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CLUSTER CONCEPT IN POLICY PLANNING DOCUMENTS: THE CASES OF LATVIA AND NORTHERN CYPRUS

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Abstract. Cluster-based entrepreneurship plays an important role in the economy of the 21st century. A regional cluster can be defined as a combination of 5 dimensions – single sector enterprises that cooperate and compete; supportive enterprises from a wide range of sectors; public and government institutions interested in economic development of the sector and region; other institutions, like research, education, finance and others and the fifth is regional dimension, which combines all four previously mentioned dimensions into one region. From the literature review standpoint, the findings of the authors show that cluster-based entrepreneurship has an important role in stimulating the firm's performance, competitiveness and innovation. Authors' findings show that cluster concept is implemented in the EU policy planning documents at all levels, while in the country level cluster policy is not a single policy issue, but is implemented in industry, regional and other policy aspects. Example from Latvia shows that in recent years cluster-based entrepreneurship plays an important, if not central, role in policy planning documents, while evidence from Northern Cyprus shows that the importance attached to the concept of cluster-based economic development has not yet surfaced in the policy documents. Learning from experience of the EU and Latvia, the authors in cooperation with experts from University of Mediterranean Karpasia suggest policy makers in Northern Cyprus to implement cluster-based entrepreneurship ideas in the policy documents using the bottom-up approach. In this way cluster based entrepreneurship is implemented in policy planning documents in Northern Cyprus at region, industry and national level. This paper is the first attempt towards cluster concept recognition in Northern Cyprus and therefore the topic is opened for further discussions and recommendations. The target audience of this paper is policy makers in Northern Cyprus, as well as academicians and practitioners interested in cluster-based entrepreneurship development.

Keywords: regional clusters, policy planning, regional development, Porter.

JEL Classification: L52, O21, R11.

Introduction

The founder of modern cluster theory, Michael E. Porter (1990, 1998a, 1998b, 1998c, 2000) initially defined a cluster as a group of interconnected industries, while in his later studies the definition was enhanced and a cluster was defined as a geographic concentration of interconnected companies and institutions working in a common field (industry), and the companies are both interrelated and supplementary. Economic theoreticians suggest considering also other indicators when defining a cluster: cooperation links, geographic aspects, product assortments, sizes of companies, etc. According to Knooringa and Meyer-Stamer (1998), a cluster is one of the types of cooperation. Horizontal and vertical cooperation are specific to a cluster (Pachura 2010; Cook 2010). A cluster is a group of geographically close companies (Saxenian 1994) that often produce the same product (Arthur 1990; Sorenson, Audia 2000) and the companies share the same development vision and supportive infrastructure (Cooke, Huggins 2003). A cluster is a system that makes links between the

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private and governmental sector (Shakya 2009). H. Rocha and R. Sternberg (2005) propose three cluster dimensions: geographic co-location (companies are located in one region); a network of cooperative companies (companies have official, social, and economic links among themselves) and a network of cooperative organizations (not only companies are interconnected, but also various governmental and nongovernmental organizations, including educational institutions).

Economic theoreticians outlined several regional cluster dimensions. First, a regional cluster is composed of companies engaged in one industry. A company engaged in one industry is complemented by interconnected companies and institutions, thus forming formal and informal links between companies, governmental institutions, nongovernmental institutions, financial institutions, educational and research institutions, and other institutions (Porter 1998a, 1998b, 1998c, 2000; Saxenian 1994; Shakya 2009; Rocha, Steinberg 2005; Rocha 2004). All the mentioned factors are united by the regional or geographic dimension which ensures that companies and institutions are located geographically close to each other. The geographical aspect is the most important prerequisite in cluster development (Porter 2000; Delgado *et al.* 2010, 2011). The definition of regional cluster arises from the dimensions mentioned by the authors: a regional cluster is a form of informal cooperation and interactions among companies of one industry, in which interconnected and complementary companies, scientific, educational, and governmental institutions and other institutions, located in the same region, are involved (Garanti 2013; Garanti, Zvirbule-Berzina 2013a).

Both economic theoreticians and practitioners and the EU and national institutions concerned are aware of the role of regional clusters, thus economic development based on regional clusters is fostered by means of policy and strategic planning documents at the international, national, and regional level. The authors of the present research review the policy planning processes in two different countries – Latvia and Northern Cyprus. The country context is new and the authors have several reasons for this choice. First, Latvia was a country of the former Soviet Union that regained its independence in 1991 and experienced economic growth since then. After joining the EU in 2004, its economic growth was even faster, besides, the accession to the EU contributed to the ideas of economic growth based on knowledge and clusters that were introduced in policy and strategic planning documents at all the levels within a short period. By addressing the significance of cluster-based economic development in policy planning documents, presently a strong IT cluster has emerged in Riga region and several new clusters (including in the forest, furniture, and food industries) are presently in the stage of early development. While Northern Cyprus, actually is in the infancy stage of cluster-based macroeconomic policy development. There are some efforts to integrate interconnected and complementary industries with very little or no particular outcomes at all.

As a small island economy, Northern Cyprus faces several major challenges in establishing an integrated macroeconomic policy. These include lack of economies of scale, due to being a politically unrecognized region, lack of international access to financial resources and instruments, lack of an understanding and vision to cooperate between companies for strategic level business integration, lack of collaboration between private and public sectors, and a highly fragmented economic structure.

Both Latvia and Northern Cyprus economies are essentially services based. They also share a similar liberalization degree, where the state owned economic enterprises are still active players in some industries.

The aim of the paper is to find evidence and analyze the role of cluster-based entrepreneurship in policy planning documents in Latvia and Northern Cyprus. The following *research objectives* are set up to reach the aim:

- To introduce the regional cluster concept and its role in policy planning in the EU,
- To analyze the role of cluster-based entrepreneurship in policy planning documents in Latvia and Northern Cyprus,
- To develop the framework of cluster concept implementation in policy planning documents in Northern Cyprus.

The *research materials and methods* for the first chapter include monographic studies of wide scientific literature and descriptive, analysis and synthesis methods. The following chapter introduces the role of cluster-based entrepreneurship in the EU based on monographic descriptive, analysis and synthesis methods. In the following chapters, authors work with two comparative case studies from Latvia and Northern Cyprus. After analyzing the documentary framework of cluster policy in Latvia, the authors conclude that the cluster policy plays a significant role in strategic and policy documents; however, clusters in Latvia are in the stage of early development. Further in the research, the authors focus on the issues of cluster-based economic development in Northern Cyprus and conclude that the importance attached to the concept of cluster-based economic development has not yet surfaced in the policy documents and, therefore, no attention is paid to the development of clusters in Northern Cyprus. Thus, the authors worked in cooperation with experts from University of Mediterranean Karpasia, first vocational university in Northern Cyprus, interested in university-industry cooperation. Based on the case study of Latvia, authors and experts put forward several proposals to introduce the cluster concept in the policy documents of Northern Cyprus based on the "bottom-up"

approach. In the result, attention to cluster-based economic development would be paid at both the regional and national level.

1. Regional clusters and policy-making in the EU

The modern cluster theory emerged at the end of the 20th century, and it may be characterized by theoretical and empirical studies regarding a company, its location, and cooperation links with other companies and institutions, and a degree of agglomeration and the effects arising from these factors, yet, the concept of cluster theory emerged in a more ancient history. Special attention has been paid to the location of a company and resources and the geographical and regional aspects of economic activities since the origins of regional economics in the 18th century in works by Adam Smith and David Ricardo. In 1890, Alfred Marshall (2009) analyzed industrial districts in England and came to a conclusion that the concentration of the many small factories engaged in one industry in a certain location is efficient, as in this way small industries gain advantages in competition with large companies. The term cluster was introduced by Porter at the end of the 20th century, yet, Porter and other economists (Porter 1990, 1998a; Hefner 2009) emphasize that Porter was not the introducer of the idea of clusters, as its origins have to be searched for in Alfred Marshall's industrial district theory. The founder of modern cluster theory, E. M. Porter (Porter 1990, 1998a, 1998b, 1998c, 2000, 2003, 2004) together with other economic theoreticians and the founders of cluster schools, G. Becattini (1979, 1989, 1990, 2004), P. Krugman (1991, 1993), P. Cooke (2001) and others again stressed the role of Marshall's industrial district theory, forming it into a regional cluster theory we know nowadays.

Today, clusters are receiving increasing attention, as new studies prove the need for clusters and their role in contributing to an economy. Several directions are outlined in the studies – clusters are examined as the drivers of competition, innovation, and regional development (Garanti, Zvirbule-Berzina 2013b). Clusters enable companies to easily access important resources, reduce transportation costs, and access consumers and labor (Marshall 2009; Porter 2000; Krugman 1991), which, according to several authors (Dumais *et al.* 2002), is the dominant factor nowadays, as well as to reduce transaction costs and access specialized services (Scott 1988, 1994; Scott, Angel 1987), infrastructures, and a competitive business environment (Lin *et al.* 2006), which leads to increases in efficiency and productivity. A company's wish to operate in a cluster may be associated with easier access to information and lower business start-up barriers (Lin *et al.* 2006) and with the existing cooperation links with suppliers and buyers, which facilitates the commercialization of products (Ketels 2003). According to empirical studies performed in the French biotechnology industry (Avenel *et al.* 2005), the Canadian information technology industry (Globerman *et al.* 2007), in the USA in technology-related companies (Maine *et al.* 2010), and in Portuguese regions (Baptista, Preto 2011), a cluster has a positive effect on firm growth.

In economic literature, clusters are mentioned as the drivers of innovation, as they provide the business environment and a network of cooperation among companies, institutions, and educational institutions for the introduction of innovations (Saxenian 1994; Cooke 2001). E. M. Porter (2000) concludes that the companies engaged in a cluster have greater possibilities to quickly predict the wishes of consumers, as the cluster is a network of cooperation not only among companies, but also among consumers. Cooperation among product distributors, researchers, universities, and other parties engaged enable the companies of the cluster to predict and develop new technologies, operational, and distributional possibilities. In the research on biotechnology clusters (Folta *et al.* 2006) researchers confirm that clusters contribute to the ability of a company to introduce patented innovations and to attract partners and private capital. Clusters as a driver of competitiveness appeared in the literature together with Porter's Competitive Advantages of Nations (Porter 1990) in which Porter presents the "diamond model". This model focuses on the competitiveness of companies, which is a group of interconnected factors that interact among each other.

According to R. J. Stimson, R. R. Stough, and B. H. Roberts (2006), nowadays regional clusters are the promoters of regional economic development that are exploited in making regional development policies (Pachura 2010). E. M. Porter, together with his colleagues M. Delgado and S. Stern, in their paper entitled Clusters and Entrepreneurship (Delgado *et al.* 2010) prove that a positive correlation exists between strong regional clusters and business growth, new business creation, and start-up firm survival. In the paper entitled Clusters, Convergence and Economic Performance (Delgado *et al.* 2011), the authors continue their research on the interaction between regional development and regional clusters in two different dimensions: region-industry and region-cluster. As regards the dimension region-industry, the authors reveal that the existence of a cluster in a certain industry ensures the development of the region, which may be measured by such indicators as employment, new business creation, wages, and patenting ability. At the region-cluster level, the authors obtain a confirmation to the fact that a cluster develops faster if it has strong related- and co-located clusters. Thus, regional clusters are an important instrument for stimulating regional development.

Along with theoretical and empirical studies pointing to positive gains from the interaction between the cluster and the region, government institutions also pay attention

to clusters while making their cluster-based economic and industrial policy. Initially created in the USA, the new cluster theory plays a significant role in the EU's strategic development. In the EU member states, several policy documents focus on cluster development that is summarized in Figure 1.

The long-term strategy of EU member states is reflected in the Europe 2020 strategic document. Europe's priority until 2020 is a competitive economy, high employment, and growth that is smart (investment in education, research, innovation), sustainable, and inclusive (focused on job creation and poverty reduction). Smart growth at the regional level (Regional Policy for… n.d.) concentrates on regional clusters' need to stimulate innovation and the region's specialization and identity. According to the Europe 2020 strategy, there are several routes to growth in which cluster formation and development is one of the priorities. The objective of industrial policy (An Integrated Industrial… n.d.) at the EU level is to form smart specialization clusters that are globally strong by means of regional policies, which would reduce the gap between businesses and scientific and research institutions; it is regarded as an essential development aspect from the viewpoint of innovation policy (Innovation Union n.d.). The purpose of developing innovation, science, and research is to turn the EU into the Innovation Union, in which clusters provide infrastructures and cooperation necessary for creating and developing innovations. An essential role in cluster development is also played by free trade and export incentives that allow companies to face no barriers and provide them access to raw materials and resources (Global Europe Competing… n.d.) as well as business incentives that reduce bureaucracy and provide companies access to resources, including financial resources and enhance the business environment (Small Business Act… n.d.). Mergers of companies contribute to an economy, yet, certain mergers and collusions can reduce competition and harm the free market and consumers, therefore, competitiveness policies (EU Competition Law… n.d.) focus on ensuring fair competition.

More detailed strategic objectives that include also the development of clusters are reflected in the EU strategy and action plan for the Baltic region countries for 2007–2013. It is envisaged that shipping, high technology, optical fiber, and tourism clusters will develop in the Baltic region, focusing on regional identity.

Visions for developing regional clusters have been designed at the national, regional, and local levels. In the majority of countries, cluster policy is not a separate element of policy (Pachura 2010; Final report of… n.d.), but a component of various industrial and development policies (Aiginger 2007) at the international, national, regional, and local level (Feser 2005). Based on their monographic study, the authors find that in the EU countries, cluster policies emerged in the result of several policies, as Figure 2 shows.

Cluster policy at the national and regional level in the EU member states emerged in a complex way by including industrial policy, regional development policy, competitiveness and other policies that are presented in Figure 2. While conducting research on the content of cluster policy in the EU member states (Cluster Policy in Europe n.d.), an Oxford researcher group found that in the EU member states, cluster policies target one of the three fields:

1. A cluster development policy that is made to create, mobilize, and strengthen certain clusters,
2. A cluster attraction policy that exploits specific instruments (for instance, subsidies for scientific development) in regional clusters to provide knowledge transfer beyond the cluster as well,
3. A cluster promotion policy that focuses on enhancing the micro-business environment to contribute to the potential establishment of regional clusters.

According to a research performed by S. Barsoumian, A. Severin, and T. Van der Spek (2011) in several EU member states – Germany, Finland, the Netherlands, Austria, Denmark, and Spain – cluster policies were made already before the year 2000. In the period 2000–2005, the Czech Republic, France, Greece, Ireland, Luxembourg, Malta, and

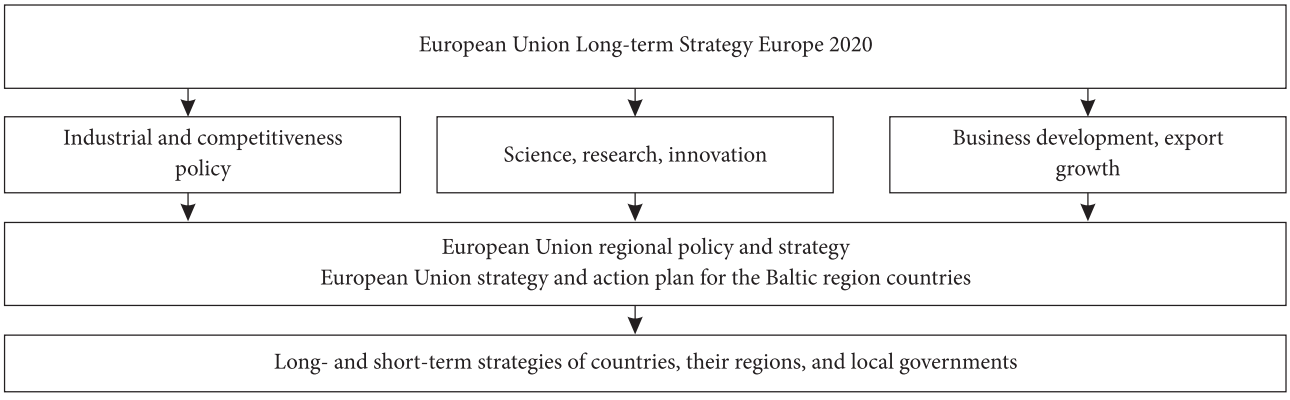

Fig. 1. Cluster policy-making in the European Union (Source: authors' construction based on documentary framework studies)

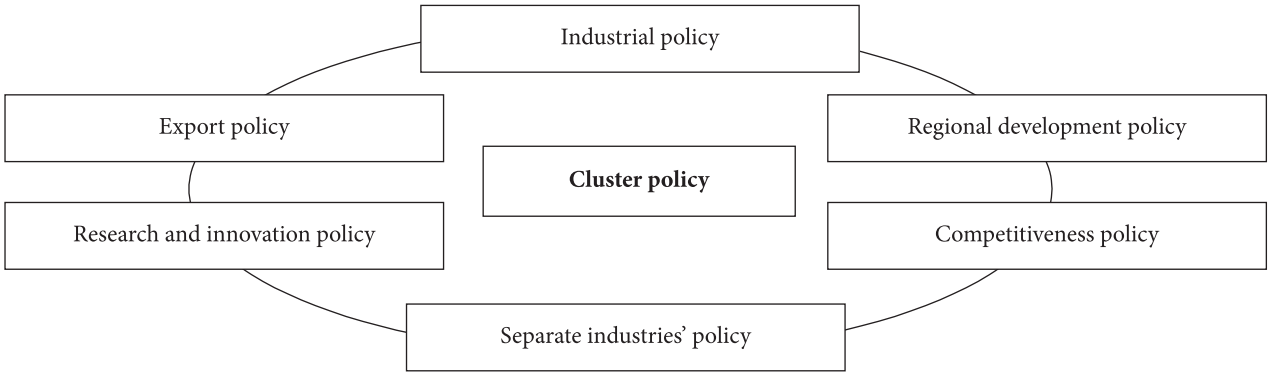

Fig. 2. Schematic depiction of cluster policy-making in several EU member states (Source: authors' construction based on documentary framework studies)

Slovakia started making a cluster policy, while Portugal and the new member states – Latvia, Lithuania, Estonia, Poland, Romania, Bulgaria, etc. – resorted to cluster-based policies.

The origins of cluster policies in the EU member states have to be searched for in Germany where a cluster policy started emerging at the national level in 1995 when the Federal Ministry for Education and Research announced the BioRegio Competition (BioRegio-Wettbewerb) to establish biotechnology-based clusters in several regions of Germany (BioRegions in Germany n.d.) that focus on the concentration of labor, infrastructures, and resources, cooperation among the sectors of research, education, and business, and investment attraction. The Bioregion initiative continued in Germany over the next years, and presently 19 regional clusters in the field of biotechnology are established in Germany, which involve more than 1200 partners. The authors conclude that from the very beginning Germany's policy towards clusters has been focused on initiatives and science-intensive industries. In 2006, too, the government, focusing on high technologies and innovations, launched the "High-tech Strategy for Germany", and since it successfully performed (firm investments in research rose 19% and the number of researchers, their assistants, and laboratory employees increased by 12%), its continuation – the "High-tech Strategy 2020" – was launched in 2010. Within this strategy, the "Leading-Edge Cluster Competition" (n.d.) was launched, which financed at least 5 cluster initiatives in every round, allocating EUR 40 million to each of the clusters for a period up to 5 years to develop regional competences, stimulate cooperation between science and business, and promote innovation and regional growth.

2. Cluster-based economic and industrial policy in Latvia

In Latvia, cluster development problems were addressed after its accession to the EU; due to it, clusters are in the stage of early development. A scheme for making a cluster development policy at the national and regional level is presented in Figure 3.

In Latvia, the regional cluster development policy is not a separate government policy, but it is a result of implementing national, regional, and local development strategies. At the *national level,* the key strategic document is the Sustainable Development Strategy of Latvia until 2030, which proposes Latvia to become one of the EU leaders in the establishment of innovative and export-oriented small and medium enterprises as one of the objectives, thus stimulating the transfer of knowledge and cooperation between science and business. In developing innovative entrepreneurship, the support possibilities of social partners and other nongovernmental organizations should be used more, the activities of clusters, incubators and competence centers should be improved and the mentor movement should be developed. Also infrastructural support for the creation of clusters should be provided in cases when enterprises are ready to cooperate with large companies or participate in the creation of groups of small and medium enterprises. Detailed activities are envisaged in the National Development Plan of Latvia for 2014–2020 and the Strategic Development Plan of Latvia for 2010–2013, which target the development of new cooperation forms for producers, suppliers, and service providers by fostering inter-industrial cooperation, supporting the establishment of industrial clusters and the increasing of competitiveness in export-oriented traditional and new industries producing goods and services in order to raise the competitiveness of Latvia's businessmen.

In 2012, the Ministry of Economics of the Republic of Latvia under the guidance of Daniels Pavļuts elaborated the Guidelines for the National Industrial Policy (n.d.), as the industrial policy in Latvia has not been a priority until now. The policy's elements at the macro-level relate to eliminating market imperfections and increasing competitiveness, while at the micro-level – meeting specific needs of certain sectors and activating regional advantages. Since the industrial policy in Latvia has been designed based, to a great extent,

on E. M. Porter's theory, the development of clusters is a priority contributing to competitiveness, innovation, growth, productivity, and exports. Like the industrial policy, the Program for the Promotion of Business Competitiveness and Innovation 2007–2013 points to clusters as promoters of growth and states that establishing clusters creates an innovative environment for knowledge transfer from domestic scientific institutions (or from abroad) to the sector of real economy, raises the demand of industries for new technologies (innovations) and enables national economic policy measures to be concentrated in a certain segment of the sector. The Program for the Development of Education 2007–2013 and the General Guidelines for the Development of Science and Technology 2007–2013 focus on one of the most essential cluster dimensions – cooperation between educational and research institutions and companies, knowledge and technology transfer, as well as a knowledge-based economy, innovation, and scientific excellence. In the newest versions of these policies that will start functioning in 2014, too, cluster development is the key element.

The development strategies elaborated at the *sectoral level* for the forest industry, the construction industry, the tourism industry, the food industry and other industries have set as priorities the following: technological modernization, development and introduction of science-intensive and innovative technologies and goods or services, knowledge transfer, and cooperation among the economic sectors and national and nongovernmental organizations at the national, regional, and local level.

At the *regional level,* the Regional Development Law sets the balanced and sustainable development of the country and its parts as an objective. The development strategies for the planning regions include more detailed objectives and all the regional policy documents are oriented towards developing regional clusters. The Development Strategy of Riga Planning Region 2000–2020 sets as priorities the development of a knowledge-based and innovative economy, the development of information technologies (IT) and the introduction of innovative technologies by supporting the establishment of clusters – functionally and spatially networked and complementary economic structures. The Development Program of Zemgale Planning Region 2008–2014 sets the development of Zemgale as a region with a developed science-intensive economy and firms producing goods and services of high value-added as one of the guidelines. The possibilities for implementing these visions are based on the support of national and local governments to promote cooperation between scientific institutions and businesses in producing new technologies and products and to foster the development of a network of administrative and public services, research centers, industrial, logistical, technological centers and incubators, as well as industrial zones.

Fig. 3. Framework for a regional cluster development policy in Latvia (Source: authors' construction based on documentary framework studies)

Part I and Part II of the Development Program of Vidzeme Planning Region 2007–2013 sets the raising of competitiveness and the development of innovations as the objectives and cooperation between large national and foreign firms and the establishment of government-supported business clusters as the development possibilities. The vision of the Latgale Strategy 2030 is the "smart Latgale" being based on local universities as a basis of excellence and on the operation of large foreign and local firms and the complementary cooperation of small companies. The Latgale Program 2010–2017 envisages that activities focusing on cooperation between small enterprises, the establishment of clusters and production chains producing goods and services, as well as the development of a knowledge-based economy has to be supported in the region. In Kurzeme region, too, the establishment and development of regional clusters are set as a priority. The Development Strategy of Kurzeme Region is based on a vision that cooperation among businessmen and the emergence of production chains or clusters within an industry will lead to the establishment of associations of businessmen or large companies within the industry. The priority is regional clusters contributing to the competitiveness of local firms and to innovation. In general, the authors conclude that regional clusters and their establishment and development are a priority in the policy documents of national, regional, and local level.

A purposeful cluster-based economic and industrial policy in Latvia results in cluster development programs. In Latvia, regional clusters have been set as a priority in the policy and strategic documents since 2004; yet, the elaboration of an appropriate cluster support program was started in Latvia only in 2008. In 2009, the Cluster Program 2009–2011 financed from the government budget started functioning, which was implemented by the Innovation Division of the Business Competitiveness Department, the Latvian Ministry of Economics. The main activities targeting clusters in this programming period are as follows:

- Preparation of project proposals to take part in SF programs and international cooperation projects,
- Various marketing and information dissemination activities performed by participants of a cluster or clusters,
- Training of participants of clusters in topics urgent for the industry.

In the period 2009–2011, 9 clusters were financially supported in 2009 and 2010 and 7 ones in 2011; the total funding reached almost LVL 560 thousand. In total, 9 clusters received funding during the three year period.

Since 2011, clusters have been supported within ERDF activity 2.3.2.3 "Cluster Program". Its objective is to promote cooperation among unrelated businessmen of an industry, research and educational institutions, and other institutions, thus raising the competitiveness of industries and businessmen, increasing exports, and designing innovations and new products. Projects implemented within this activity are co-financed by the European Regional Development Fund. The activity's total public funding is equal to LVL 3 407 289. Projects may be submitted by societies or foundations whose purpose is to establish cooperation with at least 20 businessmen and at least one educational or research institution.

Although a cluster-based economy is a priority in the policy documents, and since 2008 cluster support programs have been launched, business clusters in Latvia are at the stage of early development. The EU's cluster mapping online platform Cluster Observatory (n.d.) provides a single access point for information and analysis of clusters and cluster policy in Europe. Originally launched in 2007, the Observatory is offering data and analysis on clusters and competitiveness, a cluster library, and a classroom for cluster education and also it produces analysis and reports on regional competitiveness conditions, transnational cluster networks, clusters in emerging industries and studies on best practices in cluster organization. According to Cluster Observatory, there is only one developed cluster in Latvia- IT cluster situated in Riga with 5503 employees in 2011. Other clusters are in early development stage.

3. Cluster-based entrepreneurship in Northern Cyprus

As a small island economy, Northern Cyprus faces several major challenges in establishing an integrated macroeconomic policy. These include; lack of economies of scale, due to being a politically unrecognized region, lack of international access to financial resources and instruments, lack of an understanding and vision to cooperate between companies for strategic level business integration, lack of collaboration between private and public sectors, and a highly fragmented economic structure. To overcome the challenges, Turkish Cypriot policy makers need first to tune the legal environment at the macro-level around the leading sectors, i.e. higher education, tourism, trade and potentially information technologies.

Although being in the infancy stage of cluster-based macroeconomic policy development, the economic policy programs signed between Turkey and Northern Cyprus provides bases for short to medium range cluster-based planning. There are some efforts to integrate interconnected and complementary industries with very little or no particular outcomes at all. The 3-year protocol between the two economies states that Turkey would extend 3 billion USD to the Northern Cyprus in fiscal aid in addition to an extra 300 million USD to support Turkish Cypriot government in public debt management. The latter being only aimed at current accounts, fiscal aid is project-based and has some level of cluster-based view in its nature.

Despite unstable economical and political situation and problems mentioned above, newly established government is looking forward to implement policy planning in Northern Cyprus. For this reason authors, together with experts from the first vocational university in the region – University of Mediterranean Karpasia, worked on recommendations to implement the cluster concept in policy planning documents to ensure economic development in all levels.

Based on experience in Latvia, the authors suggest implementing cluster based entrepreneurship ideas in policy planning in Northern Cyprus using "bottom-up" approach. This approach shows its efficiency in several EU countries including Latvia, meaning that the cluster idea will be first implemented in the lowest level policy planning documents, and with spiral up effect will be also implemented in other levels, as it showed in Figure 4.

As shown in Figure 4, the authors suggest implementing cluster based entrepreneurship in policy planning documents in Northern Cyprus using "bottom-up" approach. First, cluster based entrepreneurship ideas should be implemented in local level policy planning documents. This allows cities and regions to identify which sectors are dominating in the region and potentially could establish strong clusters, allocate special areas where specific clusters could develop and to support with infrastructure and coordination activities. Cluster based entrepreneurship implementation at the local level should start with economic research, identifying strong industries and existing and potential ties between industries.

Next, the authors suggest implementing cluster based entrepreneurship in industry and ministry level. As successful examples from several EU countries including Latvia shows, cluster policy is a complex policy, arising from economic, industrial, educational, science and other policy areas. The main problem authors indicate in Northern Cyprus is the lack of education and science development policy, that is key for development of cluster based entrepreneurship. Higher education is a major industry in Northern Cyprus, but the country lacks government body to plan and coordinate development of higher education and science. Several EU countries, including Latvia, have established Ministry of Education and Science that has successfully planned, administrates and coordinates education, science and technology development. This kind of government body in the form of ministry or agency would significantly increase role of education, science and technology development in Northern Cyprus. Cluster based entrepreneurship implementation at industry and ministry level should start with recognition of the overall aims and objectives for each industry and identification of potentially strong industries that could develop

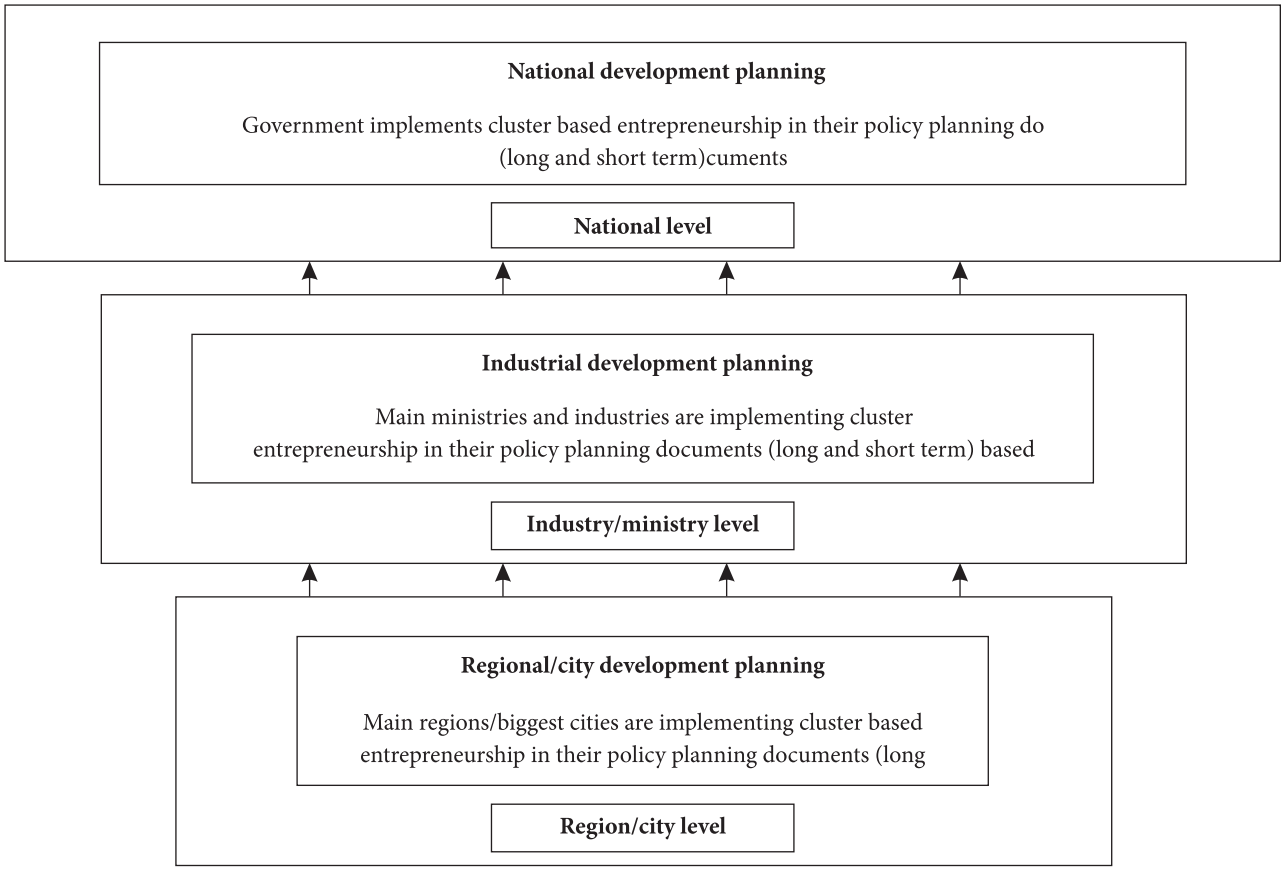

Fig. 4. Implementation of Cluster Concept in Policy Planning Documents in Northern Cyprus (Source: authors' construction)

clusters. These potential industries should be supported by infrastructure, coordination, development planning and possibly finances.

Finally, the authors suggest implementing cluster based entrepreneurship in policy planning documents on a national level. National level policy planning documents in Latvia are the top planning documents that are developed based on overall development plans for the country. Northern Cyprus currently has only short term policy planning document that focuses on economic and financial planning. The authors suggest developing long term development strategy, indicating which sectors and industries country is aiming to develop and in which sectors it could potentially develop clusters. Long term national development plan has to be made according to local and industry and ministry level planning documents, taking into account and combining aims and objectives of each city, region and industry into the overall development strategy of the Northern Cyprus.

Conclusions

1. Empirical research shows that EU pays increasing interest towards cluster based entrepreneurship, as new studies prove the need for clusters and their role in contributing to an economy through increased competitiveness, innovation capacity and stimulation of regional development.
2. Several EU countries, including Latvia, implemented cluster based policy planning since 2004, and it resulted in cluster development. Since 2008 several clusters have been established in Latvia, and new cluster support programs are launched.
3. Research in Northern Cyprus shows that neither government nor private sector pays attention to clusters or cluster development, therefore cluster idea is not implemented in any type of policy planning documents.
4. The authors suggest implementing the cluster concept in policy planning documents in Northern Cyprus using "bottom-up" approach. This would result in cluster concept recognition in region, industry and country levels.

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