies while local SMEs are attracted the security and stability of being subcontractors to the big companies. Thus instead of generating entrepreneurial vigour the big companies

diminish it. The second danger is that regional authorities are much less keen to promote entrepreneurship as it is not needed that much. One strong case for policy intervention is diversification of the competitive advantages of the region and checking if efforts and resources could be better channelled into promising areas such as tourism or high-tech (in the case of South Karelia).

These could be considered as the main findings regarding clusters across their entire lifespan – starting with their identification through their harnessing, development and growth and finishing with their decline or sometimes overly dominant position. The findings point to some substantial differences between theories and practice. Theory seems to be biased towards more “*ideal*” cases in which companies cooperate and find a common ground and authorities that skilfully stimulate these processes through various means.

In reality companies are much less willing to cooperate and often serious push is needed to find common interests and goals and communicate them to the various stakeholders. In the real world the authorities are somewhat willing to find clusters where none exist as this may increase their chances to receive additional regional development funds. The generation of open and frank dialogue between companies and authorities and more business support services seem to have big positive impact on the development of clusters.

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