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EU and Slovak Cluster Policies Interactions within the Regional Development Enhancement (perspectives, challenges, issues) Marcel KORDOŠ

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(perspectives, challenges, issues)

**Marcel Kordoš**



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cover

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Marcel KORDOŠ

**EU AND SLOVAK CLUSTER POLICIES  
INTERACTIONS WITHIN THE REGIONAL  
DEVELOPMENT ENHANCEMENT  
(PERSPECTIVES, CHALLENGES, ISSUES)**

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## PREFACE

The current approach to regional economic development is influenced by the level of regional competitiveness in terms of enhancing the innovation capacity of regions and developing the innovative clusters and regional innovation systems, with a focus on the knowledge and information society. Another important factors appear to be relations within and outside the region, networking, and last but not least, the region's ability to accumulate key competencies, develop social capital, build strategic leadership, manage resources, gather information, provide strategic infrastructure, develop risk management capabilities, and cover the sustainability principles in development strategies.

Regional policy appears to be one of the most important current programs and agenda at EU and Slovak authorities' level which support clusters in emerging industries in Slovakia. Based on the comparative analysis of Slovak clustering activities and mutual interaction within Slovak regional policy development agenda the object of this chapter is to assess the impact of Slovak clusters effects on Slovak regional development regarding the Slovak competitiveness enhancement within the global and European economy system. Technological advance, knowledge based production, innovation implemented into new technologies are the outputs of effective synergy how the cluster policy and clustering processes can be involved in Slovak regional policy development. Those are the tools leading to increasing economic growth, sustainable social and economic development and higher quality of life of Slovak regions inhabitants.

Clusters are currently considered to be major microeconomic factors enhancing the prosperity of regions. In addition, they can help boost the inflow of foreign direct investment. The important contribution of clusters is that they create an environment suitable for innovation and knowledge creation. That is why regions with strong clusters are considered to be innovative leaders, and globalization processes further are deepening these trends. Innovations are the determinants of the companies' competitiveness, and it is shown that companies organized in clusters work more often with universities and research capacities. In addition - they have better access to international

networks, but also to capital. There are also several clusters in Slovakia that aim to support their members and contribute to their competitiveness. These associations are a group of companies operating in a particular region and sector, as well as institutions (e.g. universities, regional authorities, etc.).

European and Slovak clusters consist of dense networks of interrelated firms that arise in a region because of powerful externalities and spillovers across firms (and various types of institutions) within a cluster. Clusters drive productivity and innovation. Firms that are located within a cluster can transact more efficiently, share technologies and knowledge more readily, operate more flexibly, start new businesses more easily, and perceive and implement innovations more rapidly. Slovak cluster activities are supposed to provide a platform bringing together regional, national and European actors, with the objective to define and implement a kind of Slovak cluster policy agenda.

This *scientific monograph* will discuss how the cluster policy is implemented into Slovak regional environment by assessing their synergies and parallels, how important role it plays to assure sustainable economic growth in regional development processes and enhance regional competitiveness within the national European as well as international economy environment. By means of analysis, comparative analysis methods followed by logical deduction *the main goal of this scientific monograph* is to on the basis of EU and Slovak cluster and regional policies environment analysis in Slovakia to figure out in what way the cluster policies are implemented in Slovak regional development in order to enhance the competitiveness and social and economic development of Slovak regions. The question is if clusters along with their policy are the right tool how to promote innovation flow into Slovak regions with the aim to eliminate regional discrepancies within Slovak regions to create more jobs and as the synergy effect to enhance the competitiveness of Slovak economy within European and international environment. The position analysis of Slovak clustering possibilities within Slovak regional economy in terms of European economic relations is also be *the object of this scientific monograph* with regards to its competitiveness enhancement possibilities within the global and European economic environment

while using the latest science and technology achievements as a synergic output of regional and cluster policies symbiotic interaction. *Scientific monograph deals with* the potential factors identification in the context of Slovak clusters operating in the conditions of the EU Cluster policy, with the possibility of their prevention within ensuring the objective of sustainable socio-economic development of Slovak regions. One of the objectives is also to figure out if clusters might be implemented into regional development strategies as tools helping to overcome regional discrepancies and to assure social and economic development of a national economy.

Most of the information and data for the analysis assessments as well as following outputs are coming out of the accomplished and ongoing programs and projects being held at the Faculty of social and economic relations of Alexander Dubček University in Trenčín in which the author has been actively involved as an active researcher. Namely there are programs and projects such as VEGA reg. no. 1/0918/16: "Risk management of SMEs in the context of clusters' involvement activities in the Slovak Republic"; VEGA reg. no. 1/0613/14 "Changes in the economic structure of Slovak regions and their impacts on the economic and social development" and Alexander Dubček University internal grants IGS 01/2014 "Cluster policy in Slovak Republic", IGS 02/2015 "The implication of EU Cluster policy in EU Industry and Competition policies within the Strategy 2020" and IGS 01/2015 "The evaluation of the cluster potential in the regional development with a focus on the creation of cluster initiative in Trenčín region". In addition, to make a final coverage for the EU and Slovak cluster policies and regional development issues all those mentioned projects could be understood as starting points for the project supported by the Slovak Ministry of Education's scientific grant VEGA "The impact rate assessment of clusters on the development of regions in Slovak Republic" reg. no.: 1/0953/16, of which this monograph is intended to be the final output.

The scientific monograph is focused on pursuing the following issues. *The first chapter* on theoretical basis analyzes and defines the terms clustering and cluster within its typology, regional policy, its tools and implementation mechanism and regional development within its objectives, tools and evaluation. Regarding cluster characteristics its

policy approaches, definition and typology and clustering and symptoms are to be analyzed. In terms of regional policy, its term delimitation and characteristics, operation and implementation, forms and models and finally national economic policy interactions are described. Along with the regional development, its objectives and tools, assessment, strategy planning and support and at last the basic overview of region are explained.

*The second chapter* will discuss how EU Cluster policy is implemented into EU Regional policy processes by assessing their synergies and parallels, how important role it plays to assure sustainable economic growth in European Communities and to enhance the EU competitiveness within the international economics environment. Firstly, how clusters are involved in EU and global environment will be analyzed highlighting the EU Cluster policy management and legislative framework, secondly the issue of current challenges in EU Regional policy will be discussed accenting its principles and objectives, implementation instruments and future perspectives and finally, the role of innovation in European clustering process is to be sketched out underlying the technological change fallouts within clusters and EU Innovation policy as implementation tool for clustering in regions.

*The third chapter* will discuss how Slovak cluster policy is implemented into Slovak cluster environment. Firstly, the Slovak cluster environment is to be analyzed underlining the regional deployment of clusters in Slovakia along with clusters typology and breakdown. Secondly, as the core issue of this chapter, the Slovak cluster policy concept is to be discussed in terms of its legal basis background, related initial legislative documents and supporting authorities and institutions from the national point of view along with the detailed overview of government documents supporting Slovak clusters is sketched out and at last clusters as Slovak regional competitiveness enhancement tool will be proposed stressing the mutual synergy effects and fallouts of clustering within regional competitiveness.

Author

## **1. CLUSTERS AND REGIONAL POLICY – THEORETICAL EXPOSITION**

The emergence and development of clusters in European countries is seen as an instrument how to increase regional competitiveness, making the "cluster" principle a key element of regional, innovation and industrial policies. Cluster is an element of local economy that is the result of development and natural benefits in a region resulting from close proximity to localization and intensive cooperation. Businesses centered within the cluster can compete on one hand, on the other hand, they can work together. The success of cluster depends, in particular, on interconnecting with the region, resources, investment activities, stimulating through various projects and legislation. Collaboration and competition are potential tools for increasing regional value, because it exploits the combination of knowledge, skills, knowledge and know-how of several individual subjects, hence achieving the desired synergistic effect. The chapter on theoretical basis analyzes and defines the terms clustering and cluster within its typology, regional policy, its tools and implementation mechanism and regional development within its objectives, tools and evaluation.

### **1.1 Clusters and Cluster policy – the background agenda**

In 1890, British economist A. Marshall emphasized in his work "The Principles of Economics" the importance of cooperation in industries that are concentrated within one place and are able to increase their localization benefits, for example through economies of scale. By Christensen, et al. (2012) Marshall has not yet defined the essence of clusters, but drew attention to the fact that the concentration and interconnection of enterprises in industrial sectors concentrated within one place brings significant localization savings in this way.

As stated in the CzechInvest publication „Cluster Guide“, according to Marshall, industry sectors are often locally concentrated and receive significant external benefits such as spillovers from these

concentrations. These externalities are based on:

- attractiveness and development of related industries providing specialized inputs and services (including manufacturers of special equipment for the industry),
- creating a pool of skilled labor with all the skills, knowledge and know-how necessary for the industry,
- the dissemination of ideas, knowledge and technical progress between enterprises within the industry,
- creating an "industrial atmosphere" with a set of formal and specialized institutions that enable the industry to be upgraded and efficient.

The development of these resources is possible on the basis of critical mass achieved due to the geographical concentration of particular industry. In the 1950s, the idea was to derive local development from sectoral structures concentrated in so-called "Poles of Growth". The scheme dealing with the agglomeration effect of economy was the concept drawn up by Ohlin, which, unlike Marshall, focused on how companies are influenced by the collocation of other companies. In its classification the economy agglomeration results from 4 factors (Iammarino, McCann, 2006):

- internal economies of scale are associated with production techniques or production conditions of each company,
- localization of savings that has an impact on individual businesses in sector to which they belong,
- the urbanization economy, which is based on the size of regional economy hence beyond the industry and their businesses,
- between industrial sector links as the input-output type, where the proximity of intermediate suppliers reduces input costs.

The 60s and 70s of the last century were characterized by a fall in production in traditional industries, and consequently the need to look for new industries in which businesses would regain a competitive advantage. The change occurred only in the 1980s and 1990s, when US economists pointed out that, in addition to traditional industries, geographically concentrated, to some extent, are also emerging industries, and those areas are then more competitive not only on domestic market but also worldwide.

The cluster issue was elaborated in more detail by American economist Michael Porter, who in 1990, in his work entitled "Competitive Advantage of Nations," described the importance of businesses association within the area and its link with the diamond model of competitive advantage. Porter has defined clusters as clutches of competitive industries that are not scattered around throughout the economy, but are linked through vertical (buyer-seller) and horizontal (common customers, technology, distribution channels) relationships. The clutches of competitive industries, usually scattered around physically, tend to focus geographically. One sector of competitive industry helps to create other mutually reinforcing processes.

Other major authors dealing with cluster issues as an agglomeration of companies were Krugman, Malmberg, Solvell and Zander. According to Krugman, et al. (2014), clusters are not considered to be fixed flows of goods and services, but rather to dynamic agreements based on knowledge creation, rising revenues and innovation in broader sense. Malmberg, Solvel and Zander dealt with cluster concepts in terms of urban agglomeration that include companies from different areas located in the same urban area because companies perform similar or interconnected activities. Economists like Sfoirzi and Becattini have supplemented Marshall's definition of cluster model in the area of social relations between cluster participants. According to these economists, social capital of a cluster has a major impact on the development of cluster (Rugman, 2006). According to Brakman, et al. (2006), clusters consist of co-located and interconnected industries, governmental authorities and local, academic and financial institutions and co-operation institutions. Dynamic clusters are typical for a successful microeconomic business environment.

Jovanović (2014) states that typical characteristics of dynamic cluster environment include:

- intense local rivalry, a struggle for prestige that is a stimulus for continual improvement, change and the creation of prerequisites for a more progressive and diversified supply base,
- dynamic competition resulting from the arrival of new companies, including spin-offs of larger companies already operating in region,
- intensive cooperation through different cooperation institutions,

such as professional organizations, chambers of commerce, cluster organizations, etc. In addition, clusters are characterized by intense informal interaction based on personal relationships,

- access to increasingly specialized and modern factors of production (human capital, financial capital, infrastructure) and, in some clusters, relationships with universities and public / private research institutes,
- links with related industries, sharing common talents and new technological advances.

### 1.1.1 Cluster policy approaches

To better understand a cluster policy and its orientation, three key components such as document (policy), program, and implementation agency we will be described. Policy should be understood as government-defined strategic goals. It is basically a document that does not contain any tools, measures, nor does it allocate funding, it only describes vision, goals and their significance. Policy is implemented through programs. According to Breslin (2002) program allocates funding and sets out the conditions under which money from programs can be drawn. Implementing agencies such as governmental agencies or governmental bodies - departments are in charge of program implementation.

The positive effects of clusters on the economic development of companies, sectors, regions, but also countries have resulted in targeted cluster support through the implementation of so-called cluster policies. *Cluster policy* is defined as a specific government effort how to support clusters (Karlsson, 2007). As stated by Sölvell, et al. (2003) cluster policies can be categorized into three categories, reflecting their motivation as well as political goals. The first category is support policies aimed at improving the business environment that indirectly stimulate the emergence and dynamism of clusters. The second category includes traditional framework policies, such as industrial policy, SME development policy, research and innovation policies or regional policy. The third category is presented by policies being aimed at creating, mobilizing and improving clusters in specific sectors. This category is considered to be a strict cluster policy.



According to Pavelkova (2009) cluster policy depends on the type of clusters, the current level of cluster development, but also on the knowledge of suitable support tools possibility. Ideally, cluster policies address specific cluster problems. In addition, for the functionality of clusters it is important to create appropriate framework of conditions that stimulate the development of companies, but also the emergence of companies. Cluster support also helps to improve relations among key economic actors in the region, to activate regional authorities, businesses, and academic sphere, and to find ways how to actively collaborate with these stakeholders (Burger, 2013).

From a practical point of view, cluster policies can be divided into three categories (ECO, 2018):

- development policies focused on creating, mobilizing or improving the functioning of clusters (e.g. The best cluster strategy national contest),
- policies aimed at improving the efficiency of specific instruments (e.g. R&D subsidies provided only to firms in regional clusters where spill-over effects are expected),
- policies that help the microeconomic environment to increase the presumable emergence of clusters (e.g. policies removing the regional competitiveness barriers).

As argued by Skokan (2005), cluster policies can be focused on:

- national, regional or local level,
- creation, but also following life stages of clusters,
- cluster environment or cluster vitality.

In addition, cluster policies may have different objectives from local to meta-clusters and can be characterized by both top-down and bottom-up approaches. Cluster policies may include other policies such as industrial, innovation, science, technology, education, regional and export promotion policies. Cluster development can, however, be enhanced through of standards implementation. However, because of sectoral, regional or national specificities, it is not possible to create a universal cluster policy. In general, to support the emergence of new clusters is more complicated than to support already operating clusters (Haviernikova, 2014).

Cluster policy, unlike sectoral or industrial policy, should be neutral in

terms of industry or the type of economic activity. In cluster theory, all clusters are useful. Cluster externalities and spillover effects enhancement will increase the productivity and prosperity of any cluster. Thus, the government should not be picking up among clusters, but should create conditions that support the modernization of all clusters. Cluster policy is thus fundamentally different from sectoral or industrial policy, often being mistaken, for example, by focusing on certain types of activities preference (Porter, 2007). If a region wants to stimulate the creation and growth of innovative clusters, investing into university education, science and research is also needed. However, it is important that the orientation of research institutes is relevant to particular clusters (Balog, 2015).

According to OECD (2001), separate cluster policies are defined on the basis of one of the three main policy groups, namely: regional policy, science, research and technology policy and industry and entrepreneurship policy. Depending on particular policy, its scope is defined, such as:

- a cluster policy based on regional policy focuses on building social capital (building and maintaining common relationships leading to mutually beneficial results and building mutual trust);
- cluster policy based on science, research and technology policy puts emphasis on innovation and commercial exploitation of research results;
- cluster policy based on industry and entrepreneurship policy focuses on factors supporting national or regional growth, key sectors and their competitiveness, or support for SMEs;
- a cluster policy based on two, respectively. of all three policies.

Individual policies go through changes and change their current approaches in line with the goals of national and regional competitiveness. Regional policy, science and technology policies, as well as industrial (enterprise) policies, highlight the significance and support of regional actors and lead not only to increasing competitiveness but also innovation. In particular, the second and third chapters of this scientific monograph illustrate the output of the interaction and synergy of clusters within the EU and Slovakia's innovation and regional policies.

On reflection, cluster policy is not an isolated, independent or clearly defined discipline. It contains all policies that could have some impact on cluster development. Cluster policies are usually set separately or as a part of some other policies such as regional, industry or innovation policy. From the territorial point of view, cluster policy can be seen in three dimensions: national, European and global. Policies at European, national or regional level should be mutually supportive and strengthened in order to influence competitiveness, innovation and performance in Europe. Individual countries usually have one or two national cluster programs, when the main funding sources of such programs are country's national budgets. Policy implementation is usually provided by agencies with other areas of intervention, but some countries such as Lithuania have a specialized agency (the National Office of European Technology Platforms). For more than two thirds of EU countries, cluster support is a part of innovation policy.

### 1.1.2 Definition and typology of clusters

Since publishing the book "Competitive Advantage of Nations," a number of cluster definitions have emerged, most of which have similar characteristics. As stated by Dicken (2007), the basis for the cluster definition is usually the following:

- groupings of enterprises,
- the geographical proximity of enterprises,
- the scope in a particular field and in related fields.

To define and explain the concept of cluster is not an easy task. The concept of cluster is used in several areas. Within the macroeconomic and microeconomic structure, it is the issue of national, regional and cross-border clusters, competence of clusters, clusters in industry, or production and innovation systems. In most cases, the cluster concept is associated with management system and performance enhancement, particularly in the field of computing science. Term cluster clarification in economic sphere is mainly found in Anglo-American literature, where we often encounter clusters, industry clusters, industrial clusters, business clusters, regional clusters, innovative clusters, and so on with a meaning of cluster, group or group of companies and institutions (Skokan, 2007; Balog, Duman, 2010).

According to Skokan (2007), translation of regional and innovation clusters basically corresponds to the original English meaning, but when we take into account the term 'industry', it has two meanings in translation, one is industry, the other is a sector. The industrial cluster term is used in conjunction with cluster orientation for the industry. However, the cluster definition is based on its sectoral focus, so we should rather use the cluster industry as sectoral cluster because clusters exist in other areas of national economy, such as health, financial services, agriculture, and so on. Similarly, the word clustering is also derived from the English term, which reflects the process of grouping companies and institutions.

The term cluster has become part of various developmental directions of economic theory and practical experience in the area of economic development, especially in regional dimension in the second half of the 20th century, in connection with globalization processes. Within cluster definition, areas of collaboration and business-to-business relationships, agglomeration effects, social capital, economies of scale, technology transfer and dissemination, innovation and knowledge management are overlapping. Taking into account these areas in combination with the effects that clusters bring, we can find several definitions in professional literature.

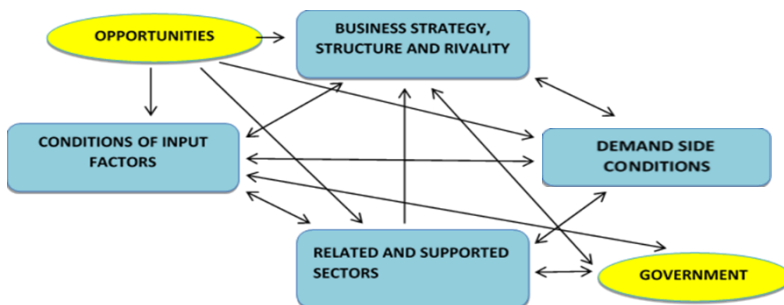
In 1998, M. E. Porter in Harvard Business Review, in paper „Clusters and the new competition economy“, defined clusters as geographic concentrations of interconnected companies and institutions in a specific field. Clusters include a number of related industries and other stakeholders being important to competition. These include, for example, specialized inputs suppliers such as components, machines and services, and specialized infrastructure providers. Clusters also often expand downstream into channels and customers and cross-border to complementary product manufacturers and companies in industries related to skills, technologies, or common inputs. Finally, many clusters include governmental and local authorities and other institutions - such as universities, standardization agencies, think-tanks, business associations that provide specialized training, education, information, research and technical support (Prno, 2005).

Michael E. Porter (1998) has portrayed four interconnected areas to

describe the business environment, so-called diamond model illustrated in Figure 1. Porter refers to cluster as a geographically close group of interconnected enterprises, specialized suppliers, service providers and related institutions in a particular field, as well as companies in related fields that compete one another but also complementing and cooperating with common features. Porter model contains the following components:

1. Company strategy, structure and rivalry - represents a corporate strategy as a different way to competitiveness, takes into account customer's choice and promotes innovation; and rivalry that strengthens competitiveness amongst the leader in a sector through innovation.
2. Input conditions - include a variety of natural, human and capital resources, climate, information system, legal system and administrative system, scientific and technological infrastructure.
3. Demand side conditions - must include a sophisticated and demanding local customer who predicts demand for specialized segments or needs somewhere else.
4. Related and supported industries - include the existence of capable local subcontractors and competitive local companies in related industries in terms of technology, workforce or customer's knowledge.

Figure 1. Porter's diamond model



Source: own processing by Porter, 1998

According to Hamilton and Wepster (2009), clusters are production networks of interdependent companies, including suppliers linked to each other within the production value chain. In some cases, they include strategic alliances with universities, research institutes,

knowledge intensive services, intermediaries, consultants and customers. Reiner (2012) report that clusters are made up of manufacturing and non-trade organizations, of which membership within the group is an important competitiveness element for each member.

The most widely used and best-known cluster definition is a definition of M. Porter, who developed the original definition from 1998 as follows: Clusters are local concentrations of interconnected companies and institutions in a specific field. Clusters include a group of interconnected industries and other entities important for competition. They include, for example, specialized inputs suppliers such as components, machines and services, and specialized infrastructure providers. Clusters often expand downstream to sales channels and customers, and to complementary products manufacturers and companies in industries related to knowledge, technology, or common inputs (Zemanová, 2008; Zak, Hrkova, 2014; Zadrazilova, 2016). Many clusters also include governmental or other institutions - universities, law agencies, research teams, or business associations - providing specialized training, education, information, research and technical support (Rydvalova, 2005; Sejkora, Sankot, 2017; Soukalová, 2005).

According to Jovanović (2005), Porter's definition was used as an expert group tool that added some elements to the definition: "Clutter are groups of independent enterprises and associated institutions that:

- cooperate and compete,
- are geographically concentrated in one or more regions, indicating that clusters may have a global existence,
- specialized in some areas linked to common technologies and skills,
- based on research or traditions,
- can be institutionalized (cluster management) or non-institutionalized.

In the Regional Cluster Report in Europe (2002), Porter's definition was more broadly defined. The hierarchy of different concepts has been developed to distinguish regional clusters from regional innovation systems.

Tab. 1. Cluster Definitions and expressions

Regional cluster	Concentration of independent companies within the same or similar industrial sectors in a small geographical area.
Regional innovation network	Organized co-operation (agreement) between companies, based on co-operation, standards and conventions, which supports innovation activity of companies.
Regional innovation system	Collaboration between firms and various organizations due to the development and dissemination of knowledge.

Source: Observatory of European SMEs 2002, No. 3, Regional clusters in Europe, ISBN 92-894-3560-7

From the stated above it can be clear that clusters represent a grouping of business entities, educational and research institutions to improve their business position and succeed in a competitive market. It is believed that the effects resulting from this association will be reflected mainly in lowering the costs, attracting new customers, and joining new markets entry.

According to Organization for Economic Co-operation and Development (OECD), clusters are local associations of horizontally or vertically interconnected companies that specialize in similar business areas, along with support organizations. According to Wokoun (2006) clusters are formed by a whole range of factors. This is a spatial phenomenon of the economy, being manifested in the different phases of society and economy development. However, this spatial approach has made considerable progress in modern era.

According to Skokan (2007), clusters as a group of dependent companies and other associated institutions of a particular industry are usually located in one or several neighboring regions or cities, but may also have a nationwide or supra-national dimension. The borderlines of administrative regions are not so important in this case as well. They specialize in a particular industry such as computing, engineering, biotechnology, financial services, wine growing, wine production, and are, in addition, linked by common technologies, shared and qualified workforce, research, or even tradition. Clusters evolve over time and are not a "night over" phenomenon, but they mostly need to be developed for

several years or even decades. Their occurrence is influenced or initialized by the presence of corresponding production factors in particular location, as well as the presence of initial institutions or organizations, i.e., companies, universities, etc., which act as an anchor for establishing other companies and attracting investments. Clusters can be (and in most cases are) institutionalized, i.e., have their own management organization. CzechInvest agency, which is responsible for implementing EU funding, defines clusters as follows: "Cluster is a set of regionally linked companies (affiliates) and affiliated institutions and organizations - especially tertiary education institutions (universities, higher vocational schools) whose ties have the potential how to consolidate and enhance their competitiveness. "

### *Clusters' typology*

In our professional domestic and foreign literature, we encounter multiple cluster specification and cluster typologies. The most widely used typology of clusters is Porter's popularized concept of clusters, as he states in his work *The Competitive Advantage of Nations* (1990), where he mentions two types of clusters:

- vertical clusters that relate to industries being linked through the relationship buyer - seller,
- horizontal clusters that include sectors that could share the common market for products, use a common technology, workforce skills and similar resources.

The next Porter (1993) typology includes:

- Local industrial clusters characterized by:

- employment is equally deployed within the cluster, goods and services are mainly provided on local markets,
- limited competition with other regions,
- most businesses provide services that are traditionally used in region,
- the manufacturing industry in these clusters produces products such as newspapers, drinks, and concrete, intended for local consumption.
- some raw inputs come from outside of the region.



- Clusters dependent from resources:

- employment is located near the necessary resources and the competition is both domestic and international,
- clusters are linked to an area from which resources cannot be moved.

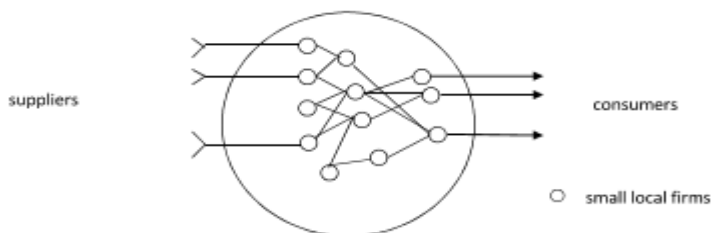
- Business clusters

- resources are available and mobile,
- products and services are sold outside the region and other countries,
- due to competition, they are located in areas with available labor force concentration.

Other authors dealing with the definition of typology of clusters in the literature include Markusen (1996) and Jovanović (2005) whose typology belongs to the simplest ones in terms of models construction and is corresponding to Porter typology associated with horizontal and vertical segmentation of clusters. Eden's typology suggests that the degree of speculation and complementarity in cluster concentration is closely related to efficiency and effectiveness. Markusen (1996) in book „Sticky Places in Slippery Space: A Typology of Industrial Districts“ based on extensive empirical research, presented a typology of four areas (not clusters) with a precise definition of their characteristics, with the baseline being the so-called New industrial district (NID) – i.e. new industrial areas (districts), highlighting the current issues of globalization trends. The categories consisted of 4 industrial spatial types:

1. Marshall industrial regions, often called the Italian Industrial Regions

Figure 2. Marshall's industrial regions



Source: Markusen, A. Sticky places in Slippery Space: A Typology of Industrial Districts

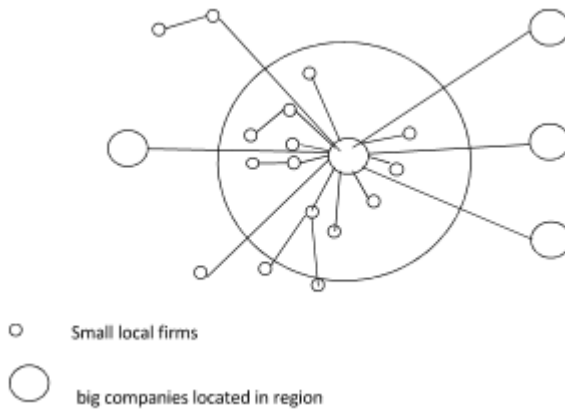
In the original formulation of industrial districts, Marshall introduced this region where its business structure included small local firms that made investment and production decisions at a local level where economies of scale are relatively low and are preceded by large firms. In districts, the main trade is made between buyers and sellers, often carrying long-term contracts or obligations. Figure 1 shows Marshall's industrial districts with several small businesses that trade and eventually export from the region. The arrows on the left show the necessary purchases of raw materials and business services outside the region and on the right – there are sales on external markets. The specialization of Marshall's industrial districts is based on the nature and quality of local labor market. Workers are inclined to stay in region and prefer intra-company migration. The region is perceived as a relatively stable community that enables the development of a strong local cultural identity and industrial knowledge sharing.

Jovanović (2014) states that the basic functions of this type of region include:

- in organizational structure of a region many small firms are in local ownership,
- economies of scale are relatively low,
- internal trade takes place between buyers and sellers,
- key investment decisions are made locally,
- long-term contracts and commitments between local buyers and sellers,
- low level of cooperation with companies outside the region,
- internal labor market is very flexible,
- workers are more bound to the district than to companies,
- a high level of internal migration within the region,
- the development of a unique local cultural identity,
- specialized form of financing, technical expertise, business services available outside the region,
- turbulences, but good long-term prospects for growth and employment.

## 2. Hub and spoke industrial regions

Figure 3. Hub a spoke industrial regions



Source: Markusen, A. Sticky places in Slippery Space: A Typology of Industrial Districts

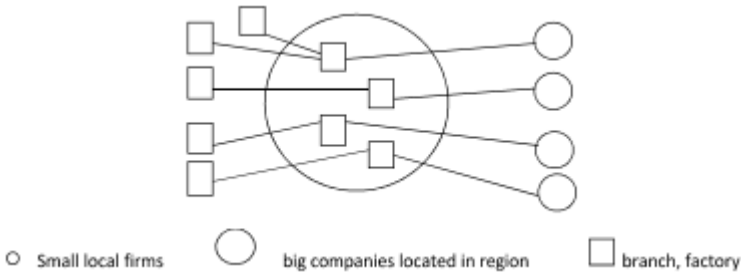
Markusen (1996) describes these districts as industrial regions where key companies act as anchor or hub of a regional economy with suppliers and related activities being deployed as a wheel rake. The main characters include:

- the business structure is dominated by one or several large, vertically integrated companies being surrounded by suppliers,
- the main companies are located outside the region with main links to suppliers and competitors outside the region,
- economies of scale are relatively high,
- low levels of local business revenue apart from the third level,
- main intra-regional trade between dominant firms and suppliers,
- key investment decisions are accepted locally but spread globally,
- contracts and commitments between dominant firms and suppliers are on a long-term base,
- high degree of cooperation, with links to external firms at local and external levels,
- the average occurrence of workers' exchanges between customers and suppliers,
- low level of cooperation among large competitors regarding risk sharing, market stability, share of innovation.
- internal labor market in the region is less flexible,

- workers are tied more with large companies, then with the region and finally with small firms,
- a high level of internal migration but a lower level of external migration,
- the development of a unique local cultural identity,
- specialized sources of financing, technical expertise, business services being dominated by large firms,
- absence of business associations that carry out infrastructure sharing - management, training, marketing, technical or financial assistance, risk-sharing and stabilization mechanism,
- a strong role of local authorities, regulating and supporting the core industry in local, regional and state administration,
- a high level of public involvement in the field of infrastructure,
- long-term prospects for growth based on prospective industries and strategies in dominant enterprises.

### 3. Districts based on satellite, industrial platform

Figure 4. Districts based on satellite platform



Source: Markusen, A. 2006. Sticky places in Slippery Space: A Typology of industrial Districts.

This platform is based on clusters of outsourced companies from key industries that are often built far enough away from large urban agglomerations as a way of stimulating regional development in remote areas, while at the same time reducing the cost of doing business at relatively high wages, rental costs and taxes. These platforms are characterized by (Nadabán, 2009):

- the organizational structure of region is dominated by large companies with external ownership and headquarters,

- economies of scale are medium or high,
- low or medium revenue,
- minimal interregional trade between buyers and suppliers,
- key investment decisions are made from outside,
- absence of long-term liabilities to local suppliers,
- a high level of cooperation, linked with external firms, in particular with parent companies,
- a high rate of workers' change between customers and suppliers at interregional level, not local,
- labor market outside the region,
- employees are more bound to a business than a region,
- high level of work migration at managerial, professional, technical level, less blue and white collar.
- low development level of unique local cultural identity,
- the main source of financing, technical knowledge, business services are provided externally, through companies, or by acquisition.
- no long-term capital in the region,
- no commercial company operating the infrastructure sharing in the field of management, training, technical or financial cooperation, risk sharing and stabilization,
- the strong role of local government in providing infrastructure, tax concessions, and other stimulating incentives,
- endangered growth by medium-term transfer of activities elsewhere on similarly built platforms.

4. State-defined regions where the dominant element is one or more governmental institutions, for example, public or non-profit organizations are based on a military base, a weapons lab, a university, a prison complex, or a concentration of government offices, acting as key tenants in region. Other developing units will be highly dependent on the continued existence of a government institution. The business will be huge; internal as well as external (Jovanović, 2014; Snaar, 2002).

The following table shows the common elements according to Porter and Markusen typologies.

Table 2. Differences between Porter and Markusen typologies

Characteristics	Porter			Markusen			
	Local industry	Dependence on resources	Sectoral focus	Marshall's industry regions	Hub and Spoke regions	Satellite platform of the region	State-defined industrial clusters
Geographical area							
High population density			x			x	x
Low population density	x			x			
Investment decisions							
Local	x	x		x	x		
Outside the region			x			x	x
Availability of workforce							
Average	x						
Low			x		x	x	x
Internal trade							
High	x	x		x	x		x
Low			x			x	
External trade							
High		x	x		x	x	x
Low	x			x			
Size of firm							
Small	x			x			x
Big			x			x	
Government level							
Local				x	x		
State					x		x
Federal					x	x	x
Competition in other regions							
High			x				
Low	x						x
Production of goods							
Services	x	x		x			x
Goods		x	x	x	x	x	x

Source: Zelbst, P., J: Typology of cluster concentrations based on factor conditions of production and evolution of supply chain infrastructures, 2006, The university of Texas at Arlington. In: Havierníková, Janský, 2012.

Jemala (2009) presents another cluster typology, which lists two basic types of clusters based on the level of knowledge being used:

- Research, innovation and high-tech research clusters, typically linked to universities and local research and innovation centers, such as Gwanggyo Techno Valley (nano and biotechnology research and development), they are considerably more demanding on quality and intangible capital usage.

- Business clusters - aimed at supporting and developing business in a particular sector or region, such as Detroit Automobile Cluster, which brings together a number of automotive manufacturers, their components, intangible capital takes the form of production and sales know-how.

The next way how to segment clusters according to Jemala (2009) include:

- segmentation based on geographic location - international, national regional, localized usually near major cities with good transport infrastructure (railways, motorways, airports).
- sectoral breakdown - e.g. Media City Cluster Dubai or Aston, Birmingham (optical cables), chemical products, biotechnology, ICT, military industry (NASA), tourism industry (Orlando), entertainment industry (Lyon, Paris) (Balaz, 2010; Balaz, 2013).
- horizontal industry segmentation - One-to-one business link created to achieve better purchase prices, risk diversification in joint research and development, improved marketing and sales.
- breakdown by production chain - shopping, production, sales, usually near larger production plants or larger sales centers.
- breakdown by technological taxonomy - supply dominant companies, information networks, research clusters, logistic clusters (Snaar, 2002).
- division by lateral linking in sector - linking companies from different areas and branches, they are complementary to each other like in automotive industry (construction, IT, safety).
- distribution by capital share - based on above-mentioned concentration or cooperation, in the form of Incorporated, Ltd., cooperatives, civic associations (Skokan, 2007).
- life cycle breakdown - establishment, volume growth, quality growth, maturity, cluster loss.
- Other divisions - by size, by number of subjects, by strategy and organizational structure, by degree of knowledge used, etc.

As stated by several authors, the cluster typology is not unified, and includes a complex of multiple elements that can vary from one cluster to another, but may sometimes be common. Current scientific research

is dominated by classification established by M.E. Porter (2008). Clusters are not static but dynamic elements and can be explored in several ways such as, sectoral level, state, regional, regional levels, and so on.

### 1.1.3 Clustering and symptoms of clusters

Clustering is a contradictory process, on one hand, the involvement of subjects in cluster activities brings many benefits such as access to innovation, cost reduction, production diversification, easier and more cost-effective availability for different types of services, a wider portfolio of products or services, and much more. On the other hand, the clustering process also encounters a number of negative impacts such as sovereignty restrictions, being dependent on dominant cluster subjects, inappropriate choice of affiliates, geographic location of a cluster, and further negatives, such as unavailability of qualified workforce and infrastructure and so on.

As main symptoms of a clusters can be considered than companies within the cluster are involved into more than one sector and several entities (e.g. suppliers), state and other institutions (universities, research institutes, development institutions, standardization institutes, trade and other associations). In particular, the development of clusters is essential for the innovative growth of companies provided by R & D institutions.

According to Snaar (2002), successful clusters are characterized by a number of common elements and links:

- clusters are run by business and public leaders,
- understanding the cluster participants about the importance of cooperation and competition,
- a system approach in which all participants have an equally important role
- the existence of strong links between firms and institutions,
- the most successful clusters operate on the basis of informal social mechanisms that stimulate competition by giving preference innovation (e.g. developing new products) to price competition.



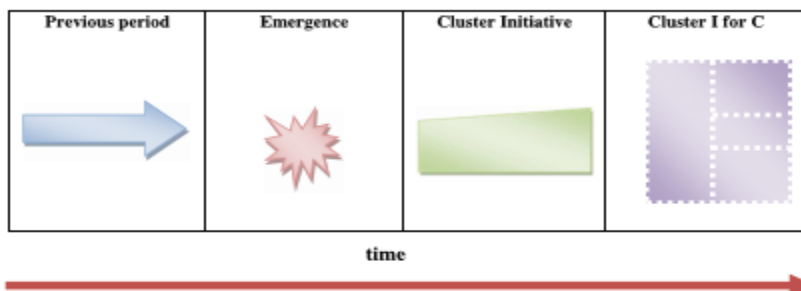
## Cluster Initiatives

Cluster Initiatives (CIs) appears to be another significant term regarding the cluster agenda. According to the Green Paper on Cluster Initiatives (European Commission, 2017), Cluster Initiatives are organized efforts aimed at increasing the growth and competitiveness of clusters

in region with the participation of cluster companies, government and / or the research community. CIs have become a central element how to improve the growth and competitiveness of clusters. Cluster initiatives have their own life cycle being independent of the cluster's life cycle. CIs may arise in the early stages of the cluster's life cycle (Fig. 4), but more often it is a complement that acts as a certain "accelerator" in later stages. According to Solvell, Lindqvist and Ketels (2003) various aspects of cluster initiatives (CIs) can be summed up into the following points:

- CIs development depends on the situation before the official initiative launch,
- CIs are initiated by one cluster expert, when the future management is taken over by facilitator
- CI is a response to the current situation (political, economic),
- the estimated time of construction of the CIs is 3 years,
- change in the way how CIs are funded at the time of their creation (government incentives) and after a certain period (membership fees)
- performance of CIs,
- transformation of CIs into a cluster institution for cooperation (CI-for cluster).

Figure 5. Cluster initiatives life cycle



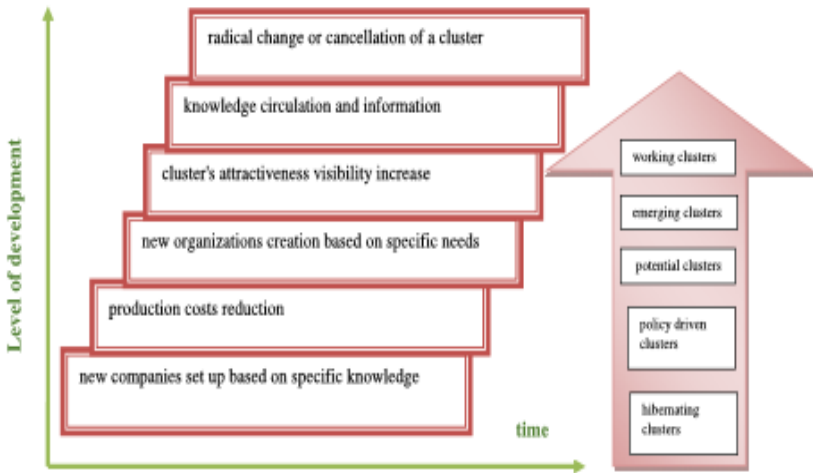
Source: Folta, 2006

### Cluster life cycle

Clusters, during their development, go through several phases: the emergence, the growth, the attenuation, or the transformation. Although clusters go through different forms of development, it is possible to identify the common elements of this process. These processes were, according to Snaar (2002) and Jovanović (2014), analyzed by the European Network for Socio-Economic Research commissioned by the European Commission. Six phases of cluster development have been identified, and this process cannot be unified on each cluster, due to the diversity of clusters. This is a simplified model consisting of the following steps being described in Figure 5:

1. Cluster formulation
2. Production costs reduction, leading to economies of scale
3. Creation of new organizations based on specific needs
4. Increasing the visibility of the cluster's attractiveness
5. Circulation of knowledge and information
6. Radical change or closing down the cluster

Figure 6. Level of cluster development - process and their association with different cluster types



Source: own processing by Snaar (2002) and Jovanović (2014).

According to Skokan (2004) and Wokoun (2006), the cluster's life cycle consists of the following phases:

- Initiative - Finding development options and priorities for cluster creation, its geographic location and mapping
- Establishment - Common agreement on cooperation among enterprises, institutions and regional government, clustering, start-up activities, cluster organizational structure, identification of problem areas of industry and potential cluster members, occasional joint projects
- Development - Creating new links between cluster members, shared mission, vision, strategy, cluster goals and activities, realization, building and expansion of cluster network, co-operation in project management, joint research, development, creation and commercialization of innovation, purchase of input material and exploitation new production technologies with higher production quality, joint educational activities, training and overall development of human resources, active and effective marketing-based cooperation, joint image formation, joint negotiation in business and legislative relations
- Maturity - Establishment of cooperation with other clusters, expansion of cluster members' activities, projects at interregional and international level.
- Decline - Cluster cooperation is disrupted, efficiency and innovative performance of the cluster is declining, effects of joint activities are falling down.
- Transformation - change of external environment (markets, technologies, processes and entities) influence the cluster's activities, leading to adaptation to new situation and subsequent transformation of a cluster.

### *Positives and negatives of clustering*

As it can be seen from various economic studies, clustering is not only an advantage but also a number of potential disadvantages can be seen in here.

Benefits of clustering process can include:

- Innovation potential - wide range of knowledge of associated actors. The bigger the number of participants in cluster, the greater the innovative capacity and flexibility on competitive market, which can ultimately lead to the emergence of new firms, innovations, or cost reduction or diversification of production.
- Opportunities for small and medium-sized enterprises to develop and enter the market.
- Better availability of other services in banking, accounting, consulting, marketing, etc.
- Distribution of costs and reduction of unit costs.
- Responding faster to market requirements.
- Easier access to information, new technologies, better workforce.
- Positive impact on regional development.
- A wider range of products and services.

Among the drawbacks we can include factors such as:

- A partial loss of sovereignty,
- Being subordinated to the dominant elements of the cluster.
- Low awareness of the possibilities for business association.
- Geographic location of a cluster, e.g. areas where there is insufficient transport infrastructure.
- Inappropriate selection of subjects involved in the cluster.
- Lack of skilled labor force.

## **1.2 Regional policy - principles and rules**

The functioning of regional economy is determined by regional policy that can be defined by Buček, et al. (2010) as a set of objectives, measures and decisions in development and support activities, in programs and trends undertaken by the government, territorial self-government and interest groups at local and regional levels. In regional economy, important areas of socio-economic development are important, highlighting the use and deployment of labor, human resources, health, social security and environmental protection.

The priority of regional policy is to ensure the development of regions, to alleviate excessive discrepancies within their development, with an emphasis on the efficient use of region's own resources. The existence

of regional policy is based on the fact that national economies are not homogeneous, but there are smaller or larger differences among individual regions in national economy (Rajčáková, 2005; Duman, et al., 2009). The different socio-economic level of regions significantly influences the overall economic development of landscape. Inappropriate regional differences are the cause of problems in different areas, and therefore public and local authorities of particular countries are trying to mitigate those discrepancies by appropriate instruments and measures.

Different levels of regional development result from their uneven production facilities and their inefficient usage. A particularly unfavorable fact is the too high unemployment rate in some parts of national economy, resulting in lower production, lower incomes, lower living standards of the population. Therefore, it is appropriate to seek resource efficiency in order to achieve a favorable economic growth. Another reason for implementing regional policy is to promote optimal location for firms from a macroeconomic point of view, and to avoid too high concentration of economic activities in the so-called "congested" regions and the resulting congestion spending and environmental problems (Ivanička, Ivaničková, 2007; Mitchel, 2006; Baldwin, 2009). The uneven economic activities in individual regions can cause disproportionate social disparities between regions, which are necessary to be mitigate, for example, by income redistribution or employment promotion. Otherwise, serious social unrest or political conflicts could occur, and thus not solving the regional discrepancies issue would cause problems throughout the national economy.

### 1.2.1 Term delimitation and characteristics

The concept of regional policy is a very intensely used term in theory and practice, but it is not defined identically in professional economic literature. It is because of different perspectives laid on its substance, when some authors highlighting the objective of regional policy, others are emphasizing its instruments, others putting institutional and legal security at its core. In the simplest form, regional policy can be characterized as a policy geared towards the development of regions and the mitigation of differences among them. Necessary prerequisites for the

need to implement regional policy are regional discrepancies (Mitchel, 2006; Ivanička, Ivaničková, 2007). Discrepancies among regions are due to the complexity of internal and external factors. Regional discrepancies arise from different primary potential of individual regions (location and natural conditions), different development options (natural resources, tourism), economic structure (localized sectors and activities), demographic differentiation and infrastructure level. Also, a specific socio-economic, historical and political development in a particular time horizon creates conditions for uneven development of regions. In addition, regional discrepancies are affecting economic, social and structural changes, as well as global and regional changes linked to decentralization processes, strengthening local authority competences and fiscal decentralization (Kovářník, Stejskal, 2009; Baldwin, 2009; Duřabovská, et al., 2015). It is not to be expected that regional discrepancies will eliminate or mitigate market and market mechanism. Therefore, it is the role of government, and specifically of regional policy, to mitigate the significant differences in economic and social level of regions, hence contributing to the growth of entire national economy.

From stated above, it can be said that the development of regions is ensured mainly through the application of regional policy instruments. Regional policy is designed to eliminate significant differences in living conditions at regional and local levels, to limit the negative effects of structural change, especially unemployment, and to promote development of backward local components. According to Belajová, Fázíková (2005) the main objective of regional policy is to mitigate regional discrepancies, to correct the spatial allocation of production factors and to support economic growth of region (Habáňík, 2016). Wokoun et al. (2008) argues that regional policy represents a set of objectives, measures and instruments leading to the reduction of excessive differences in socio-economic level in individual regions. Habáňík (2012) adds that, in addition to reducing disparities, regional policy has to strengthen competitiveness and influence social and economic development of regions and national economy.

Generally speaking, regional policy is a set of objectives, tools and actions to improve the spatial organization of economic activities, to reduce regional discrepancies and to ensure the economic, social and territorial development of regions. According to Ivanička, Ivaničková

(2007), regional policy has evolved as a tool how to maintain territorial dynamics and prosperity, reduce territorial disparities, regulate migration and ensure the sustainability of regions, towns and municipalities. At the same time, regional policy is a tool and a framework how to develop a regional development planning for government, regional authorities and other institutions. Further definitions of regional policy put emphasis on institutions that ensure its implementation and on their interventions aimed at helping the lagging regions and the mitigation of regional discrepancies. According to Lacina, Sekerka (2008), regional policy is a conceptual and executive action of government and its regional authorities aimed at balanced development of regions. Mitchel, et al (2006) states that regional policy is implemented through state and local authorities, in a close co-ordination of state with sectoral policies, structural and urban policies.

According to Skokan (2004), regional policy is conceptual and efficient activity of state, regional and local institutions aimed at defining the main directions and strategic objectives of regional development and creating procedures, methods and resources for their implementation. Similarly, Rajčáková (2009) explains that regional policy is primarily the management activity of state and local authority, which aim to create more suitable conditions for dynamic and versatile development of regions with maximum utilization of their geographic, human and economic potential. According to Postránecký (2010), regional policy represents a set of interventions geared to the specific situation of state and its regions and the expected development trends in support of measures leading to the growth of economic activities and their balanced territorial deployment and infrastructure development.

As stated by Rajčáková (2005), regional policy is implemented at central as well as regional level. It has a regional character, focusing on intra-regional issues (links to municipalities and regions), cooperation among regions and cross-border cooperation. In addition to national and regional levels, a transnational level resulting from involvement of states in supranational institutions, economic communities, and the efforts to jointly address the adverse effects of excessive regional disparities can be complemented. Habánik (2012), however, points out that regional policy is increasingly shifting from government to regional authorities, which makes it possible to address specific problems based on knowing

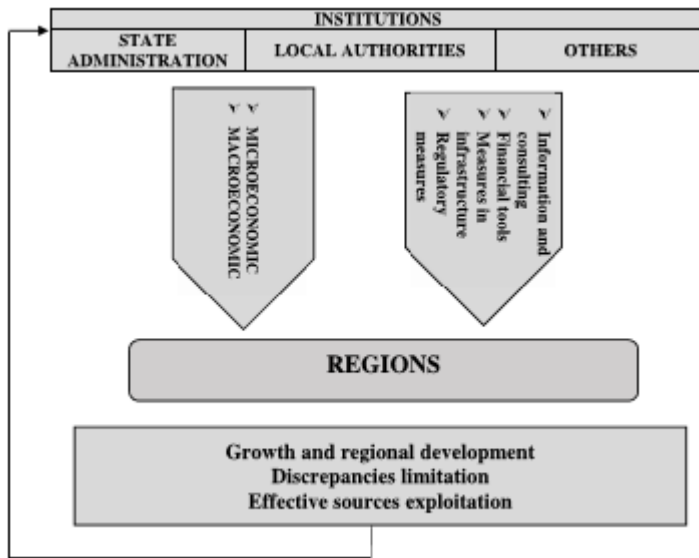
their specifics and differences. This shift, on one hand, undermines the coordination of partial policies but, on the other hand, it strengthens networking and partnerships among the key players in a region, playing a key role in regional development. It is important to cooperate with each other within the territorial authorities and other institutions, organizations and companies operating in region (Pileček, 2011; Nemcová, 2004).

We conclude with the definitive discourse that, in our view, most accurately and precisely defines the essence and purpose of regional policy, including some new elements responding to current challenges and demands. Tvrdon (1995) understands regional policy as targeted public interventions leading to increased attractiveness of individual regions and localities (including improving the conditions for competitiveness) and changes in spatial arrangement of economy resulting in interconnected objectives of long-term economic growth, resulting in the growth of quality of life and the removal of unjustified discrepancies among regions. Jovanović (2014) interprets regional policy as a set of measures, development and support activities, programs and trends undertaken by state government, local government and lobby groups from different sectors at local and regional levels in order to achieve economic development.

The regional policy attribute is to reduce discrepancies among within the development levels of individual parts in region, to promote economic and social development, in particular in terms of activating their internal potential, ensuring the growth of quality of life and ensuring the sustainable development of a region and national economy (Baldwin, Wyplosz, 2009; Rehák, 2011). The different views on regional policy definition show that the area of regional policy is quite extensive and a systemic approach has to be applied in its implementation. This presupposes the creation of conditions in the area of legislation, institutions, instruments and organizational assumptions as unconditional requirements to achieve the stated goals. The fulfillment of the assigned tasks lies within the competence of individual regional policy institutions through the specified instruments. These facts and relationships are shown in Figure 7 and the next chapter will deal with them in more detail.



Figure 7. Regional policy operation model



Source: own processing by Masárová (2015)

### 1.2.2 Operation and implementation of regional policy

Closer characteristics of the system, i.e. defining the objectives, subjects and tools of regional policy will be addressed in the following sections of this subchapter within the operation and implementation of regional policy.

#### *Regional policy goals*

Among the universal requirements to formulate regional policy objectives there can be included their clear and specific formulation, sufficient difficulty, but feasibility, acceptance by their implementers and the possibility of feedback, i.e. control of their performance (Jovanović, 2014). It should be pointed out that within defining the objectives of regional policy quite often it is possible to encounter their uncertainty, inaccuracy, inconsistency or excessive content, or duplication. Also, the need to subordinate regional policy objectives regarding the strategic

objective of the country as a whole cannot be omitted. The classification of regional policy objectives includes a breakdown according to various aspects, whether in terms of time, significance, scope, character, and many more.

In terms of time, goals can be understood within the short, medium or long term period. The long-term objective is to create conditions for a balanced development of regions in terms of economic and social, but also environmental and urban planning. In medium term, the role of regional policy is to stabilize the economic, social, or political relations that arise in region and national economy, to look for the bases, resources, tools and procedures to mitigate unjustified disparities (El-Agraa, 2004). The short-term objectives of regional policy are related to addressing the urgent problems in regions arising from specific conditions and current needs of regions and states. The time aspect closely relates to the classification of regional policy objectives in terms of significance, both strategic and tactical. Strategic goals are usually the main, long-term goals that national economy is trying to achieve. Tactical goals are tied for a shorter period of time and serve to meet the strategic objectives of regional policy (McDonald, Dearden, 2005).

According to Larry (2007), depending on the nature, regional policy objectives may be defined as qualitative or quantitative ones. Qualitative character has the objective of regional policy formulated, for example, as follows: the objective of regional policy is the balanced development of regions, or, raising the living standard of population. However, such a goal definition needs to be complemented by quantifiable (measurable) targets, i.e. to define indicators, indicators to be used to verify the objectives. For example, to set the target for regions to reach at least 70% of GDP per capita average of selected countries (e.g. the European Union) over the set time horizon (Okreglicka, et al., 2015).

When it comes to objectives hierarchy, it is possible to define the main (top) objective. To be achieved it is necessary to meet the basic (partial) objectives, which can be further elaborated to more detailed, auxiliary goals, as the scope of regional policy is quite extensive. It is also necessary to pay attention to interrelationships among individual objectives. Targets regarding interaction can be identical, complementary (com-

plementary goals that are supported by the top goal), competing (mutually exclusive ones that act contrary from the ultimate goal) or indifferent (mutually independent) (Larry, 2007; Belajová, Fáziková, 2005). Rajčák, (2002) argues that regional policy objectives are required to be aligned with economic policy objectives such as economic growth, high employment, price stability and balance of payments. However, these objectives are mutually inconsistent, it is virtually impossible to be met reciprocally. For this reason, there may be a situation where the individual objectives of regional policy will partly overlap, respectively. to exclude what needs to be addressed within their determination and implementation (Buček, Rehák, Tvrdoň, 2010).

In the previous part of this chapter, we have put forward a number of insights into the understanding of regional policy concept. These definitions, either directly or indirectly, result in objectives, i.e. the objectives of regional policy. These objectives can be economic, social, but also ecological or spatial. As the heterogeneous nature of regional policy, as aims are different in academic community. Postránecký (2010) states that regional policy is an important objective of regional convergence within a given territorial unit and its key feature is its selectivity, i.e. the differentiation of the intervention focus in favor of selected problem in regions that lag significantly behind their average - a measure being socially recognized as unwanted. On the other hand, according to Buček, Rehák and Tvrdoň (2010), the objectives of regional policy are of a dual nature. These can be aimed at increasing the effectiveness of implemented regional policy (the relationship between national economy development as a whole in terms of its leveling compared to other countries and the development of regions within national economy), i.e. the issue of optimal resources allocation in relation to achieved growth and effect; or equality objectives, respectively leveling the socio-economic level of individual regions within the national economy, i.e. reducing interregional discrepancies. Habánik (2015) in formulating the objectives of regional policy takes into account a wider scope of the subject under consideration and considers as the basic objectives of regional policy following aspects:

- to make conditions for long-term increasing of living standard and quality of life for population in region,
- rational spatial planning,

- effective management of natural resources located in region,
- environmental protection, environmental aspects of regional development,
- balanced social and economic development.

This definition includes economic, social, territorial and environmental objectives, complemented by the need to make effective use of available natural resources in various regions. These objectives are very closely related and it can be said that the social and economic development of region and of the whole national economy can be achieved by creating prerequisites for the quality of life growth of population by effective use of region's resources, by rational spatial planning under in terms of environmental protection. McDonald and Dearden (2005) as a regional policy objective refer to the reduction of economic and social discrepancies, i.e. mitigating disproportionate regional development disparities. Regional policy objectives further include achieving greater economic performance, competitiveness of regions, increasing employment and living standards to ensure sustainable development, and meet national goals such as economic growth, sustainable development, social and political stability, opportunity equality for population and income distribution in a way that most citizens consider it fair and economically stimulating (Rupert, 2000). Different regional potentials, natural conditions and available mineral resources, economic activities allocated in regions, labor force scope and quality, infrastructure level, agglomeration benefits and many other factors are reflected in overall performance and competitiveness of individual regions, closely related to employment levels, unemployment, wage and salary levels in region, and the overall living standard of region's inhabitants, and therefore correctly incorporated all those aspects of previous definition reflect the regional policy objectives (Hitiris, 2003).

Lacina (2008) formulated the main objectives of regional policy as follows:

- endeavoring to contribute to harmonious and balanced development of particular regions,
- efforts to reduce discrepancies among the levels of development in individual regions,

- the economic and social development enhancement in individual regions with an emphasis on the exploitation of social and economic potential.

In this way author linked two categories of views to the essence of regional policy, with an emphasis on exploiting the regional potential. There is a controversy in professional circles as to whether the objective of regional policy is to reduce or, to balance regional discrepancies, or to focus on balanced regional development in order to increase the level of national economy as a whole in order to move closer to the level of more developed states (Lacina, Sekerka, 2008). Hitiris (2003) and Larry (2007) argue that, on one side, there are advocates mitigating regional disparities, based on the fact that the extreme differences in regional levels could lead to social and political unrest especially in less developed regions where there is high unemployment, low income and low standard of living, resulting in the whole national economy. However, their opponents prefer regional policy to be aimed at growth and development of all regions, highlighting the activation of available resources. They reject to spend funding for backward regions development without seeing their effective use, while they advocate more developed regions, which would not obtain under these conditions help to their development; however, there is a high probability that any aid would be used much more effective than in less developed regions. They therefore propose to shift the support and investment to those regions where the most beneficial effects are expected. However, both forms of regional policy are extreme, and therefore practically managed regional policy is being implemented by their mutual combination, i.e. growth efforts and the development of overall economy to bring it closer to more advanced countries, taking into account the mitigation of unjustified regional disparities and the search for ways to promote the efficient use of regional resources (McDonald, Dearden, 2005). Whereas regional policy is only a subset of economic policy, according to Habánik (2016) it is impossible to believe that regional policy by itself will generate automatically the sustainable and gradual trend how to balance regional discrepancies or mitigation. This is a consequence of the fact that regional policy is only one of the instruments of economic policy and if its effectiveness is really to be reflected, there

must be the coordination of sectoral policies with the fiscal policy of government and regional authority.

### *Regional Policy Entities*

According to Baldwin and Wyplosz (2009) as a prerequisite for a proper implementation of regional policy there is the need to define the institution and bodies responsible for the management, implementation and control of regional policy, i.e. to identify the regional policy actors. They include the relevant state administration and self-government bodies at different levels, as well as other supporting organizations (e.g. non-profit organizations, professional and interest associations, research institutions, corporations, regional development agencies, foundations for regional development). From this point of view, some authors see regional policy as an institutionalized system that links the local level of cities and villages with the economic and social strategy development at regional and national (central) levels. Individual institutions have different competencies in regional policy process implementation, depending on the level at which they operate. Buck, Kehák and Tvrdoň (2010) see regional policy entities as "regional policy actors" being different in their impact options and having a differentiated impact on regional development and operating at national and regional levels. They divide them into formal (main) regional policy actors whose competences arise from the law, and informal actors whose participation is neither formally given nor mandatory.

In regional policy, the role of state institution at national level is irreplaceable. These entities have a key role in the development of regional policy and regional development strategy, they process conceptual long-term and medium-term documents aimed at achieving the objectives of regional policy and create the conditions to meet them. There is a big number of subjects being involved in regional policy implementation at regional level, resulting from their regional scope and the number of regions in particular national economy. These include state administration bodies at lower levels and regional self-government institutions, which, like state institutions at national level, play a key role in regional policy implementation (Mitchel, 2006; Jovanović, 2014). In addition, at regional level, a large number of development agencies,

associations and third sector organizations are largely involved in the development of a particular region. El-Agraa (2004) argues that individual companies and organizations support, for example, development of tourism in the region, culture and sport, scientific and research base, educational level of population, expansion of informatisation. They foster public participation in public administration, also focus on maintaining traditional crafts and productions in region, exploiting natural potential, and so on. Similarly, such associations and organizations also operate at local level, mostly at the level of the lowest territorial units, where they are complementary to regional policy, next to the regional authorities at the lowest level (municipalities and municipalities), aiming at ensuring a balanced socio-economic development.

Particularly in case of regional and local levels of regional policy implementation, it is necessary to cooperate and coordinate the various stakeholders, taking advantage of experts living in region, possibly having a positive relationship with the region. Similarly, partnerships and cooperation with companies operating in region can ensure comprehensive coverage of particular issue and activation of regional development through cooperation between the public administration, private and third sector (Habánik, Koišová, 2011; Výrostová, 2010). Hitiris, (2003) states that regional policy actors at regional level have the significant advantage of knowing more closely the specificities and disparities in different regions, and consequently the regional policy focus gradually can be shifted from the central level to the regional one, along with the shift in competence, responsibility as well as necessary financial security. An inalienable condition for regional policy implementation is to ensure an adequate amount of financial sources being necessary to implement specific regional policy measures. Alike regional policy actors, public sector, private and third sector institutions may also include public funding for regional policy development, in addition to private sources and funding from a third-sector bodies, perhaps supplemented by transnational sources (sources of different territorial and economic clusters), which in some national economies can play a decisive role (Buček, 2006; Rajčák, 2002; Snaar, 2002).

### *Regional policy tools*

The achievement of regional policy objectives being set for the relevant period is ensured through adequate instruments. It is about activities, means, measures, instruments whose effect is assessed in terms of how the intended goals have been achieved. The choice of instruments and their combination depends on a number of factors and circumstances, from the initial status of each region (level of natural and human resources, technical level and R&D), institutional, legislative and financial possibilities and assumptions, and of course the expected result, i.e. the status to which it is required by the implementation of regional policy to be achieved. Therefore, regional policy instruments are usually deduced from their objectives. Habánik (2011) under the instruments of regional policy understands practical, particular or general policies and means whose active use helps to meet, respectively to achieve particular regional policy objectives.

In professional literature dealing with regional development and regional policy, there are many ways how to classify regional policy instruments. Wokoun and Mates (2004) underline the division of regional policy instruments into two basic categories - financial and non-financial instruments. Financial instruments include non-investment and investment aid (financial transfers and non-repayable grants, grants, partial reimbursement of the costs incurred, interest rate subsidies, loans and borrowings, loan guarantees), capital participation, tax benefits (tax holidays, tax rebates, deduction on social and other statutory insurance) and budget benefits (advances in tax revenues, extra budget subsidies). Non-financial instruments consider administrative and institutional instruments and non-financial instruments, for example, consultancy, promotion, special economic zones creation under and so on. Under the principles of economic theory Habánik (2012) are dividing regional policy instruments into the following basic groups:

- a) level - macroeconomic, microeconomic,
- b) the nature of development factors - endogenous, exogenous,
- c) time – short-term, long-term.
- d) nature of impact - economic (property usage), non-economic (programming, consultancy).



According to O'Brien and Williams (2013) microeconomic tools affect individual economic entities (households and firms) and are aimed at supporting the allocation and reallocation of capital and labor. The allocation and reallocation of capital is linked to the allocation of capital to individual sectors and regions. It is possible to use various tools, for example, tax incentives and rebates, tax holidays, subsidies intended to attract foreign capital, investment and non-investment subsidies, support to create proper business environment, particularly small and medium-sized enterprises, interest subsidies, financial transfers and others. Breslin (2002) argues that capital allocation tools are highlighted in particular by Keynesian approach to regional development by focusing on diverting labor demand to regions with high unemployment or by investment growth enhancement and the expansion of economic activity in lagging regions.

The allocation of workforce in a particular territory can be influenced by various training and retraining courses, but also by providing support and compensation when leaving to find a job. According to Snaar (2002), the reallocation of workforce into regions with job vacancies can be managed by financial support to cover the cost of relocation or accommodation, in rented apartments. The use of tools for labor force allocation is recommended by neoclassical regional development theory, underling to balance regional differences through labor migration into a region with higher wages.

In general, macroeconomic instruments act on the economy as a whole and are affecting the main macroeconomic indicators. In terms of regional policy, selected macroeconomic instruments from the fiscal area are used to achieve its objectives such as monetary and foreign-trade policies to influence the income (s) or expenditure in regions. These instruments are not regional policy instruments in the real sense (i.e. they are not directly regional policy instruments) but have a regional impact. In the area of fiscal policy, the state budget is the main instrument. It is a redistribution tool how to split funding among regions through the system of taxes and levies and the structure of state budget expenditures (Reinert, 2012; Lairson, 1993). Regarding the revenue side of state budget, it is theoretically possible (but practically difficult to implement) the implementation of different tax rates and lev-

ies for individual regions, showing the benefit for more backward regions. Through the expenditure side of the budget, public resources are redistributed in accordance with the state's (and therefore regional policy) intentions, using the principle of regional differentiation and regional addressing expenditure (Havierníková, 2012a; Krugman, Obstfeld, Melitz, 2014).

Výrostová (2010) also presents the classification of regional policy instruments according to the type and power of instruments:

1. information measures and consulting,
2. financial instruments.
3. infrastructure measures.
4. regulatory measures.

Information measures and consulting are covering the promotion measures for particular regions within the domestic economy particularly regarding the foreign environment, regional and local marketing, information on localization benefits for firms in different regions, information provision to citizens, counseling services for firms and municipalities. However, the instruments in this area have the lowest intervention force, in terms of increasing the usage of information and communication technologies, their significance is constantly increasing and they are not negligible when implementing regional policy.

Among the regional policy financial instruments belong mainly subsidies, financial support and transfers from public budgets at all levels, as well as from supranational sources (EU funding) for companies, but also local authorities at different levels. There are also included grants and loans with preferential interest rates or repayment terms (longer repayment periods), repayable financial assistance, guarantees, national regional investment aid. Buček, Rehák, and Tvrdou (2010) include here also capital investment subsidies, the land provision at favorable prices or low rents, newly created jobs bonuses, new technologies implementation support, setting up company assistance, educational activities subsidies.

Those financial instruments are used to support innovation, entrepreneurship, increasing employment, information and communication technologies usage, science and research development. According to Rugman (2006) many national economies are also aware of the positive

effects of foreign investment on economic growth and employment and therefore they use financial instruments to attract and retain foreign investors; particularly advantageous conditions are provided to investors putting their investments in less developed regions. The financial support is further designed for human capital development, and in this context, the unquestionable importance of universities in regional development cannot be overlooked. At present, the attention is also paid to building regional partnerships and clusters to support regional development (Rajčáková, 2009; Staab, 2013). The second chapter of this monograph deals with this issue from the EU perspective and the third chapter analyzes the impact of clusters on regional development in Slovakia.

Infrastructure support measures are very important for regional development, and some authors consider the infrastructure as a basic factor for development of regions. Infrastructure connects space, economic activities in space and networks of different importance. According to Beňová, et al. (2006) infrastructure as a set of facilities and institutions creates the prerequisites for the development of economy and provides the citizens' needs in particular state or region. The significance of infrastructure is also underlined by the fact that its facilities are located in the whole territory and serve all the inhabitants. Infrastructure represents a broad set of general conditions necessary for a favorable socio-economic and environmentally balanced development of landscape and region. It is a very wide area of social life, made up of industries, facilities and institutions necessary for the economy to operate, and also affects other economic activities in region within its competitiveness. Infrastructure includes transport networks, airports, ports, water supply, electricity, gas, water systems, educational, medical and cultural facilities, financial and banking services, military and information infrastructure (Baldwin, Wyplosz 2009).

Building up the infrastructure equipment is very demanding for financial resources. The revaluation of this form of capital is gradual and the return is usually long. Investment in infrastructure is less attractive to private capital, often beyond its capabilities. Therefore, public finance investments are of key importance. Public finances represent a set of specific financial relationships and operations running in economic system within governmental authorities, one hand, or on the one hand

between government and other entities (residents, households, businesses) (Gecíková, Papčunová, 2011). The improvement of technical infrastructure (water supply, sewerage, telecommunication networks, energy facilities, waste water treatment plants) will improve the conditions for localization of companies and development the construction for motorways, express roads and high-speed rail routes improving transport accessibility to regions. In addition, big emphasis is put on supporting industrial parks and business incubators. Improvements in infrastructure can reduce costs and time, increase productivity, change in positive way the competitive advantage of companies located in different regions. It is about a multiplier effect that brings infrastructure investment to state government and regional development (Larry, 2007; Staab, 2013).

According to Rajčáková (2005) and Hamalová, Belajová (2011) regulatory (administrative) measures represent the biggest interference within the market mechanism, as they imply a direct ban or permitting for a certain form of behavior of companies or residents. They are mostly used for nature protection in a particular location, and thus it is not allowed to place businesses or build family houses there. A similar role is also played by town planning mechanism determining the industrial zones creation. It is also possible to prevent development in overburdened areas by means of administrative measures.

The previous theoretical discussion reveals that the different views on regional policy instruments breakdown are considerably overlapping. In addition, separate instruments do not apply individually; on the contrary, effective regional policy explicitly calls for the simultaneous usage of multiple instruments from different areas and at different levels. Masárová (2015) argues that coordination of instruments, whether microeconomic tools, coordination between microeconomic and macroeconomic instruments, or coordination of regional policies between entities at central, regional and local level, and possibly also at supra-national level is therefore indispensable.

In professional literature on regional policy, it is also possible to come up with other views on the division of regional policy instruments, many of which are similar, respectively differ slightly or eventually

overlap. We believe that the approaches to the classification of regional policy instruments mentioned above can be considered decisive. In addition, it should be noted that since regional policy is part of economic policy, not only its own instruments, but also other economic policy instruments, also social policies that have a regional impact, contribute to the achievement of its objectives. The usage of individual regional policy instruments and their combination also depends on the applied form (model) of regional policy in particular national economy.

### 1.2.3 Regional policy within the national economic policy

Regional policy is classified among the economic policy components. Generally speaking, the term *politics* comes from the Greek word "poli-tike", which refers to the way in which things are managed by public. The subject of economic policy is the operation of state authorities in economic field. Tvrdon (1995) under economic policy understands the conscious management of economic processes by state and its institutions, the use of economic and legislative instruments with regard to internal and external conditions. The fact that the economic policy is implemented under the specific conditions of particular economy is also underlined by Mitchel et al. (2006), because these conditions differ from one country to another, such as culture, development history, religion, and so on. Within the definition of economic policy, Habánik, Košíšová (2011) have also included its objective and thus they define economic policy as a sum of all measures and policies implemented by state to promote the socio-economic development of society with clearly defined economic objectives. Therefore, leveling and balancing the regional backwardness are the basic objectives of economic policy. Similarly, Haviemikova (2012) describes economic policy as a visual angle, incorporating into the definition the penetration between the theory and practice of economic policy, according to which economic policy represents a set of knowledge on operating the economy, through which state, through its instruments and measures, achieves the set goals and, ultimately, acts on the development both in economic and social sphere.

It follows from the above definition that the objective of economic policy is to increase the standard of living and well-being of society, which

cannot be achieved without the balancing of individual regions development. This is why regional policy is a key area of economic policy. As Habánik, Koišová (2011) note, regional policy with its contents, objectives and tools falls within the area of economic policy, in particular by allocating financial resources and enhancing the sustainability of economic growth and employment. Hitiris argues (2003) that regional policy is implemented in close cooperation with sectoral policies, structural and urban policy, completing them with a regional dimension. Similar to Larry (2007), regional policy is an active part of economic policy, its functional components with a focus on cohesion and a structural policy with a link to social policy, employment policy and labor market within a geographical area.

Habánik, Koišová (2011) describe regional policy as a segment of structural policy and its implementation is guaranteed by laws in institutional arrangements. These standards set the role of state, the division of labor among regional policy makers, the organizational consensus-building mechanism and the financial structure of regional development. Finally, it can be concluded that regional policy is part of the economic policy of the state, whose aim is to influence the structure and dynamics of the development of the national economy; and adds that regional policy needs to be implemented in close coordination with other policies that have spatial impacts on industry policies (e.g. industrial, agricultural, transport) as well as social, housing, fiscal, environmental policy, etc. (Baldwin, Wyplosz, 2009; McDonald, Dearden, 2005).

#### 1.2.4 Forms and models of regional policy

In connection with the development of regional policy mentioned in the previous text, it can be stated that within the regional policy shaping, according to Bucek, Rehak and Tvrdon (2010) its two basic forms can be identified. The first one, simple form was mainly focused on selected regions, usually lagging or depressed ones, and local governments or regional authorities have taken partial measures to eliminate negative development trends or resist them. This form of regional policy implementation due to incomplete approach and low efficiency of adopted measures has never produce any expected effects and has

never significantly affected the quality of regional development in a country. The second one, the developed form of regional policy is characterized by a comprehensive approach to whole regional landscape structure. It is geared to balanced economic, social and ecological development of entire country. This form of regional policy is formed at central level at the level of regions and cities.

In professional literature a traditional and acceleration type (model) of regional policy has been elaborated. The traditional model ensures regional policy through state interventionism. It is based on balancing the social and economic levels of regions, and creating equal prerequisites for population, with the dominance of social goals. Jovanović (2005) argues that regional policy in traditional model is implemented through instruments aimed at supporting direct and indirect localization of private capital in a particular territory, regulated deployment of state-owned enterprises, and financing infrastructure constructions from public sources. A typical feature of traditional model are redistribution processes and the coordination of relations between the state and regions as well as between sectors and regions. Unlike traditional access, the acceleration model is based on free market forces, i.e., it prefers liberalism to state interventions. It is characterized by reduction of state intervention, demonopolization and decentralization. According to Staab (2013) the aim of acceleration model is to create an efficient spatial economic system, to stimulate the development of market mechanisms in region by means of private entrepreneurship activation and competence transfer for development within local authorities. It underlines the usage of region's own potential for its development. Accelerating approach is aimed at supporting small and medium-sized businesses and promoting human resources through job creation support, retraining and education of adults. This model highlights the need to develop development poles through economic and technological centers; the increasing significance of intangible investment; the development of advisory services for regions and municipalities and at last the promotion of environmental care cannot be omitted.

Regional policy was based on relevant theory of regional development having been developed at that time. Blažek and Uhlíř (2011) divide these theories into so-called convergence and divergence theories. Convergence theories (the theory of regional equilibrium) relied on the

assumption that the natural underlying tendency of regional development is to bridge the gap among regions. Representatives of divergence theories (the theory of regional imbalances) are convinced that there is a bigger increase in interregional disparities during time. The regional development theory segmentation into convergence and divergence ones is very important because it makes regulatory instruments to be created, including the regional policy concept. Theories of regional development can also be broken down as to whether they focus on the supply or demand factors that trigger the development. Some researchers highlight the role of supply in regional development assessment. These offer-oriented theories include neoclassical theory and endogenous growth theories emphasizing mainly technological progress as the basis for economic growth. Other researchers lean on theories based on Keynesian and post Keynesian approaches, highlighting in particular the competitiveness of regional export sector, but also a polarization approach that points out to the tendency to be cumulated when disparities in economic growth occur (Výrostová, 2010; Lairson, 1993; Breslin, 2002).

According to Ivanička, et al. (2008) we can talk about the existence of two basic types of regional policy. The first is a "strategic" regional policy being based on achieving external competitiveness of state as a whole by enhancing the competitiveness and attractiveness of the state's core agglomerations. The second type is the "insuring" regional policy, which is aimed at mitigating economic and social problems in lagging or structurally affected regions and strengthening the internal state cohesion.

The specific form of regional policy was depended on the actual circumstances, circumstances and conditions in the relevant period of its implementation. As Tvrdý states (1995), contemporary regional theory trying generalize the experience of market economy countries for the whole previous period has led to the conclusion on three basic regional policy models: the central-allocation, private-business and decentralized-coordinated model.

The central-allocation model was applied in the early stages of regional policy elaboration being based on Keynesian theory of state interven-



tionism. It is about the implementation of a central redistribution strategy based on the development philosophy for all regions. Its advantage was the operative 'solution of the acute lag of regions. On the other hand, it has a disadvantage. that it does not help to create an economic situation in regions that would create the prerequisites for regional sustainable development through internal factors activation (Baldwin, Wyplosz, 2009; McDonald, Dearden, 2005).

According to Jovanović (2014) the business-to-business model has been applied primarily in states governed by economic liberalism philosophy. The success of this model depends on the level of regional discrepancies, infrastructure development, and the legislative origins of regional policy. Generally, this model is not being applied in its pure form, usually it is a combination of the elements of liberalism and the element of interventionism in problematic regions.

At present times, a decentralized coordinated model is in action in most developed countries. It is based on the premise of the development and stability of systems and their coordination by multinational institutions. Regional policy is a legalized and institutionalized system that combines the direct but also selective intervention of state government into regional development by indirect interventions being geared towards activating endogenous factors of regional and local development. At the same time, there is a process of decentralization and democratization of regional policy, which gradually shifts responsibility for regional development from state government to regional authorities and municipalities. (Buček, Reháč, Tvrdoň, 2010).

When it comes to the theory of regional development, there is a distinction between exogenous and endogenous regional policy. Exogenous regional policy is geared to reducing regional disparities by supporting the mobility of production factors, i.e. emphasis on external development factors. Such a form of regional policy is used by various instruments to attract entrepreneurs to a particular region, to promote entrepreneurship, to support labor mobility. On the other hand, endogenous regional policy underlines the need to mobilize the region's own resources to increase the production capacity in region. Such regional policy focuses on the use and development of potential actors in re-

gion, whether human resources, natural resources, capital or infrastructure, while regional and local authorities and institutions are considered driving force to ensure and enhance regional development.

### **1.3 Regional development – general characteristics**

The region can be understood as a system in which inverse but also direct links of social and economic nature prevail while respecting internal conditions, dignities and specifics, including external factors. Each region disposes of internal and external sources that shape conditions for its development. Regional development is determined by regional policy within its competencies and capabilities that follow the society goals of development strategy, and development of social and economic relations using human capital resources, human potential, capabilities and competencies.

#### **1.3.1 Region – the basic overview**

To assess any issue requires the definition of theoretical aspects of the phenomenon, as well as the description of relationships, connections and interactions. In professional literature, it can be found a different understanding for the division of a particular territory. Ivanička et al, (2008) considers the region in its broadest sense to be the territory in which economic and social activities are organized in a functional manner using specific natural, demographic (human) and economic resources.

According to Hamalová (1996), regions represent the basic territorial elements of regional policy, they act as addressees for economic and social development concept of a center and as activation initiators of their own development potential and local policy. From the above, it can be seen that territorial differentiation is a crucial element of the whole socio-economic factors complex.

According to Buček (2006), region may also be a territory in which, according to long-term regional policy objectives, balanced economic and social relations using local resources, human and economic potential are to be created or developed. Or, as stated by Habánik, Koišová

(2011) region can be defined as a geographically limited territory that has a set of qualitative and quantitative conditions to form a diversified territorial economic and social system in which there is a high intensity of economic and social internal ties, region develops optimal ties with other territories and is capable of reproducing growth needs from own resources.

Some other authors agree with the definition of a region as a basic unit for which a space can be divided, where the region represents a spatially bound system of variables which are more strongly interdependent than other variables. Region can also be defined as a subsystem of state spatial system or a structured unit, which is characterized by economic, geographical, social, cultural, historical, national and other characteristics. Region can be also described as an essential element of economic space that simplifies reality and also is an important element in the conditions of current decentralization and globalization processes (Ivanička et al, 2008; Klamár, 2002; Stiglitz, 1997).

According to Lacina, Sekerka (2008) region can also be specified according to selected criteria (e.g. GDP per capita, employment rate, unemployment rate, gross added value, educational level, sectoral composition). Region has integrated resources that have the following character acting as:

- allocation and reallocation resources,
- internal regional development sources,
- sustainable development sources.

The definition of a region is the subject of economics theory, geography, urbanism and other fields of science within the formation of regional units and structures. Industrial revolution, industrialization, services development, specialization, division of labor, foreign trade, integration and globalization processes, economic cycles and crises are shifting the exploring methods and techniques on the time trajectory and level of knowledge. According to Maier, Todling (1998) region is to be understood as a coherent territory, cultural, social and economic self-sufficiency at an adequate autonomous level. In general, it can be said that region is a territorial administrative or politico-administrative unit with a precise competence of administrative authorities in a territory, the boundary of this territory, which may be a district, county,

town, municipality or association of municipalities, towns and so on. It follows that in a general (wider) concept, region is understood as a territorial unit being characterized by criteria and characters (Buček, 2006; Bůšik, 1997; Výrostová, 2010). However, the region is characterized by mutual economic and social links and internal structures forming a complex of relations and hence the basis of the region.

Jovanović (2014) defines region as an area, a space, a place that has a set boundary or is a particular part of a state. In scientific and professional literature, we meet with a diverse and different definition of this concept, while diversity determines the authors' approach in terms of the problem solution and its theoretical and definitive form. These are social, economic, functional, institutional, homogeneous, heterogeneous approaches. Economic approaches are based on assumptions how to use production resources and the relationships between individual markets, mainly the labor and capital markets. This approach is influenced by production capacities, levels of production and technology, consumption, savings, investment, exports, imports, labor, relations among economic operators. Functional access highlights the interaction of interrelationships, especially social and economic ones, and their context. Institutional structure of region affects its dynamics and shapes the overall organization, role, objectives and importance of entities in region as well as outside the region. The homogeneity and heterogeneity of regions depend on how benchmarks and parameters are chosen and defined, in particular, assessment analyzes and level of development (Hudec, 2009; Liptáková, 2008; Baldwin, Wyplosz, 2009; McDonald, Dearden, 2005). To understand region as a territory is too narrow, it can be used in some geographic and factographic works; defining region as a socio-economic unit means to classify economic potential, administrative division, institutional arrangement, and other considerations within the regional development.

According to Benčo (2005), the region can be defined as part of the earth surface with one or more characteristics, for instance natural ones as the result of human activity and giving it a degree of unity, making it different from the areas it is surrounded by. It depends on individual criteria used for differentiation. Region can be defined economically, socially, geographically, politically, demographically. Unlike mu-

municipalities and other settlement units that have been set up at the bottom up approach, regions are predominantly constituted by governmental decisions based on internal territorial and administrative divisions.

According to Lipková (2006) and Potomová, Letková (2011) Statistical and geographical classification of a regions reflects the disparity assessment structure within the EU Common area, known as NUTS (Nomenclature of Territorial Units of Statistics). The EU's statistical territorial units assist Eurostat to compare the social and economic indicators of economies and individual regions in EU at NUTS I up to NUTS III level. In order to ensure a certain degree of comparability among individual territorial, geographic and statistical entities, population intervals are defined for particular levels. At statistical unit NUTS I level, the population interval is between 3 and 7 million, NUTS II 800 to 3 million and NUTS III. 150,000 to 800,000 inhabitants. From a geographic point of view, we distinguish several basic groups of regions such as:

- micro-region,
- macro-region.

Region can also be understood as an administrative unit in terms of the performance of local government and territorial authority or a spatial unit with different degrees of social and technical infrastructure, i.e. with overall equipment, functioning and potential. Jovanović (2014) segments region into following groups:

- a) homogeneous areas based on one element,
- b) multi-element homogeneous areas,
- c) nodal regions,
- d) developing regions,
- e) planning regions.

Homogeneous areas based on one element are defined by a dominant geographical feature. Multiple element homogeneous areas are also called group - cluster regions. Natural conditions criteria prevail over social and economic development indicators. Ivanička (2007) explains the nodal region through relations that result from spatial, social and economic activities in a particular territory. Than the term "region" is understood a territory such as a state, city, municipality, cadastral area

with internal boundaries bounded by a certain area. Developing regions are working with growth poles that determine the parts, units or sectors of more significant economic dynamics, and its effectiveness highlights the essence of social and economic development. At the poles of growth there is occurring a relatively rapid processes of urbanization and industrialization, the income base and the number of inhabitants are increasing, structural changes are overtaking cyclical fluctuations, making these parts of regions or entire regions more resistant to crises. Axis poles also developed from growth poles, for example, Pov-ažie, Podunajsko, Pomoravie or triangles: Brno - Vienna – Bratislava. Basically, it can be described as a form of comparative advantage, as knowledge, innovation, infrastructure create conditions for regional development.

On the basis of theoretical and methodological analysis, we would characterize the region as a territory, respectively, a geographic unit that is divided into hierarchical levels and located in the structure of regional economy, this includes functional, programming and administrative region. Region understood within this concept will be seen as an object regarding our next discussion and analysis in terms of regional development processes.

### 1.3.2 Objectives and tools of regional development

In general, by the term development it would be understood a gradual direction towards a higher living standard and the quality of life in a particular territory. Development is inevitably linked with implementation of partial policies that create a coherent framework of economic policy through interaction. Development has its own quantitative and qualitative character, and sectoral policy co-operation is a key tool for its security. We understand development as a process of change that gradually enhances the efficiency and effectiveness of using endogenous and exogenous resources. According to Hamilton, Wepster (2009) and Dicken (2007) economic theory strictly distinguishes concepts of growth and development. While development has elements of structural, content and qualitative changes, growth is a quantitative indicator; after analyzing its components and structure, we can define its

qualitative level. If we want to define the concept of regional development, we also take into account the territorial principle. A key aspect for regional development is the social and economic aspect of processes such as:

- growth,
- stability,
- cyclicity
- dynamics,
- structurality.

According to Vaňová (2006), economic development cannot be executed without social and territorial development and vice versa; since they are all interconnected, complementary, influencing and overlapping. However, links among the factors of development in regions, their composition, their typology and their potential must be included in the overall conspectus. If we include the activities of central and local government institutions, we got into the position of using regional policy within regional development. The theoretical basis of its definition can be considered as the basis of neoclassical theory in terms of making the economic systems be balanced and production factors mobility. Nowadays, within confronting the original theoretical backgrounds, it is necessary to take into account other, not only economic factors. In particular knowledge transfer, innovation capability, human capital, internal potential, social conditions, urban and cultural heritage, and so on. Habánik, Koišová (2011) and Hitiris (2003) argue that the link between regional development and regional policy is seen within removal, mitigation of social and economic discrepancies, while lately, the structure of regional policy-makers is gradually changing by shifting the competences from central government to local government level, with a special status for the EU institutions in this structure. This also corresponds to regional policy instruments usage. By Reháč (2006) regional policy requires a mix of tools that enable efficient and effective use of internal resources in combination with external factors. The partnership of local authorities allows public character to be preserved, it gives the possibility to organize functional regions, to optimize different dimensions in terms of local and regional interests and it does not disturb social continuity.

According to Dicken (2007), development is a factor that can be illustrated with a magical pentagon with edges: growth, labor, autonomy, cooperation, balance. Development factors can be internal and external. Among the internal ones can be assigned: mineral and natural resources and wealth, human capital and potential, social and technical infrastructure and assets. External (exogenous) factors are related to the overcoming of national and regional economies and policies and are formed by their legislative environment, strategic and development documents, regional policy, fiscal policy, structural policy and their instruments. As a result of development factors action is supposed to be the increasing standard of living, which in the citizen's perspective includes housing, social and health care, cultural and sporting activities, education, leisure, job opportunities and other elements directly or indirectly related to satisfying needs of people living in a society.

Regional development is both affected and limited by potential options, which to a certain extent reflects its sources such as natural, geographic, demographic, infrastructure, capital, and technology, while it is about more or less effective combination of these inputs into the region's output, or the co-ordination of processes. Hittiris (2003 states that potential in a region is therefore the use of assumptions and opportunities of source equipment in accordance with current and future goals and priorities. In economic theory there is also the division of regional potential into the following kinds of potential:

- positioning, resp. surround,
- internal and external,
- overall and integrated,
- dynamic, resp. non-dynamic.

Economic theory is based on individual economic, empirical, scientific and philosophical approaches, such as social science and its theoretical models, in particular the neoclassical model, the Keynesian model and the growth poles model. Recently, the theory of self-studying regions has been discussed, which considers the competitiveness and innovative capacity of regions to be based on knowledge, innovation, technological and non-technological inventions and the ability to absorb their capacity as key parameter (Lacina, Sekerka, 2008; Liptáková, 2008; Snaar, 2002). The use of existing potential in region also depends on



the application of regional policy and the interest of all local and regional actors such as local authorities, firms, professional associations and chambers, development agencies and so on, as regional development engines. In this context, there is an innovative regional policy integrating the product and service innovation, new technological processes implementation, and innovation barriers limitation. An open idea remains the allocation rate of innovation activities within small and medium-sized enterprises and multinational corporations in a region in terms of their impacts on regional development (Dicken, 2007).

Regional development is a gradual process being characterized with the necessity to solve predefined problems. Regional policy is currently mostly ensured through structural policy instruments. Success, meaningfulness, relevance and effectiveness depend on the ability to implement those tools within specific regions, which is a gradual but, in particular, constantly changing process, reflected in knowledge, capabilities and responsibilities for implementation at national and regional levels. By Výrostová (2010) regional development is divided into three categories that correspond to institutional divisions, competencies, planning and resources:

- a) the reference European level,
- b) the national reference level,
- c) c) at local and regional level.

At these levels, there is a need for co-ordination in achieving the goals of convergence and cohesion, while at the same time a subsystem of economic and social relations within the organic regional development must be created in a natural way. The local and regional level, predominantly represented by regional authorities, local government, education and research and development organizations with a regional dimension, innovation activities and employers' (production) spheres, are part of the economic policy objectives in the proportions of spatial planning and geographical boundaries. The national level aligns the synergy effect with the common program and planning platform of European Union with the needs of regional economy.

Regarding the theoretical and methodological approaches to regional development, there are distinguished:

- a) a traditional-conservative approach,

- b) the current approach,
- c) invention based approaches.

The traditional (conservative) approach uses the allocation of resources from the central level to individual regions - regions, with the national economy aspects prevail against balancing the discrepancies. The current approach is based on the application and conditions of EU regional policy and common programming (Jovanović, 2014; Kačirková, 2008).

There have been created a considerable number of regional development theories however, their set is conceptually diverse, so their starting principles are often contradictory. According to Blažek (1999), into the first category belongs the theoretical theory of regional equilibrium, so-called convergent theories, the authors of which point out that the key position and objective of regional development is to balance differences. The second group is the theory of regional imbalances (so-called divergent theories), the essence of which is that there is a further increase in the magnitude of discrepancies in development course. The fundamental difference between the two theoretical approaches lies in what is the cause of leveling and the difference within the regional discrepancies processes. This is confirmed by Buček (2006), which states that one of the basic findings of regional economic theory is that in terms of the imperfect market environment and in the presence of positive and negative externalities the economic activities are distributed unevenly within regions.

The above is followed by the division of regional development theories into the demand side or supply side economy theories. This is particularly relevant for regulatory instruments development, including the regional policy content. Hamalová (1996) argues that regional policy is one of the forms when government seeks to reduce regional disparities at regional level. Categories of regional development objectives are as follows:

- a) economic objectives - fiscal neutrality, economic sustainability, fiscal decentralization,
- b) social objectives - redistribution, balancing,
- c) political goals - interests, ideas, visions,

- d) competency objectives - responsibilities, resources and decision-making transfer.

Regional development is usually initiated by top-down administrative, economic, social and power interventions, while regional governments and institutions are supposed to have a dominant role. The endogenous development strategy concept promotes territorial (horizontal) approaches to sectoral (vertical) management, thereby the decision-making, accountability and autonomy of institutions in regions are strengthened to exploit the potential of the territory (Hamalová, Belajová, 2011). The incentive is the pace of social and economic processes, regional economies restructure, globalization and regionalization, social, health and demographic aspects, the limitation of public finances and sources.

The aim of regional development is to ensure a more balanced development of individual regions and to eliminate or mitigate the differences between their development levels. It also includes the need to increase the competitiveness and performance of regions. Regional coherence will require a continuous and gradual transfer of government competences to transnational integration and regional authorities, but the role of national economies would get weaker. As stated by Apleyard, et al (2006), the inner forces guiding the coherence process include:

- a) economic integration and interdependence;
- b) balancing of social differences,
- c) formation of new economic and political arrangements.

According to Benčo (2006), regional development is a long-term systematic process of positive changes in regional economy, which includes all its actors, i.e. businesses, institutions, public authorities, households, and which derives from individual capacity of regions to produce with comparative advantages and creative resources usage that the region has and is equipped with. It follows from the above definition that it is important to ensure the interlink of regional development underlining the sustainable development and its individual components - economic, social and environmental.

Sustainable development can be considered as a targeted, ongoing, long-term, comprehensive and synergistic process affecting all areas of

life and taking place at different levels - local, regional, interregional, sub-regional, national and transnational. Through the application of practical instruments, it leads to a functioning model of economy and society, which qualitatively satisfies the material and social needs and interests of individual subjects, while respecting human and natural values and capacities. According to Klamar (2002), regional development is a set of social and economic processes and relationships in region. These processes and relationships affect all regional components although not immediately, but within a stepwise chain reaction. On the contrary, individual regional components (as well as their spatial structure) influence the course of regional development.

By Hamalová (1996), regional development considerations show that it is a complex process that is affected by many factors and conditions. The main problem, therefore, is how to assess these processes. Indicators to assess regional development must measure the dynamic processes taking place in each region. Each region represents a certain type of economic mechanism, which needs to be adapted to indicators for its assessment. Principally, regional development assessment indicators should meet the following criteria:

- indicators must reflect changes in the levels of economic development,
- are statistically detectable, i.e. the statistics is currently available or will be in the future,
- the set of indicators should be optimal for their use in analyzes,
- the selection of indicators may be narrowed by the fact that some indicators are in a functional relationship with others.

According to Kovárník and Stejskal (2009), regional development instruments have been developed in three waves of development. The first wave was to raise funds for development through various grants, subsidies, loans and at the same time to create a favorable business environment. The second wave was to support new businesses, to create counseling and training through local government. In the last wave, businesses with growth potential are supported by deciding on projects that drive growth in companies in the region.

Table 3. The most significant regional development factors

Endogenous factors	Exogenous factors
natural a geographical capital	strategy a policy of regional development
technical infrastructure	regulatory tools (funding, subsidies)
population	FDIs
social infrastructure	economic power of government
economy	superregional technical infrastructure
local management	political system
inter-sectoral collaboration and partnerships	ethics a morality

Source: own processing by Habánik, Koišová, 2011

Of course, each region has different real and potential opportunities for its development. The overall disposition for regional development is reflected in decisive factors, capacities and extent of their use. Principally, by Habánik, Koišová (2011) and Dicken (2007) endogenous and exogenous factors can be distinguished along with the basic development factors consideration:

- skills and qualifications of labor,
- financial capital and assets,
- natural resources.

The impact of individual factors on regional development can be:

- a) direct, which is reflected in the growth of labor supply, wage growth, business profitability, development, technological and non-technological innovation, infrastructure,
- b) indirect, involved in raising the standard of living and quality of life.

On reflection it is necessary to highlight that the main objective how to enhance regional development is to ensure balanced economic and social development, to eliminate or mitigate discrepancies within the economic development and social development level in regions.

### 1.3.3 Regional development assessment

The system regarding ensuring conditions in regional development is not exclusively about administrative, institutional solution. That is a secondary issue. Regional development is based on a methodological

approach, procedure and procedures. The methodological approach to regional development has its own structure coming out of the theoretical research results, the setting the hypotheses, techniques and tools being used. Basic techniques include analysis, strategy, programming and implementation in practice.

However, since both the internal and external environment is under pressure from change and the ability to react dynamically and flexibly to incentives and processes, regional policy processors need to devise more strategies so that regional policy adequately formulates a choice of tools for regional development implementation. By Benčo (2005) an essential characteristic of regional development is the complexity and integral concept based on modern trends in science and theory in terms of distinguishing the dimensions and hierarchical levels of:

- national economy, where the key rules and procedures are formulated by government,
- regional economy, in our conditions represented by regional governments and authorities at the level of higher territorial units - regions,
- local economy within the competences of towns and municipalities,
- and finally, interregional relations and territorial cooperation in border areas.

Under the conditions of a knowledge-based society, regional development should contribute to creating and restoring of the balance in social, economic and environmental protection areas. From current development knowledge, the study of causes, their analysis and possible scenarios of further direction, it is clear that the discrepancies among regions will still exist. However, diversity, living standards and living conditions must be acceptable in terms of disparities. By Benčo (2005) and Kačírková (2009) regional development should be executed in terms of sustainable development implementation process as a means of:

- preserving social environment, population and employment opportunities in region,
- infrastructure and landscape development,
- competitiveness and new knowledge usage,

- integration of scientific outputs with innovative capability of companies in region.

Sustainable development is understood as a tendency to use human and natural resources within the ensuring of economic growth and the growth of living standards in individual economies and regions. Regional development does not hinder the phenomenon of world economy globalization processes. According to Baldwin, Wyplosz (2009), new dynamic development strategies that include a comprehensive and integrated visions that support authentic development at local and regional levels are required. As justified issue there is the conditionality of economic growth with regional development. From this point of view, the region may outweigh the overall performance of an economy or be below its value, which is likely being lagged, for various reasons. The role of government is to respond to these trends within its economic policy through its regional policy and structural policy tools.

According to Liptáková (2008), we understand regional development as a disaggregated national economic development; as a process that aims to create a viable and productive region to launch a long-term process how to build up the region's competitiveness by making the local potential and spatial specificities be fully used. Based on the theoretical and methodological approach assessment, and the diverse definition of region, the regional development can be seen as a complex of processes, the internal and external potential usage, territorial development, socio-economic development. The link between regional development and regional policy is based on the application of its instruments within legislative, institutional and political framework. Regional development, within the world economy globalization and concentration of wealth, is also, apart from endogenous and exogenous factors, affected by interregional mobility of production resources and commercial relations of economic units.

#### 1.3.4 Regional development strategy planning and support

Regional development means the growth of economic and social potential of a region, in terms of ensuring the growth, competitiveness

and living standards of its inhabitants; regional development thus contributes to sustainable development of an economy. Sustainable development is linked to national strategy, with a specific definition of internal and external resources, vertical and horizontal priorities. Under the potential, we understand all available and usable resources that are available at a particular time, territory, and space. Tools and resources to achieve those objectives can be understood in following types as human potential, natural potential, geographic potential, raw material potential, social potential and economic potential (Ivanička, Ivaničková, 2007; Mitchel, et al., 2006).

For the purpose of a comprehensive approach how to reduce regional discrepancies, the public administration at various levels prepare and approve objectives contained in programming documents in accordance with the regional development objectives, while there is a differentiated allocation of resources within the individual programming documents. Regional development programming documents set out a socio-economic strategy for regional development using a set of methodological priorities; to ensure them multiple sources of financial support to support regional development are used. According to Ivaničková (1998), regional development is an individual ability of regions to produce with comparative advantages products and services required by national and international markets, respectively it is a regional capacity to maintain a dynamically appropriate specific level of interregional and international division of labor through efficient and creative use of resources provided by a region.

The basic Act, which allows to apply the principles of regional policy in Slovak Republic and to participate in EU structural and cohesion policy, is the Act on regional development support. Habánik and Koišová (2011) argue that the Act builds on laws related to public administration reform in relation to the competences of self-governing regions and the municipalities for regional development. The Regional Development Enhancement Act regulates conditions how to manage support for regional development in terms of balanced sustainable economic and social development as well as the related competence of state administration and regional authorities.



Regional development is the result of interests, activities and economic and social proportions being achieved. The regional development strategy should also respond to the timeframe and participation in structural and cohesion assistance from EU funds. However, the methodological basis is a development trajectory being necessary for EU to go beyond a horizon of 2030. A global vision is a system of value ideas that have the power to integrate more generational (two or more generations) development within the scope of national society. The term „strategy“ is of Greek origin with the meaning of a military character. *Stratos* means Army and *Agein* means to lead. Today's significance is more represented by the view that it is rather science and art associated with certain subjective aspirations, wishes or intentions (Jovanović, 2014; Mitchel, et al., 2006).

In economic practice, we understand the strategy as the ability to manage the economy at a macro or a micro-economics level. According to Benčo (2005), the strategy is a set of procedures meeting the vision and concept of stated goals. The strategy therefore has a dynamic character and comes out of a certain vision. Vision is professional idea based on knowledge of a particular problem. Under the strategy, we understand the establishment set of medium and long-term goals and the determination of procedures and techniques to achieve them. For regional development we consider the status quo, which will have a significant impact in the future on raising the standard of living, reducing and eliminating the differences expressed by quantitative indicators. The key issue is to predict future development and the ability to adapt to expected changes within internal and external conditions.

The regional development strategy has its specific features such as time indeterminacy, interdependence, diversity and the influence of internal and external factors. By Buček (2006) the organization of bodies and institutions involved in shaping the regional development strategy is characterized by its dislocation, political division, legislation and standards in addition to the social and economic environment being a subject to political and cyclical upheaval, structural change and globalization process. It should be noted that socio-economic development does not only solve the inconsistencies of national economy as a whole, but also the development at regional and local levels. Regional development strategy is an interdisciplinary problem and therefore scientific

research and practical realization is based on the knowledge and methodological apparatus of several leading disciplines and their mutual interaction. The global objective of the socio-economic development within regions is to increase the living standards and quality of life of population.

A determinant prerequisite for implementing regional development support is the specification of regions where it is necessary to create conditions for their further economic and social development. As reported by Mitchel, et al (2006), regions are often very geographically diverse with a diverse natural base. Economic and human development is often very unequal, causing development asymmetries among regions. Such irregularities require different development plans. Regional development plans must be based on the ability to exploit and integrate exogenous and endogenous facts within the territory's potential. In regional development, the socio-economic environment of a region is also significant. There are multiple relationships that take place not only within the region. The area of a region is made up of socio-economic activities, which to a great extent correspond to its development.

According to Buček (1992), each business unit, in terms of its activity, has economic relations with other units in a certain area. By supporting regional development based on the law, the following objectives are to be pursued:

- a) the economy and business environment development in order to increase productivity, improve the structure of economy, create new jobs and stabilize vulnerable jobs positions.
- b) a skilled, adaptable labor force being able to balance the development of demand and supply on regional labor market,
- c) the R&D development contributing to the overall development of regions to enhance the implementation of new technologies and innovation,
- d) international, cross-border and inter-regional cooperation in terms of regional development to ensure the regional sustainable development interests,
- e) development of tourism,
- f) improving the social infrastructure in region,
- g) improving the technical infrastructure in region,

- h) the development of culture, cultural activities and services, including the development of artistic activities, the cultural heritage protection and the restoration and revitalization of monument fund,
- i) development of amenities and services in region,
- j) measures to protect and create good environment and to reduce bad impacts on environment,
- k) efficient use of regional natural resources enhancement,
- l) agriculture and rural development support.

According to Ivanička (2007), the infrastructure is a synthetic term to designate a set of external conditions for activities resulting from the life of a society on specific territories such as facilities, structures, institutions and networks necessary for running and development of national economy. In professional literature, there is also the definition of social and technical infrastructure, including health and social networking, cultural and sports facilities, transport and energy networks, communication networks and so on. Regarding regional development, the knowledge, state, permeability and potential of so-called public infrastructure are significant aspects. A territory with a modern and built-in comprehensive infrastructure strengthens the attractiveness of domestic and foreign investment inflow, where the overall innovation and institutional maturity of region is taken into account. Regions with relatively weak infrastructure are generally characterized as lagging regions with low degrees and development potential. According to Belajová, Fáziková (2005), infrastructure is a stimulus for development because it provides the necessary factors for entrepreneurship and brings entrepreneurial entities, residents and other institutions the agglomeration effects resulting from more complex infrastructure.

Regional development is a sustainable way to ensure the growth of social, economic and environmental internal and external potential in regions, which leads to the strengthening of competitiveness and thus to raising the standard of living and quality of life. In particular, it is about a dynamic and balanced development within region and regions as a whole, parts of national economy. Hudec (2009) states that development programs represent a factual specification of defined objectives in a strategy, with identification of financial, material and human costs. Such a program is a public document and, after its approval, is followed

by a process of implementation with the participation of actors involved in its preparation. The program of economic and social development is the bearer of regional development policy, the perception of population and local authorities about the goals and quality of life level. The organization of policies and documents within regional policy and regional development is presented by the following scheme in Table 4:

Table 4. Regional development policies organization structure

LEVELS	SCOPE	OBJECTIVE	TOOLS
European Union	EU Cohesion policy	EU Program framework	Social fond, Cohesion fund
National economy	Regional policy	Regional development national strategy	Operation program
Regional economy	Regional development	Regional/Municipal socio-economic development plan	Action plans

Source: own processing by Habánik, Koišová (2011),

This table illustrates the vertical and horizontal layout, links and programming relationships within the Community area as a consensus of the Union of Regions, thus ensuring the interconnection of regional policy objectives at particular levels. Regional development strategies usually include (Hamalová, Belajová, 2011; Habánik, Koišová, 2011):

- a) the conditions analysis and the current state of development in regions,
- b) the characteristics of problems and opportunities of individual subsystems in region,
- c) social and economic analysis in relation to economic development program, territorial potential, production capacity, innovative capacity, business environment, employment, labor force qualification, competitiveness,
- d) (d) measures and strategic objectives for reducing disparities and further development,
- e) (e) formation of tools and possible resources whose effective use enhances stability and sustainable growth.

What matters for strategies implementation is the specification of for regional development factors, such as:

- a) geographical location,

- b) long-term social and economic development,
- c) productivity and competitiveness,
- d) infrastructure and accessibility.

Regional development is the way how to increase competitiveness and to improve the conditions usage of internal and external potential, assuming the dynamic and balanced development of a territorial unit, its parts or the mitigation of negative regional discrepancies. It follows from the above definition that there are theoretical approaches and definitions for regional development, taking into account the potential of a territory and its management by local authorities at appropriate level. If we lead professional and scientific polemic with authors such as Blažek (1996), Skokan (2004), Dicken (2007), Ručinská (2008) regional development and socio-economic development of a region, we understand the way and the ability to change and arrange the differences being not only spatial or territorial but structural demanding co-ordinated and targeted regional policy.

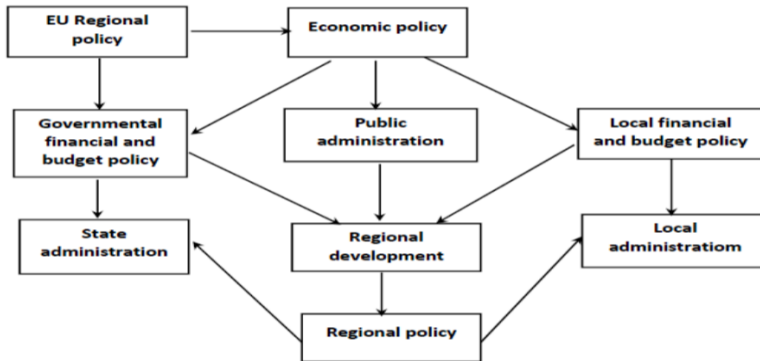
For regional development, the resource structure and implementation of regional policy instruments is crucial. When it comes to economic theory and economic practice the following sources are available (Falťan, Pašiak, 2004):

- national/state budget,
- own resources – regional authorities' budgets, city and municipal budgets,
- foreign resources – loans, credits,
- sources from private sector,
- structural funding.

Local government in region has resources in terms of fiscal decentralization and, through them, as well as other sources, should ensure that tasks are delivered economically and efficiently. the budget of local government is the tool for managing these processes within regional economy environment. We can also say that it is basically a division of public power between government and regional local government. Habánik, Koišová (2011) argue that the budget is a part of public budget and expresses and reflects the degree of autonomy in relation to government, which is equally involved in regional development issues (Figure 8). Public finances are tight with public finances, which are the

monetary expression of individual levels within the public economy when it comes to their income and expenditure. Territorial local government as a subsystem of public administration represents a separate decision on development within its own territory.

Figure 8. Financial Policy, Regional Policy and Regional Development (processes and links)



Source: own processing by Habánik, Koišová, 2011

On theoretical basis this chapter was discussing and making the linkage among three basic aspects such as clusters along with cluster policy, regional policy and regional development later being analyzed within the European Union and Slovak Republic perspectives. Generally speaking, clusters have an impact on improving competitiveness and achieving higher performance through better access to specialized vendors, technologies, information and higher innovation potential of co-operating companies, companies as well as regions. The acceptance of clusters as one of the forms of cooperation leads to the competitiveness enhancement of participating entities and region where cluster is located. Representation of institutions, scientific research centers and manufacturing companies in a particular location creates good conditions for their development. Cluster offers businesses better access to information, better communication tools, promotes collaboration and education, opens up space for advice and lobbying, enables joint promotion and marketing. Companies through savings increase their productivity, within the cluster innovation processes are made and for-

eign partners are seeking. Through these activities, businesses can increase their competitiveness. One of the most important aspects of cluster creation is to secure its funding, which can be realized through various financial resources. Clusters and cluster initiatives can be funded by private sector, public sector, or a combination of both. Fundamental role is played by Structural policy of European Union, which supports the emergence, functioning and development of clusters not only financially but also institutionally and legislatively. Foundation and functioning of regional networks and clusters is one of the important factors of regional development. Regional networks and clusters are created as a result of positive but also negative impulses, both possibly of an internal or external origin. Networks and clusters are flexible connections of regional partners being able to develop and realize innovations. To meet this goal an effective policy is required.

## **2. EU CLUSTER POLICY VERSUS EU REGIONAL POLICY – PARALLELS, SYMBIOSIS AND SYNERGIES**

EU Regional policy appears to be one of the most important current programs and agenda at EU level which support clusters in emerging industries in EU. Based on the comparative analysis of European cluster policy and EU Regional policy mutual interaction the object of this chapter is to assess the impact of the EU Cluster policy effects on the EU Regional policy regarding the EU competitiveness enhancement in the international economics system. Technological advance, knowledge based production, innovation implemented into new technologies are the outputs of effective synergy how the EU cluster policy can be involved in the EU Regional policy. Those are the tools leading to increasing economic growth, sustainable social and economic development and higher quality of life of European Communities inhabitants. The EU position analysis in international economic relations will also be the object of this chapter with regards to its competitiveness enhancement possibilities within the global economic environment while using the latest science and technology achievements as a synergic output of EU Regional and Cluster policy interaction. This chapter will discuss how EU Cluster policy is implemented into EU Regional policy processes by assessing their synergies and parallels, how important role it plays to assure sustainable economic growth in European Communities and to enhance the EU competitiveness within the international economics environment. Firstly, how clusters are involvement in EU and global turbulent processes will be analyzed, secondly the issue of current challenges in EU Regional policy will be discussed and finally, the EU Innovation policy as implementation tool for clustering in regions is to be sketched out.

### **2.1 Clusters activities involvement in EU and global environment**

At present times clusters are an important part of Europe's economic reality. It is clear that Europe does not suffer from a cluster gap, but the persistent market fragmentation, the weak industrial and research links and the lack of cooperation within the EU mean that European



clusters will not have enough predominance and innovative capacity to face global competition, i.e. to be a world-class. European Union is aware that strong clusters are a source of entrepreneurial dynamics, intense ties with top-level knowledge institutions and a bigger synergy among entities within innovation process. They contribute to creating a knowledge-based economy, which means they have helped to meet the objectives of Lisbon Strategy. In order to help the future of Europe 2020 strategy, clusters have also been given a high priority in terms of so called "Clusters of excellence" programming process.

European Commission with an aim to achieve the world-class clusters in terms of broad-based innovation strategy since 2008 states that in Europe there is a big number of clusters, but because of persistent market fragmentation, weak links between industry and research, and insufficient cooperation within the EU, clusters cannot always reach the critical mass and innovative capacities in EU needed to cope with global competition and gain the global reach. In order not to do so in the future and to help clusters achieve the objectives of current Europe Strategy 2020, a high priority must be given to so-called cluster of excellence. The key role of Commission within supporting the cluster excellence is to complement regional and national cluster policies by continuing to remove barriers to trade and mobility within the EU. A well-functioning internal market provides the best conditions for wider transnational cooperation and mobility for investment, researchers and highly qualified people, being a prerequisite for stronger clusters development in EU.

At the European Cluster Conference in 2010, so-called Clusters of excellence was put into action as one of the key elements of cluster development processes. European clusters to become so-called World-class, they need professional management and "excellent" cluster organizations to provide cluster companies with high-quality services and support synergies with leading research organizations. At present, European Cluster Excellence Initiative (ECEI) is dealing with this issue. This initiative is implemented through fourteen clusters managements of highly experienced partners from nine countries. Their task was to create a meaningful set of quality indicators and peer review of cluster management practices, known as the Quality Cluster Label, being recognized across Europe. One of the initiatives of this initiative is also the

creation of so-called European Cluster Manager's Club, an association of individuals on European managers and cluster creators. As part of European Cluster Excellence Initiative, the European Cluster Collaboration Platform was launched in September 2010. This platform is online and provides high quality information and support to cluster organizations and their members. The goal is to improve their performance and to increase their competitiveness by making internationalization more effective worldwide within international economic relations.

The first clusters in European Union have emerged already before 1990. According to Eurostat data (2018), nowadays the share of these clusters is 3.60% (48 clusters). Even though it is a negligible number among other clusters today, this reflects a significant shift in cluster development in European Union. Other clusters were established in EU between 1990 and 1996. Their share in all EU clusters is 7.92% (106 clusters). Significant change in cluster founding occurred in the period of 1997-2003 when its creation dates back to 375 clusters within European Union. In recent years, many countries have embraced the concept of clustering. Since the early 1990s, only the most advanced states have been doing so, but since 2000, this concept has also been used by less developed countries. This trend continued in next period, i.e. in the period of 2004-2009, when most of today's clusters were set up. With a share of 38.68% and a total of 516 new clusters, this is clearly the biggest boom in clusters formation in European Union. In the period of 2010-2016, 290 clusters have been created so far, which means fewer clusters than in the previous period, but this is a period still under review, so compared to the length of other mapped periods we can expect, that this cluster building trend will continue in, although it is obviously not as strong as it was in the years 1997-2003 and 2004-2009. Based on the assessments being made, clusters having up to 25 members present the biggest group of clusters in EU Member States having a share of 39.17%. The second largest group are clusters having from 51 to 200 members with their share of 28.84%. They are followed by clusters with 26-50 members and 21.44%. The remaining 10.55% is split among clusters over 200 members being clusters with a membership of 201-500 (8.08%) and clusters with 501 members or more (2.47% of the total cluster number in European Union) (Lipkova, Braga, 2016; Lipkova, Hovorkova, 2018; Balaz, 2014).

### 2.1.1 EU cluster programming and legislative framework

There are several **cluster programs in EU**. To increase the innovative capacity and competitiveness as well as for the networking of the high-performing European cluster initiatives with each other, the European Commission provides various cluster and innovation-policy instruments in the different Directorates-General. In addition, most European countries have implemented cluster-specific policies and programs to support the development of sustainable, competitive regions in the national states. Cluster programs in EU are supposed to: improve competitiveness and innovative capacities of regions. At the European Union level there have been first cohesion policy instruments to develop innovative and regional strategies since the early 1980s (Burda, Abrham, Horvathova, 2017). Lipkova (2011) argues that explicit cluster policy programs have been around since the late 1990s. On the part of the European Commission the Directorates-General "Regional Policy", "Enterprise and Industry" and "Research and Innovation" are mainly responsible. The three lead Directorates-General have implemented several actions and initiatives in the context of the particular program priorities, which respectively focus on each other differing promotion and support aspects (Todaro, 2000; Drulák, Druláková, 2014).

Beside the European Commission, the national states have also developed enhanced cluster policies in recent years. Although the country-specific cluster supporting programs also have different priorities in focus and further different instruments are used, they still pursue the same objectives: the need-based support of the cluster actors and the improvement of conditions for a sustainable regional and sectoral development of clusters (Larry, 2007; Lipkova, 2006). An overview on cluster policies of many countries in Europe conveys the cluster platform Germany. Each cluster program is presented by means of uniform criteria. Lipkova (2012) noted that the policies at European, national, or regional levels, should be mutually supportive and reinforcing, and to influence the competitiveness, innovation and performance in Europe. Also Eckey and Turck (2007) argue, that although clusters are mainly national and regional phenomenon, the EU seeks to contribute to the successful creation, development and mutual cooperation.

A significant difference exists between the empirical phenomenon of clusters and cluster policies and initiatives based on their creation or development. The discussions being often of both terms are used interchangeably, which can create some confusion. Haviernikova (2014) argues that active clusters leave traces, which can themselves be statistically recorded, for example in the area of specialization or concentration of employment within the sector. In contrast, cluster policy is an expression of a targeted, focused strategy, creating political priorities and allocating funding to support innovation, regional development or other policy objectives. In reality, however, can be found all possible combinations between clusters and cluster policies, as indicated by the examples: clusters formed spontaneously without any economic policy support; cluster policy sooner or later leading to real clusters; cluster policy with no statistically significant impact on the formation of a real cluster, etc.).

The Competitiveness and Innovation Framework Program (CIP), which ran from 2007 to 2013, was significant in terms of clusters development and promotion in European Union. It was divided into three operational programs. The focus was mainly on small and medium-sized enterprises, supporting innovation activities (including eco-innovation), securing and providing better access to funding and providing services to promote business in regions. It encouraged better use of information and communication technologies and contributed to the information society development, and encouraged the use of renewable energy sources. At present, an active CIP program, entitled "COSME 2014-2020", is currently in action (Bialic-Davendra, et al., 2014; Cihelkova, Hnat, 2008; Mareš, 2007).

Based on the above-mentioned strategic programs and their priorities, a number of expert cluster documents have been elaborated at European Commission level. They mostly have the character of strategic policy intentions, memoranda, or professional working papers. European Union also supports the exchange of information, strategies development and elaboration of expert analyzes, including by means of clusters' associations and initiatives promotion. Here are some documents.

- The Community Strategic Guidelines on Cohesion (CSGC) for 2007-2013. This Guideline was adopted by the Council of European Union in 2006 and its objective was to support clusters as part of the economic development strategies.
- The European Clusters Memorandum, a document created in 2007 by the European Cluster Alliance and its objective is to mobilize support for cluster initiatives and cluster policies in EU, at Union level as well as at Member State and regional levels.
- Achieving world class clusters: Implementing the Global Innovation Strategy, it is a document - a Communication - drawn up by European Commission in 2008, setting out the policy framework for better complementarity and synergies among policy levels to support the development of a larger number of world class clusters in EU.
- The Common strategic framework for EU research and innovation funding, the Committee of Regions' Opinion worked out in 2011 and the Part C is devoted to cluster - The Regional Cluster Dimension. Among other things, it states that although excellence is one of the cluster characteristics, all clusters cannot have the same level of development or international visibility. For cluster, a high scientific level is necessary but not sufficient enough to achieve the excellence status that can be created by proper mix of funding sources, good structure, good governance and the boom of "eco-system", being made up by businesses, research and innovation.
- European Clusters of Excellence baseline - Minimum Requirements for Cluster Organizations, document published in November 2011 in connection with the cluster evaluation process regarding the procedure of getting the Cluster Management Excellence Label.

**The legal form of clusters** in European Union depends on the legislation of individual member countries. It varies in different countries, so there is no uniform approach that would suit everywhere and all clusters as the most appropriate legal form. According to Mitchel, Muysken, Van Veen (2006) the possible legal forms for clusters in EU are:

- Association - non-profit or for-profit,
- Limited Liability Company (LLC),

- Joint Stock Company,
- Hybrid forms - mix of association and public or private limited liability company,
- Foundation.

### 2.1.2 EU Cluster policy management - EU Cluster Initiatives as the way how to promote clustering processes in EU

The large majority of all the clusters we currently observe have developed without the help of any designated policies intended to create them. Given the mounting evidence that such clusters make a positive contribution to regional performance where they exist, pressure is increasing to design policies that can foster the development of clusters or increase their economic benefits. First of all, we will define cluster policies as policies that fall into one of the following categories. Cluster development policies directed at creating, mobilizing, or strengthening a particular cluster, e.g. a national funding competition for the best life science cluster strategies. Cluster leveraging policies that use a cluster lens to increase the efficiency of a specific instrument, e.g. an R&D subsidy provided only to companies in regional clusters where the subsidy is likely to incur spill-over effects beyond the recipient firm (Mitchel, Muysken, Van Veen, 2006; Machkova, Sato, 2007). Lukasik, et al. (2007) states that cluster facilitating policies directed the elements of the microeconomic business environment to increase the likelihood of clusters to emerge, e.g. regional or competition policies that remove barriers for competition among locations. Policies falling into the first category are traditionally at the core of what researchers have looked at.

Regarding the **EU Cluster policy management system** an important event was the establishment of European Cluster Alliance (ECA) and the European Cluster Observatory (ECO) in 2006 as an open platforms based initiatives in order to maintain a political dialogue at European level, which should help to increase the excellence and efficiency of cluster policies that will lead to the creation of competitive clusters. In next paragraphs those initiatives are to be analyzed in more detail. A professional cluster management can contribute to such a development through projects and services that tap into the cluster's potential. The European Cluster Excellence Initiative, initiated by the European

Commission DG Enterprise and Industry, developed methodologies and tools to support cluster organizations to improve their capacities and capabilities in the management of clusters and networks. Being members of the European Cluster Excellence Initiative 13 project partners from nine European countries - all well experienced in the field of cluster management and support - created a uniform set of cluster management quality indicators and developed a quality labeling system for professional cluster management with the aim to get this methodology and proof of quality accepted all over EU.

An initiative called the *European Cluster Alliance (ECA)* was launched in September 2006, as a part of the PRO INNO EUROPE initiative, funded by the Competitiveness and Innovation Program (CIP). The European Cluster Alliance is an open platform established to maintain a permanent political dialogue at EU level between national and regional public authorities responsible for cluster policies development and cluster programs management in individual countries. The ECA is supposed to act as the main driving force for further development of Cluster Development Strategy and should be open to further cluster initiatives. For example, it works with the European Cluster Policy Group (ECPG), the European Cluster Observatory (ECO), as well as with other European networks and organizations such as TAFTIE (European Network of 23 National Innovation Agencies), EURADA (European Association of 150 Regional Development Agencies, European programs and projects focused on cluster policy such as Knowledge Regions, INTERREG.

Very significant initiative appears to be the *European Cluster Observatory (ECO)*, which is an online platform launched in 2007. It is managed by the Center for Strategy and Competitiveness (CSC) at Stockholm School of Economics. It is funded by European Commission through the Europe Innova initiative. ECO provides a unified approach to information and analysis of clusters and cluster policies in Europe. There are data regarding clusters and competitiveness analyzes, a cluster case study library, clusters calendar, but also an online classroom for cluster education. In April 2011, European Cluster Observatory published a report identifying strong regional clusters in individual Member States of European Union at NUTS 2 regional level. The report was produced by means of the Cluster Observatory Scoreboard tool. The European Cluster Observatory, which works with comparable data from all 28 EU

countries, focuses on strong and high-quality clusters. They are identified here by so-called star classification. This methodology is based on the fact that the amount and movement of knowledge and the spillover effects among firms within a cluster depend on the size of the cluster, its degree of specialization, and the extent of location in which the cluster operates. Depending on the extent to which these criteria are met, cluster can get 0, 1, 2 or 3 stars. The European Cluster Observatory marks the strong regional cluster that has at least one star. To obtain stars, it is important to follow three following rules (Krajnakova, Navikaite, Navickas, 2015). Firstly, the size; in order to gain a star, it is necessary for cluster's employment rate to be among the highest in the monitored category within European clusters - it is actually being observed that employment in regional cluster reaches a sufficient level for the emergence of economic effects. Only 10% of clusters with the highest employment are assigned to the star. The second criterion is a specialization where the regional focus is on a specific cluster category and is measured by the specialization coefficient. It is assessed whether the region in a certain cluster category is more specialized than overall economy of all the evaluated regions. If a cluster has a specialization coefficient 2 or more in a region, it gets a star. Finally, it is the dominance associated with the share of employment in a given cluster in total employment in the region. The higher the proportion, the greater the presumption of a higher spill-over effect and economic interactions. The star is to be assigned to 10% of clusters with the highest employment share within the sample under review.

**EU Cluster Initiatives** are operating as the EU cluster policy management instruments putting into actions the cluster policy objectives and making cluster and their members be more competitive and cooperating in order to increase the performance of SMEs and regional development. In 2008 European Commission adopted an initiative to set up a *European Cluster Policy Group (ECPG)* to give advice to European Commission and Member States on how to better promote the development of world-class clusters. Based on the open call, 20 highly qualified people from diverse backgrounds and excellent expertise were selected who during the 18 months' period had to work out the EU cluster policy recommendations set for the next 2010-2020 period. EU explic-



itly encourages its Member States to support clusters and cluster policy, in its core policy paper on cohesion policy for the 2007-2013 programming period in so-called Strategic guidelines of the Community. Based on this document, individual Member States have created their national document titled as National Strategic Reference Framework. In this document, they have identified their priorities how to draw money from EU Structural Funds. Based on this, specific operational programs were defined, which directly draws money for particular projects. Countries that support clusters directly include Austria, Bulgaria, Czech Republic, Germany, Denmark, France, Hungary, Lithuania, the Netherlands, Sweden, Slovakia and finally United Kingdom.

As part of the EU efforts to create more world-class clusters across the EU by strengthening cluster excellence, in 2009 the *European Cluster Excellence Initiative (ECEI)* was launched by the Commission under the Competitiveness and Innovation Program. To continue the successful work of this pan-European initiative which involved 13 partners from nine European countries - the *European Secretariat for Cluster Analysis (ESCA)* was established by one of the partners - VDI/VDE Innovation + Technik GmbH, to offer practical advice to cluster management organizations. Today, ESCA is a network of cluster experts from 28 countries. ESCA offers services in two areas. It supports the development of cluster policies and programs, provides cluster program development support, and supports cluster policy through Cluster Management Excellence Label as a quality indicators set and cluster management practices peer review. It also works with European benchmarking experts and cluster analysis experts. ESCA is a consortium of ECEI project and European Commission.

ESCA's activities are geared towards strong clusters, as strong clusters can foster economic growth through the innovation and regional trade potential usage. ESCA is a creator of the largest project dealing with cluster performance comparison in Europe since November 2010. The initiator was the Danish Ministry of Science, Innovation and Higher Education. The project uses the benchmarking method. In June 2013, ESCA launched the "Cluster Monitor Europe" survey. This survey is focused on environment analysis in which cluster organizations operate. The survey goal is not to make assessments; it is just the "barometer of

cluster development" (Malakauskaite, Navickas, 2011). One of the ESCA's latest achievements is the establishment of Cluster Excellence Expert Group (CEEG). This independent supervisory board was established in March 2013 to monitor the procedures and results of ESCA's awarding process regarding the Cluster Management Excellence Label award.

Creating the *European Cluster Manager's Club* is one of the initiatives of European Cluster Excellence Initiative. It is an association of individuals for European managers and cluster creators. The membership in this club include following conditions: to be an individual working in cluster management; cluster organization has a profile at European Cluster Collaboration Platform; and an effort to become an "excellent" cluster manager and to participate in benchmarking processes within cluster management.

The *European Cluster Collaboration Platform* was set up in September 2010 in terms of European Cluster Excellence Initiative. This is an online platform providing high quality information and a support to cluster organizations and their members. Its target is to improve their performance and increase their competitiveness by activating international co-operation.

The *Cluster Observatory Scoreboard* is a web instrument being presented in 2011 to help small and medium-sized businesses and other organizations evaluate their performance and also find new partners.

Attempting to achieve the excellence status at all levels and optimizing the cluster potential usage are significant to further competitiveness enhancement in Europe, so clusters of excellence are one of the key objectives of EU cluster policy. To achieve this, the *European Cluster Excellence Initiative (ESCI)* has been created. One of the main tasks of this initiative was to create a meaningful set of quality indicators and peer review of cluster management practices, better known as the Quality Cluster Label. That assessment system being developed under ESCI initiative in cooperation with the European Foundation for Quality Management (EFQM) is still recognized throughout Europe. The evaluation is based on so-called EFQM Quality Model, widely used in public and private sectors across Europe and beyond. EFQM is a nonprofit or-

ganization based in Brussels, founded in 1988 to implement the principles of TQM (Total Quality Management) providing a unique platform for organizations to learn and improve their performance.

Within the TQM model, cluster management is required to monitor the following attributes such as: to achieve balanced management; to increase added value for customers, meaning to innovate, manage with vision, inspiration and integrity and through structured and strategic processes; to create a favorable and balanced environment for their employees their work and personal goals; to develop creativity and innovation; to build partnerships with external stakeholders (competitors, key suppliers and subscribers, educational institutions, state and public administration authorities, non-governmental organizations, etc.); to take responsibility for a sustainable development (corporate culture, organizational behavioral, economic, social and environmental sustainability in the context of CSR. After a successful completion of the ESCI, competencies within the management regarding clusters quality management have been transferred to another body called the *European Cluster Analysis Secretariat (ESCA)*. Currently one of the main activities of ESCA is to promote cluster quality management through their evaluation and quality label known as Cluster Management Excellence Label.

In November 2011, the *European Cluster Excellence Baseline - Minimum Requirements for Cluster Organizations* was published. This document defines a set of minimum requirements being required to enable the cluster organization to be included in the evaluation process to obtain the title called *Cluster Management Excellence Label*. It is clear that the attainment of the minimum conditions set out in this Recommendation is not sufficient to achieve the award. However, this procedure can help cluster organizations improve the quality of management and it can be the first step to achieving the award. Clusters can get two different types of awards, two distinct brands. By Haviernikova (2016) the first one is Cluster Management Excellence Label Bronze - striving for cluster excellence. Trained ESCA experts by means of benchmarking method are assessing clusters by comparing them with other organizations and entities. It is an efficient and effective tool how to identify the cluster's potential and then, in the short term, it is possible to develop strategic recommendations for their further development. The second

type is the Cluster Management Excellence Label Gold - proven for cluster excellence. In this case the assessment of clusters is performed by trained independent experts using cluster analysis. To achieve a gold medal, the cluster has to achieve a high level ("level of excellence") in different areas such as cluster structure, governance, funding, and services and recognition strategy with a total of 31 indicators. The evaluation runs two days and is carried out by two independent highly qualified experts using the cluster analysis method. The target of this program has two components. On one hand, it is identifying the clusters having the best management practices, on the other hand it is providing advice on further cluster quality management improvement.

Apart from the above described activities, it cannot be forgotten that European Commission has set up many other online tools to promote cluster activities, including its internationalization. They provide services for particular countries and groups of countries like China and others. For instance, IPR SME Helpdesk helps SMEs protect and enforce their intellectual property rights in China or when it comes to Chinese market, information and services regarding market analysis and promotion export services are provided free of charge. Non-profit organization EU-Japan Center for Industrial Cooperation is a joint project of European Commission and Japanese Government. Its aim is to promote all forms of industrial, commercial and investment cooperation and to strengthen the competitiveness of European and Japanese companies, their cooperation along with the experience and know-how exchange. One of the activities of this nonprofit organization is to provide the information services for clusters, assistance with identifying potential partners for cooperation, exchange of information about clusters. It also provides free educational programs to support cluster development in terms of World Class Manufacturing program (WCM) as a weekly mission to Japan for quality managers being supported by the Competitiveness for Internationalization program. Another activity is covered by Cluster Mission being designed for clusters and their SME members to build contacts and strategic partnerships (Székely, 2008; Taušer, Čajka, 2014; Balaz, Hamara, 2016).

### 2.1.3 Effective clusters operating worldwide

The significance of clusters for region and state in which the business cluster is being built was first described in Paul Krugman's *Geography and Business* in 1991. Since that year, many government institutions and industry organizations around the world have taken this concept of enterprise as one of the main means of national, regional and local development and clusters can be found in many economies of the world, each having its own trajectory and history.

The cradle of clusters is considered to be the United States of America, but spontaneously they began to arise in other regions of the world. Among well known clusters in the world can be included, for example, cluster Silicon Valley region, California Wine Cluster, Arizona Optical Cluster, Manhattan Multimedia Cluster, Pittsburgh High-tech Cluster, Aluminum Kingdom Cluster in Jönköping, Sweden, which includes 100 members of aluminum and its components sector producers, Italian cluster in Montebelluna for the production of sports footwear, Rhône-Alpes Industrial Vehicles oriented to a network of direct-to-market suppliers and their subcontractors, is located in French Rhône-Alpes, Norwegian marine cluster, cluster Bangalore in India, but also Polish cluster Plastowa Valley. The most famous is probably the Silicon Valley region (SV), which covers approximately 1,500 square miles, is about 2.44 million. of population and provides 1.2 million jobs. Silicon Valley, together with US federal capital, generated up to 30,000 new jobs in 2006, resulting in 2.9% job growth in the nation, with an average annual salary of an employee in SV is about \$ 80,000. Invested venture capital in SV (approximately 27% of the total US venture capital in 2013) is located mainly in the areas of research and development, semiconductors, media, telecommunication, information technologies and biotechnology. The total share of registered patents from all US patents was around 14-15% in 2013 (Krajňáková, Vojtovič, 2013; Sejkora, 2014; Tauser, Arltova, Zamborsky, 2015).

When it comes to *global cluster policy*, The Competitiveness Institute (TCI) plays an important role over here. TCI is the world's leading network of professionals, policymakers, researchers and business leaders, contributing to improving competitiveness in both regions and clusters. This institution is open to all members from all countries of the entire

private, public and non-profit sector and is funded from annual membership contributions. TCI's main mission is to collect and exchange information on cluster development around the world, thereby promoting cluster-based competitiveness, supporting a methodology to strengthen cluster competitiveness, and raising the professional level of cluster experts.

The common problem of many countries in the world is the fact that many small businesses hesitate to join a network or other form of joint venture cooperation. These businesses often have a risk aversion and refuse to accept outside assistance, with the exception of specific needs. They too much scared to trust their suppliers and also lack motivation for research and development collaboration.

There are currently many different activities in the world (projects, programs, various organizations) being geared to the development and support of regions and clusters. Recently, so-called *think-tank organizations* have emerged. It is an informal term that refers to an organization, its part or group of experts, engaged in highly synergistic research and consulting in science, technology, industry or business areas (Obadi, Korcek, 2016a). The think-tank usually works based on orders or requests from theoreticians and intellectuals who deal with analyzes or policy recommendations.

The *Intelligent Community Forum (ICF)* can be highlighted as a global think-tank organization for economic and social development that aims to create prosperous regional economies and has a strong focus on the support of associations where businesses from different manufacturing sectors, research and education institutions, or public administration are joined together. It supports how to enter an emerging markets and subsequently new jobs creation opportunities. It offers services, experience, and skills to communities around the world including developing countries. The ICF conducts research, organizes events, offers various programs, publishes newsletters and, last but not least, annually evaluates the most successful regions (clusters). Currently, the organization covers over 120 regions from all continents, especially from the US and Canada (Obadi, Korcek, 2016b).

The awarding regions, respectively. clusters by the title Intelligent community of the Year began in 2002. It takes place in three stages. First of

all, a group of experts will select 21 candidates, this phase is called SMART 21. From them, a narrower group of seven clusters is to be selected the Top 7. In the last phase, from the Top 7 one winning region is selected, which would become the Intelligent community of the Year. The prize ceremony usually takes place in New York in June during the ICF annual summit. In 2013 by ICF specialists' elite group following clusters were selected into the Top 7: Columbus, Ohio (USA), Oulu (Finland), Stratford, Ontario (Canada), Tallinn (Estonia), Taoyuan County (Taiwan), Toronto, Ontario and Taichung City (Taiwan) winning the Intelligent community of the year (Mura, Machová, 2015; Mura, Slezia, 2015).

Now let's get more focused on the cluster of Taichung City being awarded by the title Intelligent Community of the Year in 2013. It has 2.7 million inhabitants, of which 1.3 million live in its metropolitan area. It is a region with huge ambitions. The backbone of the Taichung Manufacturing Industry is a network of 1500 precision machine manufacturers and dozens of thousands of suppliers for small and medium-sized enterprises. Its annual output is 3 billion USD and the world's third-largest machine tool export area. In 2010, Taichung brought together completely different economic areas: a seaport where 70% of workers worked in services and agricultural areas where 50% of people work in industry and agriculture. Collaboration with telecoms companies has created thousands of Wi-Fi hotspots; more than 90% of the population now has access to broadband. The imaginative applications developed in public and private information and communications technologies (ICT) sectors have become the driving force behind global competitiveness. Smaller businesses now have the opportunity to benefit from reduced procurement costs, as well as reduced time to get on market. The system of shipping containers in the port has automated work and shortened the handling time for goods. Extensive assistance was provided farmers to use ICT making improve the revenue, profits increase as well as the possibilities how to place products on international markets. The region and its network of schools have created a real system of lifelong learning, from basic digital education and training to advanced learning and constantly skills improvement process. Management has also focused on tourism, with an annual visiting rate up to 400,000 visitors. The region has only 4.4% of unemployment rate

- only strong industrial clusters are able to achieve it. Taichung believes it has found a way to be economically kept up. Modern technologies and an advanced, well-functioning SME sector indicate that this is true.

By and large, from the cluster policy management system analysis in EU and all around the world it can be deducted that not only private sector but also national and supranational organizations are taking care of the possibility how to promote and enhance effective operation of clusters. It can be seen that clusters activities have been pretty much institutionalized making the system be firm, steady and effectively productive. Especially small, new and emerging clusters can get knowledge and experiences to become mature and productive from the beginning of their starting activity. It has been implied that EU does not have any consistent so called Common Cluster policy. Perhaps it is a good idea, there is no need to tight and limit the activities of clusters operating in very divers environment. Good system of cluster initiatives sponsored by European authorities with collaboration of private sector creates an effective set of tools offering enough options to promote economic growth in industry sectors, regional development and innovation activities.

## 2.2 Current challenges in EU Regional policy

European Union is not only an association of 28 member countries, but also their regions have played an indispensable role in the process of EU integration, economic development as well as getting closer to its citizens. Authors such as Tomšík (2009) and Rumpel, et al. (2008) argue that the *main goal of European regional policy* is to contribute to the development of particularly lagging regions and the restructuring of declining industrial areas or the revitalization of deprived urban districts. The emphasis is put to create sustainable jobs and improve the status of economic, social and territorial cohesion of EU. Therefore, the term "cohesion policy" has been implemented as a synonym to the EU Regional policy. Until recently, the development of rural areas where agriculture has fallen away has also been subject to this policy. This Agenda for 2007-13 has been already taken over by Common Agricultural Policy (CAP).



EU regional policy is also characterized as an *investment policy*. It supports job creation, competitiveness, economic growth, quality of life and sustainable development. These investments support the Europe 2020 strategy objectives. Regional policy is also an expression of EU solidarity with less developed countries and regions. It is used to pool resources for areas and sectors where investment has the maximum reach. It follows that regional policy serves to reduce the significant economic, social and territorial disparities that still exist among European regions. Their persistence would undermine some of the EU cornerstones such as single market or the Euro Monetary union. According to Jovanović (2014), over the 2014-2020 period EU will invest € 347 billion in total into European regions. Funding from Union sources helps, for example, improve the transport and internet connections in remote regions, support small and medium-sized enterprises in less-favored areas, invest in cleaner environments, and improve education and training. European Union's financial sources are also being invested into innovation, the development of new products and production methods, energy efficiency increase and climate change combat.

EU regional policy assistance is managed within Structural Funds and Cohesion Fund. Its aim is to reduce regional disparities and mitigate the lagging behind of less developed regions. As part of this assistance, economically stronger countries contribute to economically weaker countries on the basis of solidarity principle. According to Belajová (2005), European regional policy is a unique common policy based on *financial solidarity*, which means that a part of the Member States' contributions to the Community budget is directed towards less prosperous regions and weaker social groups. This principle allows more than 35% of EU budget coming mainly from richer Member States to be used in disadvantaged regions. This approach does not only help the beneficiaries but also the main contributors to Community budget as their businesses benefit from large investment opportunities and economic and technological transfer of know-how, especially in those regions where different types economic activities have not yet started. Regional policy enables all regions to contribute to EU competitiveness enhancement. European solidarity policy is thus a way in which European Union pro-

vides assistance to lagging regions, how to help convert troubled industrial areas, modify rural areas with declining agriculture and regenerate lost parts of cities especially within brownfields.

Even in the last seasons of the last century decades, several European regions have been demanding stronger powers. Their EU future vision has resulted in the first outlines of the concept called "*Europe of the Regions*" or "*Europe of the cities*". This ambitious concept assumed that the EU future would not end just with the integration of member countries, but it would continue going even closer to their citizens, directly to their regions. In EU member states, new tendencies have begun growing to promote new territorial arrangements and to delimit the centralist power of states. This vision of a strong EU is based on the integration of separate regions, which, as the most economically and culturally strongest individual members of each member country, will be the driving force of deepening the integration processes (Wokoun, Malinovsky, 2008). Opponents of this regionalist vision have seen in this wake up regions approach a more competitive third dimension of European integration, recognizing their point of view in European institutions, but still firmly embedded in the structures of national states.

Jovanović (2014) states that the basis of the "Europe with Regions" concept was based on the realistic view within gradual recognition of European policies regional dimension and the development of cooperation opportunities among regions at consultative level. The lingering issue still has been the enormous gap among the integration units of future Europe – regions being different not only in their size, but also in economic power or authority degree. Some areas with stronger nationalist or regionalist movements have sensed a chance in European Union how to separate from their own country, so they have worked out a "Europe of Cultures" concept in which lower territorial units than central, with its own culture or language, would get a special status within a particular country.

The main reason for a coordinated European regional policy implementation are the *persisting regional discrepancies* within the EU 28 and the need to eliminate them, contributing benefits and profits not only to regions but also to the overall EU competitiveness as a whole within the EU-US-Japan international economic triad in world economy. The

European Union, the US and Japan are the most prosperous economies in the world. From the last three phases of enlargement in 2004 (accession of ten new countries), 2007 through the accession of Romania and Bulgaria and Croatia in 2013, the size of internal market and the human potential of the Union increased to nearly up to 500 million residents. However, economic and social disparities among Member States and their regions make the Union's overall dynamism weaker. Compared to the EU-15 and EU-28, differences in Europe have increased to double. There are too many differences between the most developed and the most debilitating regions and they are getting bigger and bigger.

Differences among 222 European Union's regions have been widening along with the increasing number of new EU member states. As a result of the EU enlargement processes this integration group has become a heterogeneous unit and has to face serious problems regarding the development in individual regions. It has been evident that some enlargements of today's European Union have resulted in sluggish integration. The second enlargement of European Communities in 1981 with Greece and, subsequently, the third enlargement of the EC with Spain and Portugal meant an increase in the share of economically backward regions throughout the Community. Only the enlargement of the European Union in 1995, when joining three economically developed countries - Finland, Austria and Sweden - led to an increase in the Union's average economic level. Last but not least, the last three EU enlargements in 2004 and 2007 and 2013 have again led to an increase in the share of economically backward regions in the overall EU territory and therefore the overall EU social and economic policy has been focused on its regional dimension more than ever before (Cihelkova, 2016; Zemanova, Drulakova, 2016; Varadzin, 2016).

According to McDonald and Dearden (2005), *regional policy or social and economic cohesion policy (or cohesion policy)* is an instrument how to meet economic and social cohesion, which is a prerequisite for the effective existence of EU. The EU's regional policy therefore focuses on following aspects:

- to remove economic and social disparities between individual Member States and their regions,

- solidarity and competitiveness (the intention is to enable regions to fulfill their role in promoting growth and competitiveness and to ensure the exchange of ideas and best practices);
- the development of European Union in line with the challenges of the 21st century (support for science and research, employment, social security, equal opportunities, ecology, European values).

Regarding the *strategic direction of EU regional policy* in EU Member States, Mitchel, Muysken and Van Veen (2006) define at least five common trends:

- 1) Finding the right balance between the goals of well-being and wealth distribution. For example, in Austria's positive experience with technology-driven development has
- 2) questioned the suitability of targeting innovation activities into narrowly defined problematic regions. In general, there is a strong emphasis on strengthening regional competitiveness in order to create an environment in which regions are able to contribute to overall national development.
- 3) There is an increased emphasis on strengthening the role of urban centers / agglomerations as development engines due to even more severe restrictions on regional aid provisions but mainly because of the need to concentrate available population-based volumes of assistance into areas with potentially the greatest interventional impact. In Finland, traditional emphasis has been weakened on rural areas and the prevention of population displacement, as a key objective today, is to keep population and development in the region's major urban centers, i.e. focus on regional centers for growth.
- 4) Another irrepressible topic is the relationship between the central and regional levels in the programming and implementation of structural support for economic development.
- 5) Both professional and political discussions are about addressing the extent of intervention being the best suited to regional policy performance. Is it more appropriate to concentrate on narrowly specified local economic development initiatives, or is it better to apply a wider perspective that takes into account all government spending in region?

- 6) The last, but not least, question is the extent to which regional policy should be "Europeanised".

In European Union, according to Habánik and Koišová (2011), *regional policy is implemented at three basic levels*:

1. transnational - relatively independent is implemented directly by EU institutions,
2. national - this differentiated policy is implemented by individual member states, gradually being linked by common rules,
3. regional - exist in most countries, of which positions are strengthened over the long term.

The bearers of European regional policy are:

- at transnational level: European Commission along with other European institutions,
- at national level: government, ministries and other state administration bodies in particular country.

#### 2. 2. 1 EU regional policy institutional set

European regional policy covers all administrative levels from European to local. Its legal basis consists of relevant provisions within the Treaty on European Union, its priorities are determined by EU and national and regional authorities, in cooperation with European Commission they are responsible for its implementation. The regional policy framework is set for a seven-year period. According to Mitchel, Muysken, Van Veen (2006) and Jovanovic (2014) EU regional policy is formed in following phases:

- Based on Commission's proposal the Council and European Parliament will together decide, on the Structural Funds budget and the rules for its use.
- During the consultation process between the Commission and Member States, the principles and priorities of Cohesion Policy are to be specified. National and regional institutions would use the Community strategic guidelines on cohesion to align their programming with the agreed European priorities.
- Each country is to develop a National Strategic Reference Framework (NSRF), which must be sent to Commission within five months after the Strategic Guidelines adoption. This document

outlines a country's strategy and a suggested list of operational programs. Commission has three months to make comments to national framework and request additional information.

- Commission approves the NSRF as well as individual Operational Programs (OPs). Operational programs include priorities of a country and regions. Employees, employers and public organizations can participate in their programming and management process.
- Operational programs are implemented by Member States and their regions. It is all about the selection, monitoring and evaluation of thousands of projects. This work is organized in each country or region by so-called managing authorities.
- Commission allocates funding (to enable countries to start implementing their programs).
- Certified expenses are reimbursed to each country.
- In parallel with the country concerned, the Commission monitors all operational programs.
- Commission and Member States submit strategic reports throughout the 2014-2020 programming period.

The real issue is that EU regional policy is a broad subject and cannot be considered within European policies only categorically and geographically. All relevant EU institutions are involved in its planning and subsequent management, but in particular, the Commission and Parliament are approving the budget. The Committee of the Regions, which is the legitimate voice of all the elected representatives of the regions in EU, also plays an important, advisory role. Its target responsibilities tools and focus is being discussed below.

### *European Commission*

European Commission (EC) is responsible for regional policy issues, respectively. the particular Commissioner responsible is in charge of regional policy. European Commissioner for Employment, Social Affairs and Equal Opportunities cannot be avoided because of their competence to manage important instruments - European Social Fund. The Foreign Affairs Commissioner, whose portfolio includes foreign aid and European Partnership and Neighborhood Instrument, is also on the list. Each of these Commissioners is subject to the relevant Directorate

General - a kind of "European ministry". Regional policy issues are dealt with by the Directorate-General for Regional Development (DG REGIO). Among the high-ranking Eurocrats in this directorate was also Katarína Mathernová as Slovak, who became her deputy in 2007. The Directorate-General for External Relations (DG RELEX), the Directorate-General for Employment, Social Affairs and Equal Opportunities (DG EMPL), which supervises Structural Funds specifically the European Social Fund (ESF), guides the part of the related European Neighborhood Policy agenda. (Baldwin, Wyplosz, 2009; Kunešová, Cihelková, 2007)

The EC's Directorate-General for Regional and Urban Policy is in charge of strengthening the economic, social and territorial cohesion by reducing disparities among the development levels within individual regions and EU Member States. In this way, EU regional policy contributes positively to the EU overall economic performance. Discrepancies can be reduced by cohesion policy that enhances improvement in competitiveness and employment. The Directorate-General for Regional and Urban Policy helps less developed regions and regions struggling with structural problems increase their competitiveness and achieve a faster pace of sustainable economic growth being executed by means of co-financing the infrastructure projects, information society development, know-how transfer acceleration, promoting investment in human resources and encouraging cross-border cooperation. For this reason, regional development policy is a significant manifestation of EU solidarity. (Hitiris, 2003; Lipková, 2011)

By Jovanovic (2014), the objective of the Directorate-General for Regional Policy is to ensure efficient and effective structural policies that:

- a) bring benefits and are understandable to European citizens in regions,
- b) directly contribute to creating the proper conditions for next successful EU enlargement processes;
- c) comply with financial management principles.

### *European Parliament*

In European Parliament (EP) is working the Committee on Regional Development (REGI), which has responsibility for regional and cohesion

policy, but in particular for European Regional Development Fund, Cohesion Fund and other Union regional policy instruments. The Committee also is assessing the impact of other policies on economic and social cohesion, it is in charge of Union's structural instruments coordination, is managing outlying regions and islands. It also covers issues such as cross-border and interregional cooperation, relations with the Committee of the Regions, interregional cooperation organizations and local and regional authorities.

Deputies do not decide on specific projects, but their impact on EU regional policy is significant. Parliament, together with Member States' ministers, has a decisive obligation in approving the EU budget and can therefore increase funding for regions and thus support more projects. It is not just about money. Parliament is actively involved in a number of actions aimed at raising public awareness about the way how grants from European funds are being distributed, how to apply for funding and exchange experience from implemented projects, success stories and so on.

Article 3 of the Treaty on European Union states that the Union promotes economic, social and territorial cohesion and solidarity among Member States. For this goal Structural Funds are used to support a consistently worked out regional development policy which, within meeting its objectives works together with other policies, particularly in the fields of research, energy and transport. The Committee on Regional Development, is responsible for economic policy implementation by EU and its Member States in a way that leads to this objective. That is why it closely cooperates with the Presidency of the Union, the Council, the European Commission, and other EU advisory bodies such as the Committee of the Regions and the Economic and Social Committee, as well as many other regional and local organizations. Hitiris (2003) states that a total of 50 Committee members and 50 substitutes represent all political fractions in EP. Through their coordinators they co-operate with the committee chair to organize particular events and activities.

According to Larry (2007), the Committee on Regional Development is a committee with responsibility for regional and cohesion policy, in particular:



- a) European Regional Development Fund, Cohesion Fund and other EU regional policy instruments,
- b) to assess the impact of other Union policies on economic and social cohesion,
- c) the coordination of EU structural instruments,
- d) to manage remote regions and islands as well as cross-border and interregional cooperation,
- e) to keep up relations with the Committee of the Regions, cooperation with interregional organizations and local and regional authorities.

### *The Committee of the Regions*

Many decisions taken by EU have a direct impact on its regions. The Committee of the Regions (hereinafter referred to as the "Committee" or "CoR"), as an independent institution, speaks to them: it represents the interests of regions and their inhabitants and ensures that information on EU policies is communicated directly to regions. Its main tasks are to represent the interests of local and regional authorities within the European legislative process and, in cases of decisions affecting the interests of regions, the Commission or the Council must consult the Committee of the Regions.

According to Lipkova (2011) 344 members of CoR represent the regional and local authorities of European Union and are appointed for a period of four years. Members of the Committee are elected representatives of self-governing regions, mayors of cities and chairmen of cities and provincial councils. The Committee works in several committees and subcommittees. The biggest event is the European Week of Regions and Cities - Open Days, organized by the Committee together with Commission, and Parliament and the Presidency.

Haviernikova, et al. (2015) argue that the Committee of the Regions, based in Brussels, was formed on the basis of the Maastricht Treaty in 1994 as an advisory body allowing representatives of local and regional administrations to express their views on the issues discussed in European Union. It serves as a place for the visibility of regions in EU member states. EU institutions must consult the Committee of the Regions

during the legislative process. The Committee will address the European Commission, the Council and the Parliament in areas of local and regional interest. Since the Treaty of Amsterdam came into force, other European institutions, for example even the Commission, should also be consulted with the Committee of the Regions on the following mandatory areas of legislative proposals: economic and social cohesion, trans-European infrastructure networks, health, education, culture, employment policy, social policy, environment, vocational training, transport, civil protection, services of general interest. European Commission and the Council of Ministers are required to consult 344 members of the Committee on proposed EU legislation covering a wide range of policies, including employment, transport and environment. Consultation may also be requested by European Parliament. The CoR plays following role in the EU decision-making process (Larry, 2007):

- the CoR consults national and regional parliaments, local and regional authorities, associations, etc.,
- the CoR commissions work out opinion drafts,
- the CoR plenary assembly approves opinions,
- The CoR monitors the implementation of EU legislation at regional and local levels.

After the Lisbon Treaty came into force of, the role of the Committee of the Regions has been strengthened throughout the legislative process. The Lisbon Treaty requires European Commission to involve EU local and regional authorities and their associations already in the pre-legislative phase, and the Committee of the Regions, through its position as a representative of local and regional authorities at EU level, has been intensively involved in legislative process since its primary stage. According to Lipkova (2011), the Committee of the Regions currently holds a political assembly that allows local and regional authorities to express their views on EU policy and legislation development. The CoR is also examining, discussing and negotiating proposals, preparing official opinions and opinions on the most important topics and suggestions.

It is important to highlight that EC / EU Treaties require the Commission, European Parliament and the Council to ask the Committee of the Regions for consultations whenever new proposals are drafted in areas

that affect regional and local levels. The Committee of the Regions examines the proposals presented, discusses prepares official opinions on the most important topics. As stated by Fojtíková and Lebieczik (2008) with the Committee of the Regions, it is essential to consult all proposals before any decisions in EU relating to regional policy, environment, education and transport falling within the competence of local and regional authorities. Regions have the pre-emptive right to express their attitude to any legislative initiative even before the formal process of their adoption is launched. Based on this, the CoR is a speaker of regions and local authorities in EU member countries. It has two roles: to represent their interests and their citizens, and to ensure that EU-related information is directly reported to regions, and also adopts resolutions on important political issues.

McDonald and Dearden (2005) state that the Committee of the Regions is based on three basic principles when assessing EU legislative proposals:

- 1) Subsidiarity principle means that decisions in European Union should be taken as closely as possible to citizens, so EU should not deal with issues where national, regional and local authorities can decide better. The role of the Committee of the Regions as a guardian of subsidiarity principle is formally enshrined in the Treaty of Lisbon. The Committee has the right to bring a lawsuit at European Court of Justice if considering the principle has been breached in some case.
- 2) The principle of proximity to citizens says that the objective of all levels of governance should be the proximity to citizens, which can be achieved in particular through transparent procedures so that people know who is responsible and how they can express their views;
- 3) The principle of partnership is about a respect and cooperation from EU headquarters to regions and local authorities and governments).

An important aspect of the Committee of the Regions activities is the fact that its members live and work in their home regions, where they continue to meet their responsibilities within local and regional authorities, either as chairmen of territorial units, mayors of cities or members of regional councils. It allows them to keep in touch with the opinions

and concerns of citizens they represent and being presented directly in EU institutions within the CoR meetings in Brussels.

### 2. 2. 2 Basic EU regional policy principles and objectives

The main principle of EU regional (cohesion) policy is financial solidarity in favor of less developed regions as well as social groups. It helps to maintain regional competitiveness and significantly helps converge poorer regions to more developed ones. The developed regions are experiencing different needs, in particular in the area of competitiveness and employment growth. These specificities are tailored to regional policy instruments being designed for them. The EU enlargement has increased regional differences "disparities/discrepancies" among individual regions in Member States, being regularly monitored by Eurostat within a regional and national comparisons data.

EU Regional policy and the structural funds usage are based on the basic principles when financing individual projects. According to Lipková (2011) the basic principles, respectively the principles underlying the EU regional policy are as follows: the principle of concentration, the principle of partnership, the principle of additionality and the principle of programming. These four principles, defined in 1988, are characterized as methods of structural interventions. Later in the 2007-13 programming period, these principles were complemented by additional general principles such as complementarity, interdependence, coordination, compliance, gender equality, gender and non-discrimination, territorial level of implementation and sustainable development. Now let's have a closer look at each of the current all EU regional policy principles in more detail.

The *principle of concentration* requires concentrating the resources of European Union's Structural Funds into the most problematic regions. Based on established EU criteria, NUTS II (Nomenclature of Territorial Statistical Units Nomenclature) regions are considered to be lagging behind. whose GDP per capita in purchasing power parity does not exceed 75% of EU average. According to Boháčková and Hrabánková (2009), the principle of concentration has three aspects:

- Resources concentration means that the bulk of Structural Fund resources (81.9% for 2007-2013) are spent on the aid to the poorest regions and countries.
- Effort concentration - investments are focused on specific areas. During 2007 - 2013, the knowledge society is supported, specifically such as R&D, innovation, technology transfer, information and communication technologies, human resources development and business development.
- Concentration of expenditure means that at the start of programming period, annual funding is earmarked for each program. These funds must be spent by the end of the second year after the decoupling (so-called N + 2 rule).

The *partnership principle* includes the requirement for the active participation of relevant authorities at all levels within the preparation, implementation and monitoring of projects results being a part of regional policy programs and co-financed by Structural Funds. European Union Member States have built regional government bodies that coordinate regional development. Candidate countries are obliged to do the same procedure. In addition to self-governing regional bodies, regional development agencies should also be set up to act as secretariats for the EU's regional programming agenda. This principle reflects the fact that each program is drawn up through a joint process involving European, regional and local authorities, social partners and civil society organizations. As mentioned by Lipkova (2011), this partnership applies to all programming process phases such as: proposal, management, implementation, monitoring and evaluation processes. Such an approach helps to ensure that the measures are tailored to local and regional needs and priorities.

The *principle of programming* highlights an integrated multi-annual approach, i.e. planning. This principle is applied within the European Union and additionally Candidate Countries must also prepare Regional Development Plans to develop a European Union Support Program and relevant Operational Plans along with the EU institutions. This principle means that cohesion policy does not serve to finance individual projects. The aim is to finance multiannual national programs that are in line with EU objectives and priorities. According to Jovanović (2014) for the 2007-13 programming period, the basic concepts of "operational

program", "priority axis" and "operation" were newly defined for the practical application of a programming principle. The operational program is a document submitted by a Member State and adopted by Commission which sets out a development strategy using a single set of priorities to be transferred with the assistance of structural funding. The Priority Axis is one of the strategy's priorities within the operational program, consisting of a group of operations, related to each other and with specific measurable objectives. Operation means a project or a group of projects that has been selected by, or under the responsibility of, the management body of an operational program in accordance with the criteria established by the monitoring committee. It is executed by one or more beneficiaries and enables to meet the priority axis objectives to which it relates.

The *principle of additionality* means that the funds from European Union budget complement the funding of national states and regions. It means that EU funding cannot be the only one financial source but only additional to financing the projects from national and regional sources. The principle of additionality states that funding from the European Structural Funds does not replace the expenditure of individual Member States. According to Fojtíková and Lebieczik (2008), Commission will agree with each country on the level of eligible public (or equivalent) expenditure that must be maintained during the programming period. the Commission's control is carried out in the middle and at the end of the financial perspective period.

The *interconnection principle* means that the actions (measures) that Member States want to implement are not only in compliance with the interests of particular states, but also with the EU objectives as a whole unit. It is essential for Member States' activities, policies and priorities to be consistent with Community activities, policies and priorities and to be mutually complementary.

The *subsidiarity principle* means that the responsibility for the efficient EU funding usage is shifted as close as possible to the implementers of the proposed project, where it is possible to take into consideration the most precise local conditions for project implementation. Individual national and regional authorities are responsible for particular projects.

The *principle of coordination* results from the existence of a number of various financial sources from which the assistance is provided. Failure to co-ordinate financial spending could give rise to duplication, possibly other minor inconsistencies, which could adversely affect the course and effectiveness of interventions, or provide room for speculation.

The *principle of equality* between men and women and non-discrimination means that both Member States and European Commission must take measures to ensure that equality of men and women is not jeopardized as a result of fundraising and that there is no discrimination based on sex, racial or ethnic origin, religion or the worldview, age, disability and sexual orientation

The *principle of territorial implementation* indicates that the territorial dimension is one of the cohesion policy features, unlike sectoral policies. It highlights the ability to adapt to the specific needs and characteristics of specific geographic challenges and opportunities. In the context of cohesion policy, the geographic aspect is very important. By Hudec (2009) the implementation of operational programs shall be the responsibility of Member States, at appropriate territorial level, in accordance with the institutional arrangements of each Member State, taking into account also demographic and environmental issues that are urgent in various regions.

At last there is the *principle of sustainable development* meaning that the objectives of Structural funding are pursued within the framework of sustainable development principles and Community's objectives enhancement to protect the environment and improve its quality.

Generally speaking, financial support for regional policy requires to focus on the most problematic regions in EU Member States and active cooperation at all levels, to create multi-annual regional development plans, and to complement EU funding instead of replacing national spending. It is implied that the co-financing sources within particular countries must be available. These principles are applied according to the EU Council decision and must be reflected in the legal and institutional framework of a beneficiary country.

The European Union also has special programs, known as Community Initiatives, which are aimed at finding common solutions to problems

affecting the entire European Union. Community Initiatives are generally easier to access for communities, local action groups, and so on. The initiatives are funded by Structural Funds. Each initiative is funded by only one fund. According to Boháčková and Hrabánková (2009) Community Initiative represent the part of the EU's regional policy, in which the Commission pursues its own objectives to contribute to tackling the serious problems directly arising from the implementation of other types of Community policies; to enhance the execution of EU policies at regional level; and ultimately contribute to solving the common problems of certain types of regions. As noted by Fojtíková and Lebieczik (2008), these five programs contain 5.35% of Structural Funds' budget. Each initiative is funded by only one fund. Next the five Community initiatives programs are to be discussed.

EQUAL supports international co-operation in combating discrimination and inequality on labor market, while at the same time trying to eliminate the factors leading to inequality and discrimination on labor market. This initiative is funded by the European Social Fund (ESF).

Ivanička and Ivaničková (2007) state that the Employee Employment and Human Resources Initiative - EMPLOYMENT - includes three separate, but complementary, core activities. Each has been developed in terms of the White Paper on Growth, Competitiveness and Employment. YOUTH START - helps to integrate youth into work, NOW supports the equal opportunities of women and men in education and employment, and HORIZON strives for social and economic inclusion of disabled citizens as well as other disadvantaged groups on labor market.

By Fiala and Pitrová (2009) LEADER supports rural development, especially innovation and diversification of agricultural income. It seeks to bring together active actors in rural communities and economic sphere within the search of new local strategies for sustainable development. This initiative is funded by the European Agricultural Guidance and Guarantee Fund (EAGGF).

URBAN II supports the social and economic development of problematic areas in major European agglomerations. It supports innovative strategies for regeneration of cities and dilapidated urban areas. This initiative is funded by European Regional Development Fund (ERDF).



According to Jovanović (2014) INTERREG III supports the cross-border cooperation (INTERREG III A) and transnational cooperation (INTERREG III C). Transnational cooperation covers large groups of regions as well as regions located beyond the EU borders, with common territorial interests. This initiative therefore supports cross-border, transnational cooperation and cooperation between regions, i.e. creating cross-border partnerships to promote the balanced development of multi-regional areas and is funded by the European Regional Development Fund (ERDF).

It should be added that the whole management of financial resources allocation under the initiatives, policy objectives and individual funds is implemented on the basis of a common system of regions classification within the Nomenclature of Territorial Statistical Units (Nomenclature des Unités Territoriales Statistiques - NUTS). The Nomenclature of Territorial Statistical Units is established by the Statistical Office of European Commission (Eurostat) and uses uniform rules to collect all the statistical data from national statistical institutes of each EU 28 Member States in cooperation with national institutes for statistics, in case of Slovakia by the Statistical Office of Slovak Republic.

### 2. 2. 3 EU regional policy implementation instruments

According to Haviernikova, et al. (2015), EU regional policy is funded by three main funds that can be used within some or all of the regional policy objectives:

- European Regional Development Fund
- European Social Fund
- Cohesion Fund

According to Jovanovic (2014), four new financial instruments (Jaspers and Jasmine), improving access to microfinance (Jeremie) and promoting urban development (Jessica) were created. The European Union Solidarity Fund (EUSF) provides assistance in case of major natural disasters. Assistance to candidate and potential EU candidate countries is available through the Instrument for Pre-Accession Assistance (IPA).

Regional policy instruments in the 1990s were a complex of instruments under the EU Structural Funds which consisted of: European Social Fund, European Regional Development Fund, European Agricultural Guarantee Fund, and Financial Instrument for Fisheries Guidance (the last two are currently only part of the EU CAP). Regarding regional policy, the Cohesion Fund, which is not a structural fund in the right word sense, is often mentioned. It was not designed to secure economic change in regions but to balance the economic level of that time four most lagging European Union states - Greece, Ireland, Spain and Portuguese.

The significance of Structural Funds, through which measures to balance the levels of various regions are being financed, is gradually increasing. Within the first decade of a new millennium, more than one third of the EU budget is earmarked for EU regional policy targets implementation. Lipková, et al. (2011) argues that at the beginning of the 1990s, from the EU common budget, only 14% of expenditure was spent on structural operations.

The aim of the Structural Funds, as the main instrument of European regional and structural policy, is to reduce the disparities among regions of the EU. EU budget aid is directed directly to national or regional authorities being responsible for managing the development programs. Their beneficiaries must submit well-prepared project documents to the EU institutions. According to European Commission (2018), financial contributions provided are irreversible. Expenditure associated with regional development is up to 75% covered by the EU budget after approval of the project. By using these measures there are also many opportunities for new jobs creation.

### *European Regional Development Fund*

The goal of European Regional Development Fund (ERDF) is to strengthen economic and social cohesion within the European Union by balancing regional discrepancies. Briefly, by Larry (2007) the ERDF can be funded following issues:

- direct aid to invest in companies (especially SMEs) to create sustainable jobs;

- infrastructure mainly linked to research and innovation, telecommunications, environment, energy and transport;
- financial instruments how to support venture capital, local development, etc. in order to promote regional and local development and to help co-operate between cities and regions;
- technical assistance measures.

The ERDF can be used under the three new regional policy objectives: Convergence, Regional Competitiveness and Employment, European Territorial Cooperation. The ERDF also pays particular attention to specific territorial characteristics. With its action, the ERDF seeks to tackle with economic, environmental and social problems in cities. Problems of geographically and naturally disadvantaged areas (island, mountainous or sparsely populated regions) are managed preferentially. In outermost regions, the ERDF provides special assistance to compensate their remote location.

Within the overall character of ERDF, it contributes to financing the aid to strengthen economic and social cohesion by balancing the major regional disparities by promoting the development and structural change in regional economies, including the transformation of declining industrial regions and lagging regions, and promoting cross-border, transnational and interregional cooperation. The ERDF thus meets the Community's priorities, in particular the need to strengthen competitiveness and innovation, to create and secure sustainable jobs and to ensure sustainable development.

Under the Convergence objective, the ERDF focuses its assistance on promoting sustainable integrated regional and local economic development and employment by mobilizing and strengthening internal capacity through operational programs aimed at modernizing and diversifying economic structures as well as creating and ensuring sustainable jobs. According to Fojtíková (2016), this is to be achieved in particular by following priorities:

- research and technological development, innovation and entrepreneurship,
- information society,
- local initiatives in the area of development and assistance to structures that provide municipal services to create new jobs,

- environment,
- risk prevention,
- tourism,
- investments in culture, creative industries, transport, energy, education and health and social infrastructure that contribute to regional and local development and improve the quality of life.

Under the Regional Competitiveness and Employment Objective, the ERDF focuses its assistance in terms of sustainable development strategies, when supporting employment, in particular on the following three priorities (Mitchel, Muysken, Van Veen, 2006):

- innovation and a knowledge-based economy, within supporting the creation and strengthening of effective regional innovation economies, system relationships among private and public sectors, universities and technology centers that take into account local needs (such as clusters),
- environment and risk prevention,
- access to transport and telecommunication services within general economic interest.

As stated by the Committee of the Regions (2013), under the European Territorial Cooperation objective, the ERDF focuses its assistance on following priorities:

- the development of cross-border economic, social and environmental activities through joint strategies for sustainable spatial development,
- establishing and developing transnational cooperation, including bilateral cooperation among maritime regions, through network financing and activities that support integrated territorial development,
- strengthening the effectiveness of regional policy by interregional cooperation enhancement.

### *European Social Fund*

The European Social Fund (ESF) has been set up to increase employment and job opportunities in European Union. It provides assistance

under the Convergence and Territorial Competitiveness and Employment objectives. According to Jovanović (2014) ESF in line with European Employment Strategy is focused on four key areas:

- 1) Personnel and enterprise adaptation. It is about lifelong learning systems, development and dissemination of innovative forms of work organization, increasing the adaptability of workers, enterprises and entrepreneurs in order to improve foresighting and positive management of economic changes;
- 2) To improve access to employment and better participation on labor market - accessibility for job seekers, inactive people, women and immigrants to employment. That means the sustainable inclusion of jobseekers and inactive people on labor market, unemployment prevention, especially long-term unemployment and youth unemployment, support for active aging and longer working age and increased labor market participation;
- 3) Social integration of disadvantaged people and combating against discrimination on labor market – to strengthen social inclusion by suppressing discrimination, facilitate the access to labor market for people with disabilities. This is to strengthen the social inclusion of disadvantaged people with a view to their sustainable integration into employment and the fight against all forms of discrimination on labor market;
- 4) Human capital enhancement by reforming education systems educational institutions networking linkage.

### *Cohesion Fund*

Cohesion Fund helps Member States having a Gross National Product (GNP) per capita below 90% of EU average, reduce their economic and social disadvantage and stabilize their economy. It supports actions under the "Convergence" objective. During the 2007-13 period, Cohesion Fund was concentrated on Cyprus, Estonia, Greece, Hungary, Latvia, Lithuania, Malta, Poland, Portugal, the Czech Republic, Slovakia and Slovenia. Spain is also eligible under the transitional regime because its GNP per capita is below the average of EU 15.

According to (Baldwin, Wyplosz, 2009), Cohesion Fund is funding activities carried out in following areas:

- trans-European transport networks, in particular priority projects of European interest established by EU;
- environment - in this context, Cohesion Fund can support energy or transport projects insofar as they have clear environmental benefits: energy efficiency, renewable energy sources usage, rail transport development, intermodality support, public transport enhancement, etc.

Cohesion Fund financial assistance can be suspended by Council's decision (by a qualified majority) if a Member state has an excessive government deficit, unless the situation has been fixed or implemented measures are to be inappropriate.

#### 2. 2. 4 European Union's regional policy perspectives

At the end of June 2011 European Commission published a draft budget framework for 2014-2020 period. In February of 2013 European Council approved the budget by more than EUR 87 billion. Negotiators on EU budget are considered to be the biggest game and the biggest fight in terms of numbers across the European Union.

The Treaty of Lisbon gives the multi-annual financial framework (MFF) a legally binding status. As stated by Jovanović (2014), according to Article 312 of the TFEU, the MFF ensures that Union expenditure is drawn in a systematic manner and within the limits of its own resources, while the annual budget of Union is consistent with the multiannual financial framework. The first Financial Perspective (Financial Framework / Perspective) was covering the period of 1988 - 1992. It sets the expenditure and revenue limits for EU budget, taking into account that EU budget must be balanced. It means that it cannot be in a deficit, but it is realistically happening by forwarding the financial obligations from one year to another.

The EU budget within the limits of particular seven-year financial perspective is being adopted annually. While the multi-annual financial perspective is a subject to the so-called agreement procedure where European Parliament can accept or reject it as a whole, annual budgets are managed by casual legislative procedure, which means that deputies can actively enter into the budget creation process in full before

they finally vote on it together with Member States in terms of the Council of the EU.

### *Cohesion Policy 2014-2020*

On 6 October 2011, European Commission adopted a proposal for a legislative package, which is the EU cohesion policy framework for the period 2014-2020. EU Commission has proposed several important changes as regards the nature of cohesion policy and its application, namely:

- focusing on the priorities of Europe 2020 strategy for smart, sustainable and inclusive growth,
- performance remuneration,
- integrated programming support,
- focus on results - progress monitoring within reaching the agreed goals, territorial cohesion enhancement, and
- to simplify the action process.

According to Havierníková, et al (2015), the total proposed budget for the period 2014-2020 is EUR 37,6 billion, including the new "Connecting Europe" instrument funding to enhance the cross-border projects dealing with energy, transport and information technology. The cohesion policy legislative system consists of:

- Bridging Regulation laying down common rules for European Regional Development Fund (ERDF), European Social Fund (ESF), Cohesion Fund, European Agricultural Fund for Rural Development (EAFRD), European Maritime and Fisheries Fund (EFMR) and other general rules for the ERDF, ESF and Cohesion Fund;
- three specific regulations for ERDF, ESF and Cohesion Fund;
- two regulations on European Territorial Cooperation Objective and European Territorial Cooperation Group (ETCG).

As stated in Euroactiv.sk (2018) for the current stage of EU Regional Policy development (2014-2020), two objectives are set in line with Europe 2020 strategy, such as: 1. Investment in growth and employment; 2. European territorial cooperation. Under Objective 1 - Investing in growth and employment the category of NUTS 2 regions is as follows:

- less developed regions with GDP per capita less than 75% of the EU 28 average;

- transitional regions with per capita GDP between 75% and 90% of the EU 28 average;
- more developed regions with a GDP per capita more than 90% of the EU 28 average.

Under Objective 2, European Territorial Cooperation the ERDF supports: cross-border cooperation (supported regions at level NUTS 3), transnational cooperation (NUTS 2 regions), interregional cooperation (the whole territory of European Union). How particular objectives are supported by specific funds is illustrated in Table no. 5.

Table 5. Cohesion policy objectives supported by individual funds.

Targets	structural funds and instruments		
„Convergence“	ERDF	ESF	CF
„Regional Competitiveness and Employment“	ERDF	ESF	
„European territorial cooperation“	ERDF		

Source: own processing by Euroactiv.sk, 2018

EU regional policy (cohesion policy) for the 2014-2020 programming period supports the Europe 2020 Growth Model to enhance employment, competitiveness, social inclusion and environment protection. Cohesion policy supports the territorial dimension of cooperation (cross-border, transnational and interregional). At this stage, European structural and investment funds are being used to enhance economic and social development and to meet the Europe 2020 objectives, in particular in the areas of employment and poverty reduction. The particular funding sources are:

- European Regional Development Fund (ERDF),
- the European Social Fund (ESF),
- Cohesion Fund (CF),
- the European Agricultural Fund for Rural Development (EAFRD),
- European Maritime and Fisheries Fund (ENRF).

As stated by European Commission (2018) at the end of Cohesion Policy 2014-2020 EU regional policy operates on five basic and a few complementary principles. At current stage following principles are recognized: the principle of programming, the principle of concentration, the principle of partnership, the principle of complementarity, the principle of monitoring and evaluation, the principle of subsidiarity and the principle of solidarity. In addition, till 2020 EU has set 5 objectives for areas



where all Member States have implemented their own national targets: 1. Employment, 2. Research and development, 3. Climate change and energy sustainability, 4. Education, 5. Combating poverty and social exclusion.

At the end of current financial framework of 2014-2020 EU regional policy funding is focused on 4 priorities such as: research and innovation; information and communication technologies; making small and medium-sized businesses more competitive; moving towards a low-carbon economy. Table X illustrates the comparison of two last financial framework periods between 2007-2013 and 2014-2020.

Table 6. EU Cohesion Policy System - Comparison of Financial Perspectives 2007-2013 and 2014-2020

2007-2013		2014-2020		
Objectives		Targets	Category of regions	Funding
Convergency	ERDF, ESF	Investment into growth and job creation	Less developed regions	ERDF, ESF
Convergency degressive - transitional system			Transition regions	
Regional Competitiveness and Employment - degressive - transitional system				
	CF			CF
Regional Competitiveness and Employment	ERDF, ESF		More developed regions	ERDF, ESF
European territorial cooperation	ERDF	European territorial cooperation		ERDF

Source: own processing by European Commission, 2018

### *New Cohesion policy*

For the next long-term EU budget 2021-2027, the Commission proposes to modernize Cohesion Policy. When it comes to regional development and cohesion policy beyond 2020 there is a focus on five investment priorities., i.e. five main objectives will drive EU investments in 2021-2027:

- 1) Smarter Europe, through innovation, digitization, economic transformation and support to small and medium-sized businesses,
- 2) a Greener, carbon free Europe, implementing the Paris Agreement and investing in energy transition, renewables and the fight against climate change,

- 3) a more Connected Europe, with strategic transport and digital networks,
- 4) a more Social Europe, delivering on the European Pillar of Social Rights and supporting quality employment, education, skills, social inclusion and equal access to healthcare,
- 5) a Europe closer to citizens, by supporting locally-led development strategies and sustainable urban development across the EU.

A more tailored approach to regional development is highlighted as well. Cohesion Policy keeps on investing in all regions, still on the basis of 3 categories (less-developed; transition; more-developed). The allocation method for the funds is still largely based on GDP per capita. New criteria are added (youth unemployment, low education level, climate change, and the reception and integration of migrants) to better reflect the reality on the ground. Outermost regions will continue to benefit from special EU support. Cohesion Policy further supports locally-led development strategies and empowers local authorities in the management of the funds. According to European Commission (2018) the urban dimension of Cohesion Policy is strengthened, with 6% of the ERDF dedicated to sustainable urban development, and a new networking and capacity-building program for urban authorities, the European Urban Initiative.

Regarding innovation and cluster policies an Interreg appears to be a challenge how to remove cross border obstacles and support interregional innovation projects. Interregional and cross-border cooperation will be facilitated by the new possibility for a region to use parts of its own allocation to fund projects anywhere in Europe jointly with other regions. The new generation of interregional and cross-border cooperation ("Interreg") programs will help Member States overcome cross-border obstacles and develop joint services. The Commission proposes a new instrument for border regions and Member States eager to harmonize their legal frameworks, the European Cross-Border Mechanism. Building on a successful pilot action from 2014-2020, the Commission proposes to create the Interregional Innovative Investments. Regions with matching 'smart specialization' assets will be given more support to build pan-European clusters in priority sectors such as big data, circular economy, advanced manufacturing or cybersecurity.

Within the overall characteristics of EU Regional policy, it can be concluded that it is a policy geared to balancing regional discrepancies across the EU territory. It follows that it supports areas that have not yet benefited sufficiently from the integration process, as well as areas that are negatively affected by this process (economically underdeveloped regions, regions undergoing the restructuring processes). It also differs from general economic aid being assigned for individual enterprises and being restricted by competition rules. As an accepted policy area, it seeks to compensate competitive disadvantages in problematic regions for effective structural funding usage.

Generally speaking, EU regional policy has a significant impact on many areas of economic and social life throughout the EU. Investments implemented through different instruments help to achieve EU objectives and complement other EU policies on education, employment, energy, environment, single market, research and innovation. Regional policy targets EU regions and cities, boosting economic growth and improving quality of life through strategic investment. It is also an active form of solidarity which focuses support on the less developed regions.

### **2.3 The role of innovation in European clustering process**

To increase the innovative capacity and competitiveness as well as the networking of high-performing European cluster initiatives with each other, the European Commission provides various cluster and innovation policy instruments. Emerging industries - which are new industrial sectors or existing industrial sectors and value chains that are evolving into new industries - can particularly benefit from the collaborative opportunities provided by clustering. The Strategy 2020 appears to be one of the most important current programs and activities at EU level which support clusters in the emerging industries in EU. Technological advance, knowledge based production, innovation implemented into new technologies are the outputs of effective synergy how the EU cluster policy can be involved in the Strategy 2020. Those are the tools leading to increasing economic growth, sustainable social and economic development and higher quality of life of European Communities inhabitants. Sustainable growth is increasingly related to the capacity of regional economies to innovate and transform, adapting to an ever

changing and more competitive environment. This means that a much greater effort needs to be put into creating the eco-systems that encourage innovation, research and development (R&D) and entrepreneurship, as stressed by the Europe 2020 strategy and its Innovation Union flagship initiative.

European Commission (2018) points out that innovation contributes between two-thirds and four-fifths of economic growth in developed countries. In other words, about 85% of productivity growth in advanced economies is driven by innovation. However, statistics confirm large disparities between EU Member States and regions in the fields of innovation and R&D as well as a persistent gap compared to its main competitors at global level. Europe needs to become more inventive, reacting more quickly to changing market conditions and consumer preferences in order to become an innovation-friendly society and economy (De Castro, Hnát, 2017; Hnát, Stuchlíková, 2014). The key drivers of research and innovation are most effectively addressed at the regional level. Reducing the innovation deficit between European regions is therefore a key task for Cohesion Policy. In that context, it invests, among others, in five key elements: Research and innovation, SME competitiveness, ICT take-up, Energy efficiency and renewable energy and Human capital development. The promotion of innovation is therefore a central feature in the Cohesion Policy programs for 2007-2013, where about €86.4 billion or nearly 25% of the total allocation go towards innovation in the wider sense (Dano, 2014). This commitment is further strengthened in the new 2014-2020 programming period, where 30% of the total allocations are going to be deployed for innovation in the wider sense (Havierníková, 2012b). In the future, smart specialization strategies will also mobilize the innovation potential of all EU regions.

### 2.3.1 Innovation a technological change fallouts within the clusters

Technological change within the innovation processes are the main factors of current global economy development. In this chapter we focus only on those aspects of technological change that specifically influence the globalization of economic activity. We will try to identify some of those features of technological change that are most important in

the globalization of economic activity. Technological change is the dynamic heart of economic growth and development; it is fundamental to the evolution of a global economic system. We focus on the geography of innovation, on different scales - national and local - at which innovation processes operate.

As we have already mentioned, innovation as the heart of technological change is fundamentally a *learning process* - by 'doing', by 'using', by 'observing' from, and sharing with, others and depends upon the accumulation and development of relevant knowledge. The specific socio-technological context within which innovative activity is embedded - what is sometimes called the innovative milieu — is a key factor in knowledge creation. The geographical scale of such innovative milieu may range from the national through to the local. The idea underlying the notion of national innovation systems is that the specific combination of social, cultural, political, legal, educational and economic institutions and practices varies systematically between national contexts. Such nationally differentiated characteristics help to influence the kind of technology system that develops there together with its subsequent development trajectory.

National systems of innovation, in fact, consist of aggregations of localized knowledge clusters, sometimes termed technology districts or *technopoles*. Many of them are associated with major metropolitan areas, although some have developed outside the metropolitan sphere in rather less urbanized areas. Most are the outcome of the historical process of cumulative, path-dependent growth processes although a few are the deliberate creations of national technology policy. These technological agglomerations form one of the most significant features of the contemporary global economy.

By Dicken (2007) the basis of localized knowledge clusters lies in several characteristics of the innovation process that are highly sensitive to geographical distance and proximity:

- localized patterns of communication: geographical distance greatly influences the likelihood of individuals within and between organizations sharing knowledge and information links.

- localized innovation search and scanning patterns: geographical proximity influences the nature of a firm's search process for technological inputs or possible collaborators. Small firms, in particular, often have a geographically narrower scanning field' than larger firms.
- localized invention and learning patterns: innovation often occurs in response to specific local problems. Processes of 'learning by doing' and 'learning by using' tend to be closely related to physical proximity in the production process.
- localized knowledge sharing: because the acquisition and communication of rack knowledge are strongly localized geographically, there is a tendency for localized 'knowledge pools' to develop around specific activities.
- localized patterns of innovation capabilities and performance: geographical proximity, in enriching the depth of particular knowledge and its use, can reduce the risk and uncertainty of innovation.

Table 7. Some leading world technology districts or technopoles

United States	Europe	Asia
Southern California (including Silicon Valley)	M4 Corridor, London	Tokyo
Boston, MA	Munich	Seoul-Inchon
Austin, TX	Stuttgart	Taipei-Hsinchu
Seattle, WA	Paris-Sud	Singapore
Boulder, CO	Grenoble	
Raleigh-Durham, NC	Montpellier	
	Nice/Sophia Antipolis	
	Milan	

Source: Dicken, 2007

Variously referred to as clusters, networks, centers of excellence, and industrial districts, what we will term spatial clusters first came to be noticed in Silicon Valley in the United States. Spatial cluster can be defined as "a set of interlinked firms/activities that exist in the same local and regional milieu, defined as to encompass economic, social, cultural and institutional factors" (Dunning, Lundan, 2008).

Generally, it is emphasized that much productive knowledge cannot be codified into explicit forms. Rather, this tacit knowledge must be communicated via a social process of face-to-face interaction over a relatively long period of time. Consequently, innovation and learning comprise a spatially located, social, and collective process among a group of firms. We have to be aware that the very nature of the innovation process tends to make technological activity locally confined.

Now let us answer the question why spatial clusters can contribute to the productivity of firms. First, the concentrated communication made possible by a cluster increases learning and innovation. This, in turn, contributes to the dynamic, technological efficiency of firms in the cluster. Second, trust increases over time, and this facilitates contracting and exchange among firms (the relational model discussed earlier). Third, a common business culture develops, and this reduces uncertainty. These processes are particularly important in flexible manufacturing systems because these are "strongly externalized" or "transactions intensive". That is, much of the activity in flexible production systems takes place among firms, especially between core firms and their suppliers.

Mitchel and Muysken (2006) argue that a cluster exists within a milieu. The milieu consists of the cluster's firms, the knowledge embedded within the cluster, its institutional (e.g., legal) environment, and the ties of the cluster's firms to customers, research institutions, educational institutions, and local government. The milieu supports the cluster with rules and norms for business activity, social cohesion, business culture, and government support.

Some economists suggested that government policies can address spatial clusters when considering investments in education, research, and infrastructure. In the realm of education, specialized training closely tied to spatial clusters can be very important. By Duman (2009) this specialized training can be provided by technical institutes or professional associations. Government can play a direct, albeit limited, role in the testing of materials, inspection and certification of quality control standards, calibration of measurement instruments, establishment of repositories of technical information, patent registration, research and design, and technical training. Finally, competition policies can restrict

horizontal collusion while fostering vertical communication and collaboration.

Whether due to linkages or spillovers, in the most knowledge-intensive sectors such as computers, instrumentation, electronics, semiconductors and pharmaceuticals, innovative activity tends to cluster spatially. Industries that use the same base of scientific knowledge have a strong tendency to cluster both production and innovation at the same location. At the same time, Reinert (2012) has highlighted that economic activities that are diverse, but complementary, are likely to yield greater innovative output than a specialization of economic activity in one area. The potential for knowledge-intensive activities to generate agglomeration effects, and therefore to be geographically clustered, has led to extensive research on the innovative characteristics of regions in the global economy. There is a hierarchy of regional centers in terms of their attractiveness as a location for innovation. They suggested that the differences in the technological specialization between foreign investors and local firms would be the greatest in the highest-order regions, and declining as one moves towards lower-order regions. Higher-order regions would attract firms from a number of technological subfields who enjoy the benefits of complementarity, while lower-order regions would attract firms that are more narrowly specialized, and thus more similar to the local firms.

### 2.3.2 EU Innovation policy as implementation tool for clustering in regions

To put it in a nutshell Europe 2020 is the European Union's ten-year jobs and growth strategy. It was launched in 2010 to create the conditions for smart, sustainable and inclusive growth. Five headline targets have been agreed for the EU to achieve by the end of 2020. In terms of priorities the Europe 2020 strategy is about delivering growth that is: smart, through more effective investments in education, research and innovation; sustainable, thanks to a decisive move towards a low-carbon economy; and inclusive, with a strong emphasis on job creation and poverty reduction. The strategy is focused on five ambitious goals in the areas of employment, innovation, education, poverty reduction and climate/energy. To ensure that the Europe 2020 strategy delivers,



a strong and effective system of economic governance has been set up to coordinate policy actions between the EU and national levels.

European Commission (2018) has identified new engines to boost growth and jobs. These areas are addressed by 7 flagship initiatives providing a framework through which the EU and national authorities mutually reinforce their efforts in areas supporting the Europe 2020 priorities such as (1) innovation, (2) the digital economy, (3) employment, (4) youth, (5) industrial policy, (6) poverty, and (7) resource efficiency (EC, 2018).

As a crucial issue we need to underline the EU Innovation policy, which is about helping companies to perform better and contributing to wider social objectives such as growth, jobs and sustainability. The main current European Union's innovation policy is the Innovation Union, as one of the seven flagship initiatives of the Europe 2020 strategy for a smart, sustainable and inclusive economy. Its aim is to boost Europe's research and innovation performance by speeding up the process from ideas to markets. According to European Commission (2018) the Innovation Union plan will aim to do three things. Firstly, to make Europe into a world-class science performer; secondly to remove obstacles to innovation like expensive patenting, market fragmentation, slow standard-setting and skills shortages – which currently prevent ideas getting quickly to market; and finally to revolutionize the way public and private sectors work together, notably through Innovation Partnerships between the European institutions, national and regional authorities and business.

There are some important strategic collaborative linkages between the EU Regional policy and Strategy 2020 necessary to be met. The definition of activities with high added value, which offer the best chance of strengthening the competitiveness of the region, needs strategic information. To resources for research and development and innovation have the greatest impact, must reach its critical value. They must be accompanied by measures to improve skills, increase education levels and knowledge infrastructure. The National and the regional governments should develop smart specialization strategies to increase the impact of regional policy in combination with other the Union policies

to the maximum. The Smart specialization strategies can ensure the efficient use of public resources and stimulate private investment. They can help regions that concentrated resources on a few key priorities. They can also be the key element in the creation of multi-level governance for integrated innovation policies. In addition, require a strong understanding of regional sites in relation to other regions as well as the potential benefit for interregional and transnational cooperation. The strategy of smart specialization involves businesses, research centers and universities that cooperate to define the most promising areas of specialization of the region, but also the weaknesses that hamper innovation. It takes into account the different capacities of regional economies, in terms of innovation. While leading the regions invest in advancing a generic technology or service innovation, for others it is often beneficial to invest in its application in a particular sector (Jovanović, 2014; Molnár, Dupal, 2008; Morosini, 2004). The sustainability of the strategy will depend on the time frame and the coordination of policy measures, also from the administration, including ways of engaging stakeholders. It must also include mechanisms for acquiring the information on policies, in particular through peer review, and involving public officials, experts and stakeholders at the regional level. The Smart specialization needs to exploit regional diversity and must stimulate transnational and interregional cooperation and create new opportunities by avoiding fragmentation and ensuring freer flow of knowledge across the European Union (Krajňáková, Vojtovič, 2012; Navickas, et al., 2017; Navickas, et al., 2016).

By discussing the issue, it can be said that the innovation policy implemented into EU regional policy plays very important role within the current financial framework 2014 -2020 and Europe 2020 Strategy to assure sustainable economic growth in the EU and enhance its competitiveness within the environment of the world economy triad. Innovations and innovation policies and strategies implementations are one of the most important aspects of current international economics and business development issues. It is the key not only to creating more jobs and improving quality of life, but also to maintaining companies' competitiveness on the global market and states'/economies' competitiveness enhancement within the international economics system.

The synergy of Strategy 2020 and EU Regional policy must show how technology refers to ideas and knowledge that business can exploit commercially and assure the world economy sustainable development. The sources of new ideas on which companies can call are many and varied, ranging from universities and research institutes to competitors, customers and suppliers, and to employees. The EU economies are following a long-established trend of restructuring away from the primary and secondary sectors and towards services and high value-added products. But manufacturing is still an important economic sector of the Community for production, trade and employment. In recent years the industry has operated against a background of slow growth of demand, rising unemployment, increasing international competition and rapid changes brought about by technological progress (Allen, 2009; Baldwin, Wyplosz, 2009). Although these are problems which to some extent are shared by all members of the Community, industrial policy still remains largely a national responsibility. The Community has taken steps to ensure that, in accordance with a system of open and competitive markets, the conditions and the legal framework necessary for speeding up the structural adjustment and competitiveness of European industry will develop. The Community's industrial strategy in particular regions consists of policies aimed at improving the business environment, by working towards integrating the European market, promoting the necessary changes in industry's structure, and coordinating the activities of the member states (Fojtíková, Stancikova, 2017; Havierníková, 2012a). The single market has given a welcome boost to cross-border mergers, acquisitions and joint ventures which are shaping a new structure of production and distribution.

It can be highlighted that two pillars form the underpin of Europe 2020 Strategy: The thematic approach, combining priorities and objectives, and reporting on Member States, which will help them to develop their strategies to return to sustainable growth and sustainable public finances. Jovanović (2014) and Peng (2009) state that at the EU level there are adopted integrated guidelines covering the EU objectives and priorities. Member States are determined taking into account the recommendations of their particular situation. In case of disproportionate reaction warnings could be issued at the policy level.

By and large, clusters consist of dense networks of interrelated firms that arise in a region because of powerful externalities and spillovers across firms (and various types of institutions) within a cluster. Clusters drive productivity and innovation. Firms that are located within a cluster can transact more efficiently, share technologies and knowledge more readily, operate more flexibly, start new businesses more easily, and perceive and implement innovations more rapidly. The EU Cluster policy is supposed to provide a platform bringing together regional, national and European actors, with the objective to define and implement a European cluster policy agenda. The role of the Commission in this process is mainly to facilitate all forms of cooperation that could lead to more competitive clusters in Europe, by providing neutral economic analysis on existing and emerging clusters, identifying good practice, providing intelligence on opportunities for cooperation and facilitating networking at practical and strategic levels. The Strategy 2020 appears to be one of the most important current programs and activities at EU level which support clusters in the emerging industries in EU.

In this chapter it has been sketched out a comprehensive, coherent and systematic overview of the basic principles and objectives forming the backbone of the EU cluster policy and the nature of its operation mechanism along with the Strategy 2020. Clusters play an important role when it comes to the access of SMEs to innovation and research, or the joint development of international markets. They will also play a crucial role in the future for the allocation of Structural Funds which requires greater prioritization and specialization within regions. European Union recognizes the importance of clusters and prospects for economic development and that due to the support of clusters is the subject of very intense debate within European authorities. European Union also supports the exchange of information, developing strategies processing and expert analysis including through support associations and initiatives that focus on the development of clusters.

It has been shown how Europe can succeed if it acts collectively as a Union. EU needs a strategy that will help to make sure the Union come out stronger from the crisis - a strategy that will help make the EU a smart, sustainable and inclusive economy delivering high levels of employment, productivity and social cohesion. The Europe 2020 Strategy is a vision of Europe's social market economy for the 21st century. The

ultimate objective is to help Member States and regions in designing smart specialization and cluster strategies to assist companies in developing new, globally competitive advantages in emerging industries through clusters, and in this way strengthen the role of cluster policies for the rejuvenation of Europe's industry as part of the Europe 2020 Strategy.

As conclusion we can say that technological advance, knowledge based production, innovation implemented into new technologies are the outputs of effective synergy how the EU cluster policy can be involved in the Strategy 2020. Those are the tools leading to increasing economic growth, sustainable social and economic development and higher quality of life of European Communities inhabitants.

### **3. CLUSTERS AS A DRIVING FORCE OF SLOVAK REGIONAL DEVELOPMENT STRATEGY**

Regional policy appears to be one of the most important current programs and agenda at EU and Slovak authorities' level which support clusters in emerging industries in Slovakia. Based on the comparative analysis of Slovak clustering activities and mutual interaction within Slovak regional policy development agenda the object of this chapter is to assess the impact of Slovak clusters effects on Slovak regional development regarding the Slovak competitiveness enhancement within the global and European economy system. Technological advance, knowledge based production, innovation implemented into new technologies are the outputs of effective synergy how the cluster policy and clustering processes can be involved in Slovak regional policy development. Those are the tools leading to increasing economic growth, sustainable social and economic development and higher quality of life of Slovak regions inhabitants.

European and Slovak clusters consist of dense networks of interrelated firms that arise in a region because of powerful externalities and spill-overs across firms (and various types of institutions) within a cluster. Clusters drive productivity and innovation. Firms that are located within a cluster can transact more efficiently, share technologies and knowledge more readily, operate more flexibly, start new businesses more easily, and perceive and implement innovations more rapidly. Slovak cluster activities are supposed to provides a platform bringing together regional, national and European actors, with the objective to define and implement a kind of Slovak cluster policy agenda.

The position analysis of Slovak regions within Slovak economy in terms of international and European economic relations is also be the object of this chapter with regards to its competitiveness enhancement possibilities within the global and European economic environment while using the latest science and technology achievements as a synergic output of regional and cluster policy interaction. Firstly, significant issues of Slovak regional policy development are to be analyzed, secondly, Slovak clusters activities under the cluster policy patterns will be

sketched out, and at last, clusters as Slovak regional competitiveness enhancement tools are to be rated.

### **3. 1 Significant issues of Slovak regional policy development**

Regional policy development on the territory of Slovak Republic has gone through several stages, each of which has some specificities depending on relevant historical development stage. The first phase of regional policy development on Slovak territory started after the Second World War, when Slovakia was part of Czechoslovakia. As argued by Habánik, et al. (2015) in Czechoslovakia, the model of a centrally planned economy was applied, so the development of regions was centrally planned and managed and carried out on the basis of unified state plans for economic development. These five-year plans also included the principles of progressive economic and social level alignment for less developed areas, and later the plans for selected urban agglomerations and border areas. Under these plans, a nominal list of investment stocks, financial support for housing and borderland settlement was established. The main instrument how to balance the huge differences among regions was the industrialization of Slovakia and the subsequent urbanization. At governmental central level, the decision was made to deploy businesses, industry and labor force in order to balance regional differences. In each district the dominant production enterprise was located, or enterprises that were the basis of economic activity in the district. Localization factors and the natural conditions of regions were often not taken into consideration. Manufacturing companies were complemented by consumer industries and services that ensured female employment. while men usually worked mainly in heavy industry sectors.

Through this way executed regional policy, large disparities among different districts were eliminated and employment was provided for the population. In that period, however, the production high energy intensity and production economic efficiency were not at the first spot. Environmental damage was the accompanying feature of industrialization. Overall, there was little money to mitigate regional disparities. According to Vyrostopová (2010), regional policy intentions were managed

centrally. The regional policy authorities were represented by both federal and national governments, the State Planning Commission, the Slovak Planning Commission, particular ministries and other central authorities. Regional policy was implemented by regional and county national committees, specifically regional and spatial planning departments, and municipal and local national committees at municipal level.

The second phase of regional policy development started after the political changes in Czechoslovakia in 1989. The transformation process from centrally planned economy to the market one led to the emergence of significant regional disparities because less efficient state-owned enterprises began to close their businesses, unemployment was raising, and some regions failed to adapt to new conditions. After the transformation of Czechoslovak Socialist Republic into the Czech and Slovak Federal Republic, institutions were focused on the development of regions in individual states of federation. As stated by Habánik et al. (2016) in Slovak Republic there were the Ministry of Economic Strategy and later the Commission of Slovak Government for Economic Strategy and the Strategic Studies Center. At lower levels, regional policy was carried out by departments or regional development offices at district and local authorities. Regional Economic and Social Councils have been established and regional development documents have been prepared.

In 1991, Government Resolution no. 390 adopted Regional Economic Policy Principles, being taken to be a systems document in terms regional discrepancies issue. The next documents were the Development Programs for Districts and Regions and in 1992 the Economic and Social Level Analysis and economic development potential possibilities assessment of districts in SR was elaborated. Regional Advisory Information Centers, Business Innovation Centers and later Regional Development Agencies have begun to emerge. At this stage, a simple form of regional policy was promoted; regional policy was more focused on monitoring the increasing regional disparities rather than their economic growth; special attention was paid to unemployment issue in affected regions. Regional policy instruments have been implemented gradually and activated by regional and local public sector institutions. As instruments of regional policy, various information and advisory services were used, financial instruments were not sufficiently developed



and were used to a limited extent. Despite achieved results, according to Rajčáková (2009), some declared intentions within regional development (especially a more radical solution to eliminate regional disparities) in the first phase of that transformation period were not possible to complete. Especially a comprehensive regional approach and the significance of regional policy were neglected, and sectoral policies were preferred. The absence of more fundamental, complex, transformational concepts contributed to the unfavorable situation of regional development situation not only in whole Czechoslovakia but principally on Slovak territory.

### 3.1.1 Slovak regional policy shaping process

The current stage of Slovak regional policy formation was based on Czechoslovak regional policy principles and related to the emergence of independent Slovak Republic on 1 January 1993, when other documents from the sphere of regional development and regional policy were elaborated. Regarding the amendment of the Competence Act, since 1995, the Office for Strategic Development of Society, Science and Technology of SR has been responsible for regional development policy issue. Departments of Regional development and other sectoral relations were established at the offices of regional and district authorities (Výrostová, 2010). In 1996, the Criteria for Appraisal, Approval and Financing of projects supporting regional development was in force according to which funding support was allocated for small and medium-sized enterprises within manufacturing, services and tourism sector as well as for municipalities and regional development agencies.

According to Habánik et al. (2015) a significant shift in regional policy occurred in 1997 when the Government of Slovak Republic approved the *State Regional Policy Concept*. After the government's decision to join the EU membership, regional policy was focused on the negotiation process in terms of the EU enlargement. The Government Resolution no. 923/1999 approved the Integrated Plan of Regional and Social Development of Slovak Republic, which identified 29 problematic districts. Besides being a basis for government decisions in the area of regional development, it was also an important prerequisite for drawing from the EU pre-accession funds. The organization of regional policy

has been gradually adopted to the European Union's regional policy system.

In 1999 the Ministry of Construction and Regional Development of Slovak Republic was established, planning and implementation of regional policy went beyond its competence. Also, the Government Council of SR for Regional Policy and Regional Development Agency were established. Government Resolution No. 725/2000 adopted the *Slovak Regional Policy Principles*, which specifically defined regional policy, its basic principles, program documents and tools, objectives and ways of its implementation. In terms of this resolution, regional policy is defined as the conceptual and executive activity of State government, territorial self-government authorities and other stakeholders with their task to:

- contribute to the harmonious and balanced development of regions,
- reduce the differences among the development levels of individual regions,
- support the economic and social development of regions, in particular regarding the activation of their underutilized economic and social potential; to promote the rational usage of nature and natural resources, including the environment protection i.e. to promote sustainable regional development.

As noted by Ivanička and Ivaničková (2007) to meet those basic goals, it is recommended to use standard economic and financial instruments that do not distort competition and do not conserve the obsolete regional economic structure. The following basic instruments are described within the Slovak Regional Policy Principles:

- a) subsidies
- b) the payment of interest or interest on the loan granted to the entrepreneur,
- c) partial payment of the loan,
- d) State guarantee or bank guarantee implementation,
- e) repayable financial assistance,
- f) tax holidays.

Next, the institutional framework for the regional policy implementation at central and regional levels and financial provision for regional

development are determined in the Principles. The Regional development principles were reflected in the main legislative document for regional policy implementation - Act 503/2001 on Regional development promotion, which allowed to apply the EU regional policy principles within Slovak Republic. The law laid down the conditions, basic programming documents and financial support for regional development promotion. The care for the comprehensive development of local territories passes from the state governmental administration to territorial self-government authorities (self-governing regions and municipalities), defining the main concepts and objectives for regional development support, the authorities within their support for regional development and the basic documents promoting regional development (Buček, Rehák, Tvrdoň, 2010).

Another important document was the National Regional Development Plan of Slovak Republic as a basic mid-term document how to implement the Slovak regional policy and a framework for drawing the EU pre-accession funds. In next years, several documents were adopted more or less associated with regional development and regional policy issue, among them the most important was the National Development Plan. By adopting the Act on Self-Government of Higher Territorial Units in 2001 and by amendment of the Act on General Settlement, a part of regional policy competence was transferred to regional and local territorial self-government authorities. According to Habánik et al. (2016) the way how to implement regional policy program at national level within the period of 2004-2006 was to adopt four sectoral operational programs such as Industry and Services, Human Resources; Agriculture and Rural Development; Basic Infrastructure and Regional Operational Program.

It is clear from the previous text that since 1989, regional policy has been gradually improving. At the beginning it was initially focused on significant regional disparities limitation, especially in terms of unemployment, numerous documents and programming tools have been gradually adopted, new regional policy actors and authorities have emerged at different levels and regional policy instruments have been developed. In the next period, the regional policy was mainly implemented due to Slovakia's accession to European Union, and its financial possibilities were expanded, firstly from the pre-accession funds

PHARE, ISPA and SAPARD. After the Slovak accession to European Union on May 1, 2004 Structural Funds and Cohesion Fund were used for regional policy development. However, it should be noted that, despite the regional policy implementation, the differences among regions have not diminished, but the discrepancies got even bigger. It can be observed that frequent changes within the regional policy institutional implementation at government level had negative impacts on its implementation at local level. It can be implied that regional policy has reached a marginal position in relation to other governmental priorities and policies and instead of integrated or complex approaches the partial sectoral steps have been taken to activate the regions.

### 3.1.2 Slovak and EU regional policy symbiosis

The next stage of Slovak regional policy formation was characterized by the adoption of important conceptual documents on regional development and regional policy. In 2007, the *National Strategic Reference Framework (NSRF)* was adopted as a basic strategic document for programming the EU funds usage in the 2007-2013 programming period. National priorities set by the Cohesion Fund and the Structural Strategies for the period 2007-2013 were incorporated in it. The main objective was to significantly increase the competitiveness and the performance of regions and Slovak economy on employment while respecting sustainable development issue. NSRF's strategic priorities were: Infrastructure and regional accessibility. Knowledge-based society and human resources. According to Koisoová & Havierníková (2016) the strategy, priorities and objectives of the NSRF were implemented through 11 operational programs such as Information Society; Competitiveness and Economic Growth; Health; Transport; Environment; Research and Development; Employment and Social Inclusion; Education; Technical Assistance, Bratislava Region; Regional Operational Program. Other regional policy programming documents for this period were: Rural Development Program 2007-2013, National Strategy for Sustainable Development, Sustainable Development Action Plan in SR for 2005-2010 - approved by Government Resolution no. 574/2005, Cross-

border Cooperation between Czech Republic and Slovak Republic, Regional development concepts and Programs for economic and social development of municipalities.

In 2008, a new *Act on regional development support* was adopted no. 539/2008 Coll. was adopted. This Act defines regional policy as a coordinated set of activities and practices done by competent authorities and organizations at national, regional and local levels that contribute to economic development, social development and territorial development of regions. The Act establishes the objectives and conditions for regional development support, regulates the competence of state administration bodies, higher territorial units (regions), municipalities and other territorial cooperation entities, and the conditions for coordination and implementation of regional development. As a basic document for the regional development support at national level, the *National Strategy for Regional Development of SR* was defined in this Act being adopted in 2010. By Rehák & Šipikal (2011) this is the starting point of the strategic document, which aims to comprehensively determine the strategic approach of the state to regional development promotion process in Slovak Republic. Its task is for the NUTS 3 types of regions:

- to identify internal potential and specify possible competitiveness of NUTS 3 regions within the Slovak Republic.
- to characterize their specific aspects and resulting major competitive advantages within the Slovak Republic as well as in European context.
- to identify development strategic objectives and priorities of NUTS 3 regions.

The National Strategy was also identified as a starting document for the elaboration of a new programming document to use EU funding after 2013. The National Strategy presented the main development factors of Slovak regions and existing regional disparities and contained an economic development prognosis in Slovak regions depending on the type of applied cohesion policy, it assessed the starting point and important trends in priority areas that needed to be emphasized within the development of Slovak Republic, in line with Lisbon Strategy. It also highlighted the issues that require a priority area-by-sector approach, with

basic recommendations how to solve them. The main parts of the document are the sections „Vision and Regional Development Strategy“ and „Development Strategy Priorities and Objectives of Slovak Regions.

According to National strategy for regional development document the section Vision and Regional Development Strategy presents a long-term vision for regional development support in Slovak Republic. There can be found issues such as regional development strategy, strategic objectives, along with the most important development priorities being defined within individual priority areas. The section Priorities and Objectives includes a brief socio-economic analysis of individual regions at NUTS 3 level and an assessment of their internal potential, characteristics of specific needs in each region, the identification of main development factors and regional competitive advantage. Strategic development goals are set for each region and also the development of region within the specified priority areas was proposed.

In other parts of national strategy, attention was paid to the institutional and organizational security of its implementation. For the needs of the future evaluation of national strategy implementation and the fulfillment of set objectives and priorities, a monitoring and evaluation system is outlined with the measurable indicators set as well as the way how to control their fulfillment. The possible funding sources for regional development is also mentioned. An important part of the national strategy are the annexes – analysis, prognosis of economic development in Slovak regions, indicators at national level and at the level of NUTS 3 regions.

According to Pachingerová (2011) in July 2010, after the abolition of the Ministry of Construction and Regional Development, the area of regional policy was transferred to the Ministry of Agriculture, Environment and Regional Development of Slovak Republic. By adopting Act no. 403/2010, amending the Act no. 575/2001 Coll. on the Organization of Government Activities within the State Administration, as amended, the area of regional development and regional policy since February 2010 has been transferred to the Ministry of Transport, Construction and Regional Development of SR.

To put it in nutshell, regional policy at national level, regional policy is institutionally secured by National Council of Slovak Republic, the Government of Slovak Republic, the Committee Government for Regional Policy. Ministry of Transport, Construction and Regional Development and central state administration bodies within its sphere of competence. At regional level, regional policy is institutionally secured by higher territorial units (HTU) - self-governing regions, regional authorities, municipalities and integrated network of regional development agencies.

In next years, Slovakia, as a member of European Union, for regional policy implementation is trying to obtain a substantial part of funds from European Union Cohesion policy. Preparations for the ongoing programming period 2014-2020 started in 2007 when European Commission opened a public debate on challenges that EU cohesion policy will have to face in upcoming years. These meetings also took place in Slovak Republic. The main negotiator for SR regarding the preparation of EU and SR legislative and strategic documents for cohesion policy after 2013 was the Ministry of Transport, Construction and Regional Development in cooperation with the Ministry of Finance regarding the financial management and audit agenda.

The European Commission has proposed a new approach to the funding management in its proposal *Multiannual Financial Framework for 2014-2020*. According to EU Position Paper (2012) this new approach underlines the need for strong prioritization and results and deviates from the claim culture. The Common strategic framework funds thus provide an important source of public investment and act as a catalyst for growth and jobs creation by mobilizing investment in physical and human capital and, at the same time, as an effective means of supporting the implementation of Country Specific Recommendations.

As stated by Habánik et al. (2015), the preliminary views of European Commission on the main funding priorities in Slovakia for growth-enhancing public spending for the new programming period were included in the *Commission's Interim Document on Partnership Agreement for Programs in Slovakia 2014-2020 (EU Position Paper)*. European Commission called for optimization of funding usage within Com-

mon Strategic Framework by creating strong links to reforms that increase productivity and competitiveness, as well as by mobilizing private resources and supporting sectors with high growth potential while maintaining solidarity within the Union and securing the sustainable use of natural resources for future generations. In the field of fiscal discipline, this Position paper encourages Slovakia and its regions to develop and implement medium-term strategies that will be able to face future challenges, especially globalization, while helping to preserve the European social model. In addition, it provides a flexible framework that will enable Slovakia and its regions to respond flexibly and to concentrate European, national and local resources for growth and employment, to bring fiscal sustainability and growth-oriented policies together, and solving the structural and institutional problems in Slovakia, which act as an obstacle for economic growth. Finally, it makes Slovakia and its regions use of possible synergies between Common strategic framework funds and other sources of EU funding in terms of implementing a strategic and integrated approach.

For the programming period of 2014-2020, European Commission has defined in the EU Position paper the following priority funding areas:

- an entrepreneurial environment conducive to innovation,
- the infrastructure for economic growth and jobs creation,
- human capital development and improved participation on labor market,
- sustainable and efficient use of natural resources,
- modern and professional public administration.

At the same time, European Commission has identified areas of support being no longer recommended to be funded by EU Cohesion policy. Generally, it is about school infrastructure, health infrastructure, local communications, road maintenance and public lighting, and commercial tourism facilities (hotels, boarding houses, aqua parks). In February 2013, Slovak Government approved the draft Partnership Agreement of Slovak Republic for the years of 2014-2020. The Partnership Agreement is a strategic document that provides a comprehensive overview of current status of Slovak regions, their development barriers, it defines the development priorities and the way they are to be achieved, it establishes the conditions for using the European structural and investment funds. The Partnership Agreement is approved by the



European Commission after evaluation and after a dialogue with EU Member State that is submitting it. The main objective of Slovak Partnership Agreement is to increase the quality of life of population by creating new jobs, smart, sustainable and inclusive growth. (Partnership Agreement of Slovak Republic for the years of 2014-2020, Strategic document evaluation report)

The basis for drawing up the draft of Partnership Agreement of Slovak Republic were in particular the following documents: Europe 2020 Strategy, Specific Council Recommendations for Slovakia for 2013, European Commission Position paper to a Partnership Agreement and 2014-2020 Operational Programs elaboration, and National Reform Program 2013. In Partnership Agreement the following operational programs are proposed for the period of 2014-2020:

1. Research and innovation
2. Integrated infrastructure
3. Human resources
4. Quality of environment
5. Integrated regional operational program
6. Effective public administration

According to the Position paper followed programs are to be managed by individual mode: Technical Assistance; Rural Development Program; Fisheries; European Territorial Cooperation and INTERACT, being managed by specific European Commission guidelines. Financial contributions from European Structural and Investment Funds should only be an additional source of funding. Financial support for the implementation of activities under the Partnership Agreement is foreseen by a combination of following sources:

- state budget, including funds from the budget chapters of relevant ministries.
- State-owned funds,
- budgets of municipalities and regional authorities,
- sources from individuals and legal entities,
- loans and contributions from international organizations,
- funds resulting from international grant agreements concluded between Slovak Republic and other countries,
- other sources.

By and large, since the accession to EU Slovak regional policy has been closely linked to EU regional policy, its instruments, funds and budget. Regional policy is also linked to Cohesion Policy, which aims to strengthen the economic and social cohesion of EU Member States towards less developed countries and associated countries. Cohesion policy is geared towards removing economic and social disparities in order to promote economic growth and sustainable development by investing in human and physical capital. The Cohesion concept is not only a passive mechanism for resources redistribution, but it tries to generate resources by targeting their programs and priorities to focus on factors supporting economic and social development, while respecting environmental sustainability.

### **3. 2      Slovak clusters activities under the cluster policy pattern**

Slovak clusters were established in the last decade with varying degrees of competitiveness. In Slovak conditions clusters are disadvantaged within the meaning of undernourished innovation system, where do not exist: technology platforms structure, clustering innovative companies with centers of knowledge and innovation along with appropriate state and regional aid portfolio of innovative financing tools, technology centers and start-up centers, as it is typical in developed EU countries. Because of their development Slovak clusters are seeking opportunities and partnerships abroad so as to ensure their acceptance, sustainability, a level of output. Automotive, engineering and tourism cluster are the best known in Slovakia. They have emerged, despite the difficult situation - the absence of appropriate legislation, which would define and promote clusters as such.

In Slovakia, however, any cluster concept, strategy or policy is lacking as well as the “bottom-up” cluster initiatives do not have adequate legislative adaptation, which ultimately causes problems in the functioning and development of clusters in Slovakia. In the last decade the effective components of regional development in the Slovak Republic have become not only foreign investment and structural funds, but also business incubators, industrial parks and clusters. Recently the number of cluster initiatives has significantly increased in different regions how-

ever, their real performance is limited. The reason is the lack of a holistic cluster policy or conception, which is, as shown by the experience of developed economies, an important condition for proper functioning of cluster.

This chapter will discuss how Slovak cluster policy is implemented into Slovak cluster environment. Firstly, the Slovak cluster environment is to be analyzed underlining the regional deployment of clusters in Slovakia along with clusters typology and breakdown. Secondly, as the core issue of this chapter, the Slovak cluster policy concept is to be discussed in terms of its legal basis background, related initial legislative documents and supporting authorities and institutions from the national point of view and finally the detailed overview of government documents supporting Slovak clusters is sketched out. Most of the information and data for the following analysis and assessments are coming out of accomplished and ongoing programs and projects in which the Faculty of social and economic relations at Alexander Dubček University in Trenčín has been involved as a research participant.

### 3.2.1 Cluster environment analysis in Slovakia

The general issue is that at present, in Slovakia, the mutual cooperation of entities does not meet the criteria of the international cluster definitions mentioned in chapter 1.1. For this reason, within Slovak Republic, it is more appropriate and precise to use the term *cluster initiative*, being understood as an organized efforts of entities being created to increase growth and competitiveness through clusters in a region, when involving entities in future clusters (businesses, the public sector, research and education institutions, financial institutions and others). According to analytical study „Clusters on innovation development support“ being worked out by Slovak Innovation and Energetic Agency (SIEA) in 2009 with collaboration of experts from academic area for Slovak Ministry of Economy, Slovak Republic generated only 20 clusters, some of which, moreover, do not develop any activity. In general, two types of cluster initiatives are available in Slovakia:

- 1) cluster initiatives in tourism; and
- 2) technological cluster initiatives.

As a success story in Slovak clustering the “Automotive Cluster Slovakia” in Trnava can be described. Its mission is to promote the development of subcontractors to the automotive industry, which is the pillar of Slovak economy and export and help ensure their continued competitiveness at home and abroad through peer groupings of industrial enterprises, universities, scientific research institutions and other stakeholders in the private and public sector. Among its priorities we can add networking in the automotive industry, creation of the appropriate environment for technology transfer, assist in creating the conditions for education of skilled labor, promote the interconnection of the manufacturing sector with research and development organizations, search for suitable partners and present cluster members abroad, mediate and optimize the use of EU funds and so on. In tourism area there is working a “Liptov cluster”. The current vision of its development is to build up from Liptov region a recognizable tourist destination along with the strategic objective to increase the Liptov region attendance by 2015 as twice as in 2009 (Havierníková, Strunz, 2014). It is necessary to mention that tourism clusters in Slovakia more or less work on the basis of tourist associations and not as typical clusters thus they are not as successful as technological clusters.

Besides traditional types of clusters, there can be seen a growing potential for the emergence of new cross-sectoral clusters character. Two pilot projects in the framework of international project “CluStrat” belong to them. CluStrat is a strategic innovation project implemented through the Central Europe Program co-financed by the European Regional Development Fund. Within the Slovak part the Slovak Business Agency, Cluster AT+R and Clusters Union of Slovakia are the project partners. A common strategy for new concepts of clustering within the support of emerging economic sectors is developed by the outputs of pilot projects within the CluStrat that are a challenge for SMEs to expand their activities. The first one “Buildings with zero energy usage - the use of green energy” appears to be an opportunity for the public and business environment in the EU regions how to achieve savings cost through energy resources saving. The project's output is a benchmarking study for Slovak market, which deals with old buildings transformation into the ones with nearly zero energy consumption. The idea

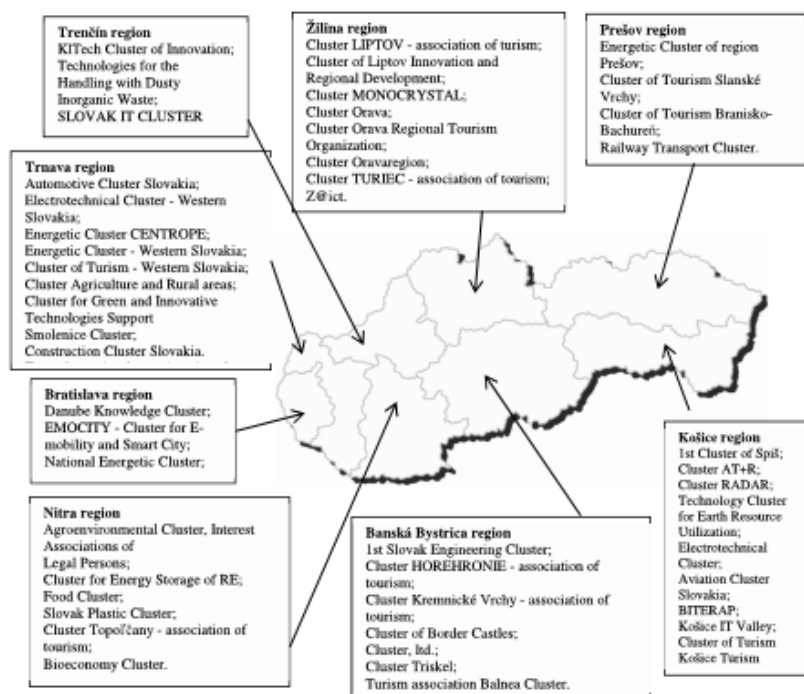
of the project is to incorporate the idea of energy savings into the national and regional strategic policy documents. Unfortunately, what do not work are the legislation and business conditions and, finally, financial instruments supporting the energy efficiency of old buildings transformation. The second pilot project, it is an "Active development of humanity and its aging focused on support on the smart home and households". Especially elderly and disabled people are the target group. This type of household equipment would facilitate their daily life.

In the period of 2016 - 2018 within the project Vega reg. n. 1/0953/16 an input data analysis was carried out, which found that there are dozens of clusters in Slovak Republic. Not all of them are active or show their activity. In the following section, current data on registered clusters are processed in Slovak Republic, assorted into regions. The analysis carried out within the project shows that 26 clusters have been founded in Slovak Republic, most of them in Trnava (8) and Žilina regions (5), the least number in Prešov region. In Trenčín region, no clusters were officially registered at the time of the research, as available information is only about cluster initiatives.

The first established and working in Slovakia was the BITERAP cluster in Košice Region (set up in 2004), followed by the Košice IT Valley Cluster (2007) in Košice Region, ABC - Academic Business Cluster (2007) in Bratislava Region, which started its activity in 2011 and Automobile cluster Slovakia (2007) in Trnava region. Among the last clusters being set up were: Energy Cluster (2012) in Prešov Region, Cluster for the Promotion of Innovative Green Technologies (2012) in Trnava Region, National Energy Cluster NEK (2012) in Bratislava Region, Cluster Topoľčany (2012) in Nitra Region and Cluster Orava - Regional Tourism Organization (2012) in Žilina Region.

The most commonly used legal form for clusters in Slovak Republic is the interest group of legal entities (85%), with the exception of Balnea Cluster Dudince in Banská Bystrica Region, Cluster Smolenice and Construction Cluster of Slovakia, in Piešťany (both in Trnava Region), where the legal form is a civic association. The regional distribution of clusters in Slovakia is illustrated in Fig. 9.

Figure 9. Clusters' deployment in Slovak regions



Source: own processing by Havierníková et.al, 2013 and Havierníková, 2018

In particular, municipalities and cities, in cooperation with private sector (23%), regional authorities (higher territorial units) in cooperation with universities, various institutions and private sector (19%) and regional authorities in cooperation with cities or municipalities (15%) have been involved in setting up the clusters. When regional authorities and cities clusters were involved in setting up the clusters, companies have become members of the cluster later on. Although foreign partners have been participating in cluster creation, for example in case of the

Centrope Energy Cluster, apart from Trnava region, the OB - Technologieoffensive Burgenland GmbH was a co-founder and, in case of the Cluster for Innovative and Green Technologies Promotion, the cluster founders were the Cyril and Method University in Trnava along with the Regional Chamber of Commerce of South Moravian Region.

In the next phase of the Vega project reg. n. 1/0953/16, a questionnaire survey was conducted in which 17 clusters were addressed, with a 44.4% of questionnaires' return. The questionnaire was filled out by following clusters: Cluster Smolenice, Slovak Plastic Cluster, Energy Cluster - Western Slovakia, Slovak Engineer Cluster, Automobile Cluster - West Slovakia, BITERAP cluster, Cluster Turiec, Construction cluster of Slovakia, which does not carry out any activities currently.

Table 8 shows the number of clusters detected in 2017, the number of clusters involved in the survey (of which the number of active clusters) is broken down into the regions of Slovak Republic. The table also shows the number of active clusters in Slovak Republic, ascertained by the questionnaire survey. Prior to conducting a survey, a telephone interview with cluster representatives was conducted, when some clusters confirmed their activity but were not interested in completing the questionnaire.

Survey results show that municipalities and cities (37.5%), regional authorities (37.5%), small and medium sized enterprises (25.0%) and universities, research centers (25.0%) were involved and participated in setting up a cluster. The membership base in later period of cluster activity is mainly made up by small and medium-sized enterprises (62.5%), universities (50.0%) and regional authorities (37.5%). Regarding the number of subjects involved in a cluster activity, the category up to 50 subjects (37.5%) is dominating. The cluster's predominant activities include marketing and advertising (37.5%), consulting and education (25.0%).

If clusters analyzed by the survey are to be classified according to the SIEA classification, clusters of technological character represent 64% of the total number of clusters in Slovak Republic, clusters in tourism sector comprise 36% of the total number of clusters in Slovakia. In the survey it was found out that some clusters are considered as sectoral (industrial) clusters rather than technological clusters for instance Slovak energetic cluster as energetic cluster, Košice IT Valley as IT cluster and the like.

Table 8. Number of clusters in particular Slovak regions within their industry typology

Region	Number of Clusters		Number of clusters in action	Industry / sector
	Established	Questionnaires		
Bratislava	5	0	2	Services; manufacturing energy and construction
Trnava	10	4	5	Manufacturing energy and construction; Key enabling technologies and R&D
Trenčín	2	0	1	Information and telecommunication technologies; Services
Nitra	7	1	3	Manufacturing energy and construction; agro-food
Žilina	8	1	4	Services; Information and telecommunication technologies;
Banská Bystrica	7	1	5	Manufacturing energy and construction; creative industries
Prešov	4	0	2	Services; manufacturing energy and construction
Košice	9	1	6	Key enabling technologies and R&D; Services; Information and telecommunication technologies;
<b>all together</b>	<b>52</b>	<b>8</b>	<b>28</b>	

Source: own processing by the Vega n. 1/0953/16 project outputs

In cluster activities a number of secondary schools has also been involved as associate members. This kind of involvement could positively affect not only the development of particular regions in the future, but in practice the link between education and labor market requirements could be improved. In the context of other subjects being involved in cluster activities, the most frequently mentioned was the issue of involvement of universities and small and medium-sized enterprises within the questionnaire survey in which the asked subjects specified the following reasons:

- universities' involvement: innovation transfer; participation in major projects; preparation and implementation of research and development projects; support for development and research; organization and implementation of scientific and technological research and development in the industry where cluster operates;



- involvement of small and medium-sized enterprises: production co-operation with large enterprises, development and implementation of solutions for government and public administration, research activities, subcontractors for large enterprises, opportunity to find a suitable partner or supplier, opportunity for exchange of experience.

To put it in a nutshell, mostly, in Slovakia, there are operating top-down clusters with public participation as a founding member and initiator for founding. The basic idea of clustering, if we go back to Porter's theory, is the participation of all sectors of the economy. Slovakia is no exception. An explicit example of a cluster with a strong link to regional authority is the Autoklaster Trnava. Trnava regional authority also implements regional policy directly into cluster initiatives. This cluster system also works reciprocally, where cluster brings new impetus to regional development into regional policy. A characteristic feature of Slovak clusters is their regional sphere of activity, such as tourist clusters or automotive clusters. The supra-regional nature way of clustering in Slovakia is rather an exception due to the concentration of an individual sector and its location. An example of a cluster of a supra-regional character is the Slovak plaque cluster having its members scattered around Slovakia. Clustering is a contradictory process, on one hand, the involvement of subjects in cluster activities brings many benefits such as access to innovation, cost reduction, diversification of production, lighter and more cost-effective availability of different types of services, a wider portfolio of products or services, and much more. On the other hand, the clustering process also encounters a number of negative impacts such as sovereignty restrictions, dependency on dominant subjects of a cluster, inappropriate choice of affiliates, geographic location for a cluster, and the resulting other negatives, such as unavailability of qualified workforce, infrastructure and the like.

### 3.2.2 Slovak cluster policy concept

Cluster creation policy should be part of the government's main goal within competitiveness enhancement of Slovak Republic and innovation implementation in enterprises. From a questionnaire survey and a standardized expert interview with cluster representatives, follows

that there is no separate or complex cluster policy and legislation in Slovak Republic that would regulate the legal definitions of cluster, cluster initiative and state support for clusters. In Slovak Republic, regardless of not existing cluster policy and legislation, spontaneous clusters and cluster initiatives are emerging, especially in technology and tourism sectors, from the bottom-up approach, the support for cluster development is directed mainly at regional level. Cluster policy should be based on: regional policy, science, research, technology and innovation policy, and industry and business development policies.

The concept of cluster policy in Slovakia has got a regional and state/governmental character. At regional level, there are initiatives to organize individual actors into clusters. At state level is represented by government, which is supposed to develop particular policies to support individual actors and clusters' development.

As mentioned in previous chapter on European clustering environment, in most European countries to support clusters' development, so-called *cluster programs* are worked out either at national (governmental) level or at regional level. Cluster programs define in particular: funds allocation, organizational and institutional program assignment, and the cluster support usage rules.

In Slovakia at national level the Ministry of Economy of Slovak Republic appears to be in charge of the clustering issue, which issued in September 2013 the *De minimis aid scheme* as a scheme for the support of industrial cluster organizations. This Scheme is focused on industrial cluster organizations support by means of state budget subsidies to finance projects aimed at supporting for development of legal entities interest associations.

Later on, the clustering issue was mentioned in National Strategic Reference Framework for the period of 2007 - 2013, where the cluster support issue is highlighted by only one operational program - Operational Program Competitiveness and Economic Growth. In the revised version, being effective since June 2013, cluster support is addressed in the Priority Axis: Innovation and Competitiveness Growth. Cluster support is also developed in some cross-border transnational and interregional co-operation programs for the period of 2007-2013 with Slovak participation being funded from ERDF, such as: INTERREG IVC and ENPI

CBC SR - Ukraine - Hungary - Romania, the Cross-border Cooperation Program Poland - Slovak Republic, the Slovak-Czech Cross-border co-operation program, the Slovak-Austria Cross-border Cooperation Program, the Competitiveness and Innovation Framework Program (CIP) and the 7th Framework Program.

In Slovak Republic, the concept of cluster policy in the context of the elements stated above is incorporated only partially and marginally, while just certain industries, creative industries and tourism have been the objects of attention in the previous and current programming periods. The following section provides the basic legislative documents relating to issues of clustering, bodies and institutions, which currently contribute most to the promotion and organization of cluster support programs from which the cluster organizations could draw funding for their development in the financial framework periods of 2007-2013 and 2014 -2020.

#### *Slovak authorities and institutions supporting cluster activities at national level*

Based on the V4ClusaterPol research project outputs, at the national level to institutions that contribute to clusters development and their competence varies in different forms of support are included following authorities within the *governmental scope*: Government Office of SR, Ministry of Economy, Ministry of Education, Science, Research and Sport of the Slovak Republic, Ministry of Transport, Construction and Regional Development, Ministry of Culture, Ministry of agriculture and rural development.

To other institutions, which are currently engaged in issues such as the operation and support of clusters we include the *Slovak Innovation and Energy Agency (SIEA)*, which has elaborated several analyzes and studies related to cluster policy. For example, in 2009 SIEA developed an analytical study entitled "Clusters and support for innovation development" and published a brochure "Clustering - Presumption of success" supporting in this way the clusters development in country". In 2015 the study "Cluster policy in Slovakia" was elaborated and many others.

In previous period *Slovak Business Agency (SBA)* and *Slovak Agency for Trade and Investments development (SARIO)* also belonged to institutions that cooperated with clusters on different projects or educational activities.

In 2010 the *Union of Slovak Clusters (USC)* was founded as an association of legal entities to support the development of clusters and cluster policy in Slovakia. It is the only organization representing clusters in Slovakia. Currently, USC has 11 members (6 of them awarded with the European Cluster Management Excellence Label Bronze and 1 with Gold Label). Main vision of USC is to create suitable and competitive business environment through close cooperation of regional government, academia and research with business in the area of innovation. Main goals of USC are: promoting the creation and development of cluster policy in Slovakia; strengthening of research, product development, innovation and technology transfer; improving the quality of all education systems in the areas of interest of the member clusters; supporting the exchange of information at national as well as international level in the area of innovation; participating in international partnerships through projects in the area of education, research, development and transfer of know-how.

#### *Governmental legislative documents and programs related to Slovak cluster activities*

First of all, there must be highlighted the fact that the legal basis of cluster policy being constituted as a coherent complex specifying government regulations, in Slovak Republic the legislation on this kind of scale is currently missing.

When it comes to initial legislative documents related to cluster set up process, at national level, in addition to the *Civil Code* and the *Act no. 83/1990 on Civic associations*, another important legislative act based on which cluster can be established and related to the promotion of clusters is an *Act. 231/1999 Coll. on State aid*, which among other things also applies to the associations of entrepreneurs according to § 20f of the Civil Code. This law defines state aid, the conditions for its granting, the areas for which the state aid is granted, the characteristics

of State aid for small or medium entrepreneur, definition of state aid for the industry of the steel, automobile, shipbuilding and the synthetic fibers, the characteristics of the State aid authority and other provisions. According to this law, the state aid is given to: promoting the economic development of districts with low living standards and high unemployment rate, creating a significant joint project within the EU Communities and Slovak Republic, development of certain activities and economic areas not to affect negatively the trade within the EU single market and protection of cultural heritage and original Slovak art and crafts.

To other important legislative acts which are closely linked with the creation of special interest groups and thus likely to be important in the process of establishing and development of clusters in Slovakia are included:

- Commission Regulation (EC) No. 1998/2006 of 15 December 2006 on the application of Articles 87 and 88 of the Treaty to de minimis<sup>1</sup> ("Commission Regulation (EC) no. 1998/2006")
- Act no. 523/2004 Coll. on Budgetary rules in Public Administration and on amendments to certain acts, as amended ("Act no. 523/2004 Coll.")
- Act no. 71/2013 Coll. on the Provision of subsidies within the Ministry of Economy of Slovak Republic ("Act no. 71/2013 Coll.")
- Act no. 431/2002 Coll. on Accounting, as amended (the "Accounting Act").

Firstly, let's get focused on *documents* issued by Slovak government supporting the clustering activities in Slovakia. For *the period of 2007-2013* there were the following first programming documents in Slovak Republic at national level highlighting the significance of clusters and their support. The very first one was the *Innovation policy for the years of 2011 – 2013* saying that in the sphere of activity of Ministry of Economy, the basic goal of the innovation policy is to create the supporting mechanisms for the creation and development of innovative structures, innovative businesses, partnership and cooperation of enterprises, universities and research institutes in the field of research and development and innovation, and creating conditions for competitiveness enhancement of Slovakia. Within the innovation policy regarding the conditions for the formation and development of cluster support

there were initiatives such as Priority no. 1.: High-quality infrastructure and an efficient system for innovation development and within it there was the Measure no. 1.: The support of innovative industrial cluster organizations. The measure aims to increase the competitiveness of industry through promoting the activities of selected industrial cluster organizations in order to support the associated industrial activities in selected areas.

In the *Innovation strategy for the years of 2007 to 2013*, regarding the cluster issue there is a Measure 3.2: Support of common services for entrepreneurs, which aims at the innovative environment improvement. The measure will include also the development of clusters, based on which there will be created conditions for cooperation of business sector with universities, business and innovation centers in certain industries and services sectors in connection with the development potential in regions. To implement the Innovation strategy of Slovak Republic within the execution of Measure 3.2 resources will be provided from the state budget, structural funds - European Regional Development Fund and CIP - the EU Competitiveness and Innovation Program. This measure of Innovation strategy was thematically and financially linked to the OP Competitiveness and Economic Growth within the Measure 1.2: Support of common services for entrepreneurs.

To other important document adopted in the programming period for the years of 2007-2013 and which can be used in the process of forming and supporting the clusters development was *National Strategic Reference Framework for the period of 2007 - 2013*, adopted in 2006, and the Ministry of Transport, Construction and Regional Development was in charge. The document also states that during the programming period of 2007 - 2013 it is necessary to concentrate the intervention of structural funds to projects that will create a more attractive environment for realization of innovation activities of global corporations as well as stimulate the local innovation capacities to create and develop competitive and innovation clusters. Those ones then have a chance to significantly increase the performance and efficiency of science and research, reach innovation into industry and services to enable the efficient use of resources, creation and transfer of knowledge in all sectors of economic activities.

*National Reform Program of Slovak Republic for the years of 2012, 2013*, within the competence of Slovak government. In a document from 2012 it was intended to promote the establishment and operation of high-tech clusters. In 2013, in the sphere of innovation it was intended to promote the creation and operation of innovative clusters by means of using the financial and non-financial instruments that will support networking improvement, participation in international projects and competitiveness enhancement of cluster organizations members.

Within the *programming period of 2014-2020* there are following important cluster support documents. As first there is *Research and Innovation Strategy for Smart Specialization of the Slovak Republic (RIS3)* where to responsible institutions are included: Ministry of Economy, Ministry of Education, Science, Research and Sport of Slovak Republic, where the issue of cluster development should be dealt with the Strategic objective 1: Further integration and anchoring of key industries to increase local added value through the cooperation of local supply chains and promoting their mutual networking, under Measure 1.1. Innovative capacities development through cooperation between companies and research institutions in key Slovak economy sectors. Within the measure it will be supported the creation of consortia to handle the multidisciplinary problems and to anchor the sectors by means of clusters and other forms of networking in order to develop the innovative capacities.

*National Regional Development Strategy of the Slovak Republic*, where responsible bodies for this document is Ministry of Transport, Construction and Regional Development. In this document the relevance of clusters' development. This document, states that in terms of recommendations to solve problems in research, development and innovation the cluster are the functioning means by which the economic and social environment, attractiveness and competitiveness of the regions can be significantly influenced.

In document *The basis of strategy of creative industry development in Slovak Republic*, to support clusters there is the separate measure 3.4: Support clusters is dedicated. Its aim is to encourage networking between creative, technological and business sectors. The measure is

aimed at developing creative networks and clusters, by means of which conditions for cross-sectoral cooperation in creative industries and services will be created in connection with the development potential in regions and conditions for cooperation with investors. Responsible bodies are here: Ministry of Culture, Ministry of Economy

Secondly, regarding the *government programs* supporting the clustering activities in Slovakia within the *programming period 2007-2013* the cluster concept was supported from following programs. As first there was *Operation Program Competitiveness and Economic Growth* as part of the National Strategic Reference Framework 2007-2013. Within this operational program the support will be focused on tourism and clusters building. Tourism activities development in Slovakia under this document were supposed to include local services and be focused on clusters creating / associations / for entrepreneurs; within the Priority axis - Innovation and Growth Competitiveness the support was also directed to construction of industrial parks, innovation centers, incubators and clusters.

*Regional Operational Program (ROP)*. Within this operational program to promote the tourism cluster development there was the Priority axis (PA) 3 - Strengthening the cultural potential of the regions and tourism infrastructure. One of the activities to meet the objectives of the Priority axis 3 of ROP in 2007-2010 was the support of tourism presentation at regional and local levels, creation and promotion of existing tourist information centers, creating of partnerships at the levels of regions and the private sector and regional clusters. For this reason, in 2010, there was a call only to non-investment projects in tourism with a focus on the tourism clusters promotion, building partnerships among stakeholders in tourism, creating of complex information portals, marketing activities etc., in accordance with the new national legislation. Responsible bodies: Ministry of Construction and Regional Development of Slovak Republic.

*The Scheme of aid de minimis DM 3/2013*, under this scheme 6 industrial cluster organizations were supported in the sum of 160 thousand EUR.

In the *programming period for the years of 2014-2020* there were adopted the series of measures that can be used for cluster support, in



addition to series of measures being directly aimed at cluster support. The first is *Operational Program Research and Innovation*. The managing bodies include: CCA - Government Office of SR, managing authority: Ministry of Economy, Ministry of School, Science, Research and Sport of SR. The priorities of program towards clusters: PA 1 Promotion of research, development and innovation, Investment Priority 1.2 Promoting business investment in research and innovation, and developing links and synergies between enterprises, research and development centers and the higher education sector, in particular promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networking, clusters and open innovation through smart specialization, and supporting technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities and first production, in particular in key enabling technologies and diffusion of general purpose technologies, Investment Priority 2.2 Promoting business investment in research and innovation, and developing links and synergies between enterprises, research and development centers and the higher education sector, in particular promoting investment in product and service development, technology transfer, social innovation, eco-innovation, public service applications, demand stimulation, networking, clusters and open innovation through smart specialization, and supporting technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities and first production, in particular in key enabling technologies and diffusion of general purpose technologies. Investment Priority 3.3 Supporting the creation and the extension of advanced capacities for product and service development.

*Integrated regional operational program 2014 – 2020*, with managing bodies: CCA - Government Office of SR, managing authority: Ministry of Agriculture and Rural Development of Slovak Republic and implementation body is Ministry of Agriculture and Rural Development. Main priorities of the program focus on cluster issues: PA3: Mobilizing creative potential in the regions. 2.3.1. Investment priority No. 3.1: Supporting employment-friendly growth through the development of endogenous potential as part of a territorial strategy for specific areas,

including the conversion of declining industrial regions and enhancement of accessibility to, and development of, specific natural and cultural resources. Specific objective No 3.1: Stimulating the promotion of sustainable employment and job creation in the cultural and creative industry by creating a conducive environment for the development of creative talent and non-technological innovation.

*The Scheme of aid de Minimis DM18/2014-2017.* In 2014 was planned 113 thousand EURO for supporting, but in reality 127,527EUR was promoted (7 supported projects). In 2015 7 projects in total of EUR 130 thousand received subsidies to promote industrial cluster organizations. In 2016, the Ministry of Economy of the Slovak Republic announced a Scheme on the industrial cluster organizations enhancement (de Minimis Aid Scheme), grants were provided in the amount of 10 to 50,000 EUR.

When it comes to illustrating the current clustering environment in Slovakia several research methods mapping the Slovak cluster policy background were worked out in terms of the V4ClusterPol project. The SWOT analysis of Slovak Cluster policy in Table 9 shows the status quo, positive perspectives along with drawbacks and wrong moves within the Slovak cluster policy development.

Table 9. Slovak cluster policy SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> <li>▪ The way of clusters' establishment on a "bottom – up" base approach;</li> <li>▪ The participation of Slovak clusters within the international projects;</li> <li>▪ Impact on regional development;</li> <li>▪ Diversification and activities expansion of cluster members.</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient support from government at national, regional and local level;</li> <li>• Weak clustering issues awareness among politicians both at national and regional levels;</li> <li>• Distrust among cluster members.</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>• Cooperation of clusters with universities and secondary schools;</li> <li>• Regional, national and international cooperation with other enterprises or clusters;</li> <li>• Government Approach to R&amp;D within the New Cohesion policy .</li> </ul>	<ul style="list-style-type: none"> <li>• Insufficient legislative and financial support from the national and regional level;</li> <li>• The outflow of skilled labor from regions and the country abroad;</li> <li>• Difficult access to scientific research projects funding from EU structural policy.</li> </ul>

Source: own processing by the V4ClusterPol project outputs

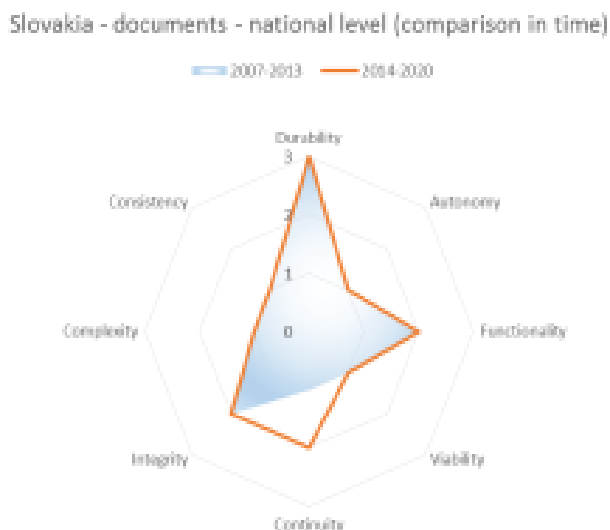
The other approach how to assess the Slovak clustering environment is to compare the documents and programs supporting cluster policy development in Slovak Republic within the two programming periods of 2007-2013 and 2014-2020 by means of the Spider analysis. On the basis of the detailed overview of documents and programs related to Slovak cluster activities having been described above the best way how to make parallel comparison assessment of documents and programs providing the support for Slovak clustering development within the two previous financial periods the spider analysis has been picked up as shown in figures 10 and 11.

Figure 10. Spider analysis of programs characteristics supporting the cluster organizations' development in Slovakia



Source: by the V4ClusterPol project outputs

Figure 11: Spider analysis of documents characteristics supporting the cluster policy development in Slovakia



Source: by the V4ClusterPol project outputs

While elaborating the Spider analysis the following indicators were used. Durability means the length of the time span of the document/program operation. Autonomy shows the degree of focus on cluster policy showing that the document is either exclusively devoted to it, or is a part of a broader/similar policy. Functionality describes the combination of document adoption at government level, its force scope throughout the sectors within particular governmental departments. Viability is connected with the existence of clearly entrusted governance body and existing allocation of financing from the public budget. Continuity means the confirmation of the governments positive attitude towards the cluster policy issue being a permanent part of the policy-making tools with regular updates. Integrity presents the degree of covering the sectors of public administration and the industries. Complexity shows if there is any possibility to offer the cluster's developmental stage the relevant support. Consistency means the degree of the provision of essential supportive measures that public sector authorities can offer within their governance to assist the cluster policy.

When comparing the programs and documents promoting the clustering activities in Slovakia within the periods of 2007-2013 and 2014-2020 it can be implied that programs have been supporting cluster in better way than documents. The programs "spider" graph is a little more complex, more characteristics have bigger distance from zero as well as more programs indicators have made shift forward in 2014-2020 period than it can be seen by the documents "spider" graph. Especially programs are more focused on cluster issue and are more devoted to cluster policy than documents as shown by the autonomy indicator. The biggest failure for both documents and programs appears to be the start-up support for the cluster management capacity building and cluster management excellence, R&D projects, internationalization covering the cluster development stages.

Generally speaking, Slovak cluster policy concept is a new approach to addressing the economic development challenges of both regions and the whole country. For this reason, legislative documents as the key features of cluster policy where the support and functioning form of clusters in particular area (municipality, region, state, association or group of different countries), support programs and the role of public administration as a facilitator or mediator among potential cluster members should be modified.

Yet Slovak cluster policy cannot be seen as a developed one. It still can be found in its initial phase with several problems. However, the situation can be improved through better assistance organization lasting several years to come. Generally Slovak cluster activities are limited and focused mainly on the promotion of cross-sector partnerships among businesses, the staff skills and qualification levels upgrading by means of experience exchange in the area of new technologies, processes and services usage. At present times we can see the limited number of options to be involved in projects, missing legislation in terms of clusters enhancement, and the fact that the proposed project calls are not aimed at cluster. Those are the pitfalls that clusters have to deal with face to in order to be successful.

Besides the common types of clusters such as technological and tourism ones there is also another challenge emerging in the Slovak way of

clustering. It's about the origin of a new so called cross-sectoral clustering bringing the advantage of the goal how to change the view of the clusters functioning, to transmit the best approaches into cluster policies of individual countries/regions and in cooperation with other project partners to ensure the project implementation in real life.

When it comes to overall generalization of the Slovak cluster policy and clustering environment we have drawn to the conclusion that there is the managing body or authority responsible for cluster policy in most of the EU membership countries. In Slovak Republic suitable body, that could be responsible for cluster policy could be the Slovak Innovation and Energy agency or some of the Ministry of economy departments.

The Slovak clusters take part in the assessment process realized by ESCA, but the specific system of cluster categorization in Slovakia doesn't exist. SIEA categorizes clusters into two group: technological and tourism. In the frame of this project the Slovak clusters were classified by branch classification into 6 categories while clusters of tourism are ranked among cluster of service industries. The important role in Slovak "cluster policy" play Union of Slovak clusters, who could be the disseminator of awareness among stakeholders.

To improve or to keep going the Slovak clustering activities several recommendations to policy-makers and public sector officials being taken into account could enhance the benefits from Slovak cluster policy to be reflected not only at national economy level but also highlighting the regional development activities. First of all, stakeholders should act as a careful manager and sophisticated client - the "revealing" of existing clusters should be considered as a part of the government due diligence of the territory administration – clusters are the regional assets that wait for capitalization. Secondly, stakeholders have to build on local differences to prove the competitive advantage through the cluster mapping and cluster analysis tools, include the emerging and cross-sectoral industries. Thirdly, to understand which industries cluster and how to smooth the way to cooperation and trust among businesses through the cluster initiative and the cluster actors' facilitation tools. Fourthly, stakeholders must recognize the cluster development stages, to differentiate actions in line with the needs of each stage, to provide measures and funding that ensure the consistency and continuity of

the cluster policy. Fifthly, the dialogue between firms and government through cluster organizations must be fostered to perform the cluster governance in line with the region's needs. Finally, there must be gained more through measuring, monitoring and assessment activities.

### **3. 3    Clusters as Slovak regional competitiveness enhancement tool**

Within the framework of global political economy, there are parallels within the theory of national, regional and local competitiveness in the world economy environment. It follows that local environmental factors play a key role in the emergence of clusters in a particular region as a basic symptom of national economy competitiveness in the world economy system, i.e. the world economy arena. Regions compete one another not only within a single country but also among states to gain and keep their share on export markets, attract and retain firms, i.e. investment, and create and keep jobs. In this chapter, regional competitiveness will be understood in relation to clusters emergence on the basis of innovation and regional innovation systems development. Not only in Slovakia regional competitiveness is the ability of a region to attract and maintain successful firms within maintaining the stable or rising quality of life for the inhabitants in a region, therefore the cluster concept has emerged as a result of the study of companies' competitiveness. As the previous subchapter was discussing the forming Slovak cluster policy pattern within the institutional and legislative baseline from the national point of view this part will be focused on the cluster activities processes within the Slovak regions, where clusters could be acting as one of the main regional competitiveness enhancement tools.

#### **3.3.1    Slovak clustering activities at regional level**

At regional level, cluster programs are partly incorporated into Regional Innovation Strategies (in some regions, e.g. Trenčín Region) developed within EU Framework Programs and Economic and Social Development Plans issued by regional authorities (such as Trnava Region) with a view to promoting the emergence and development of clusters and networking. For example, in Economic and Social Development

Plan of Trnava regional authority, a strategic goal is defined - to increase the performance of the region through innovations in automotive, electrical and energy sectors, while clusters being set up within the most important industrial sectors - automotive, electro-technical, energy and the number of active partners in clusters are considered as indicative quantifiable indicators of regional development. In the regional strategy of Prešov region the cluster support is defined in the 1st Priority theme: Business Development, Specific Objective 3: To increase the use of innovation and the implementation results of research and development compared by 20% until 2018 compared to 2008 as well as Measure 3.4.: To support the creation and operation of knowledge clusters.

Despite these facts, cluster initiatives are rather emerging in regions. An example is Trenčín region, where none of the cluster is currently in action despite various cluster initiatives being in action. Some entities are registered in clusters as members of the cluster (for example A. Dubcek University in Trenčín is registered as a founding member of BITERAP cluster in Košice region or are participating in cluster initiatives (Faculty of Social and Economic Relations at A. Dubcek University in Trenčín, participated in creation of a joint cross-border Zlín-Trenčín initiative for the long-term and coordinated cooperation within the creative industry sector).

For this reason, it is also necessary to focus on other possibilities of regional development in terms of cluster groupings formation. As it results from the findings within solving the particular grant tasks in the period 2012-2015, the ClusterPol project in 2016 and the Vega projects in the period of 2016-2018 at the Faculty of Socio-Economic Relations, A. Dubcek University in Trenčín, there is a sectoral differentiation with in the break down according to regions in Slovak economy, while the potential of individual regions and their comparative advantages is not being used sufficiently.

Regarding the legal basis for clusters in Slovak Republic, the used terms include cluster and cluster organizations. The designation „cluster“, a cluster organizations uses directly in their names. The term “cluster organizations” is used by Slovak Innovation and Energy Agency (SIEA),



taking this indication as the institutionalized form of clusters. The Association of legal entities represents the legal form of clusters majority in Slovak regions. The establishment, legal status and termination of the association of legal entities is arranged by Civil Code (Regulation no. 40/1964 Coll.), § 20f. The Civic association is the second, less widely used legal form of clusters. Its origin, legal status and termination is regulated by the Act no. 83/1990 Coll. on association of citizens, as amended. In official register of associations of legal entities and registration of civil associations 49 clusters are registered but not all are active and are doing activities related to the performance of a cluster. The BITERAP Cluster in the Kosice region was founded in 2004 as the first cluster in Slovakia and the Slovak AeroSpace Cluster in Bratislava region in 2016 as the last one.

When it comes to initial legislative documents related to the cluster policy creation, at regional level, the promotion and development of clusters is often already implemented in programming and strategic documents of regional development. In most cases, it is about the programs of economic and social regions and municipalities. In addition, regions, municipalities compose other strategic documents in which the issue of the establishment and operation of clusters is incorporated. For example, in the period of years 2007-2013 in Trnava region the clustering issue was incorporated in following documents such as: Action Plan for the Development of Industry in territory of Trnava Region, The Strategy of Industrial Development in Trnava region, the strategy of tourism development in the Trnava Region (2008 -2013), The program of economic and social development of Trnava Administration Unit. In current programming period there are documents: The program of economic and social development of Trnava Region, integrated regional territorial strategy of Trnava region for the period of 2014-2020. When talking about cluster - supporting authorities and institutions at regional level, local authorities (region, municipality, city) are included to institutions that contribute to the development of clusters. These bodies provide support mainly in the form of membership fees.

### 3.3.2 Clusters as a source of innovation potential within Slovak regions

The issue of innovation is concerned with an EU Innovation policy that recognizes significance of innovation and aims primarily to promote its emergence and improve its efficiency. In Slovakia, innovation policy is based on the same goals, but there are also other ones based on different regional needs. This is done through innovation strategies and within their specific measures. According to Urbančíková and Burger (2014), innovation policy is a public activity that affects technological change and other types of innovation. It is a type of public policy that includes elements of a number of policies, including research and development policy, technology policy, education policy, social policy, industrial policy and environmental policy. It is defined as a policy aimed at increasing the quantity and effectiveness of innovation activities. By innovation activities, we understand the creation and adaptation of new or improved products, processes and services. According to Vojtovič (2016) and Žižka (2008), innovation policy generates new knowledge, increases investment efficiency, expands innovation through networking of partnerships, and stimulates the business sector to create new products, processes and services. Innovation policy includes several tools through which its actors achieve particular goals. Instruments of innovation policy can also be shared within the public policy.

Within the analysis of Slovak Republic's innovation environment and policy, it is necessary to highlight that the Innovative Strategy of Slovak Republic for 2014-2020 is linked to the European Union's Innovation Strategy in terms of the Europe 2020 and the research, innovation program Horizon 2020. One of the conditions for drawing on the Structural Funds within the field of innovation was the elaboration and approval of the Slovak Republic's Innovation Strategy in 2007, which was enforced by European Commission. The Slovak Republic's innovation policy is based on the Program Declaration of Slovak Government, National Reform Program, National Strategic Reference Framework and the EU and OECD Strategy Papers on Innovation. The basic documents managing innovation policy in Slovak Republic are "Innovation Strategy of the Slovak Republic until 2013" and "Innovation Policy of SR for 2008-2010". The innovation policy for the years 2011 - 2013 is in line

with the "Program Statement of the Government of Slovak Republic for the period 2010-2014". Their aim is to make innovation in Slovakia as one of the main tools for the knowledge economy development and to ensure high economic growth level of SR that will rank Slovakia among the most advanced economies in the EU. The document being related to the current planning period is the "Slovak Republic's Innovation Strategy for 2014-2020". The main aim of the Innovation Strategy for 2014-2020 is to identify activities and tools to support innovation activities managed by central governmental authorities that will be funded through national public sources and Structural Funds (Ministry of Economy SR, 2018). The strategic objective of this document is to improve the ability to apply innovation and hence improve the innovative performance of SR which is currently very low, despite the various efforts. To achieve this goal, the Innovation Strategy also mentions the changes that need to be made:

- structural change in R&D and innovation funding,
- the change in existing state science, technical and innovation policy,
- creating conditions that motivate entrepreneurs to increase their activities,
- changes in the field of applied research and innovation.

It is about a strategy that offers opportunities for sustainable competitiveness growth and hence for employment growth i.e. new jobs creation. This is one of the priorities of Slovak Government. It is not just a strategic document, but a process of transformation of Slovak Republic to advanced and developed economy within the world economy system. The 2014-2020 Innovation Strategy contains 5 main support areas and includes several instruments through which the support can be reached as it can be seen more in detail in Table 10.

Table 10. The Slovak Republic's Innovation Strategy support areas for 2014-2020

<b>1. Enterprises' competitiveness support (especially SMEs)</b>
<ul style="list-style-type: none"> <li>- a micro-grant program enabling entrepreneurs without a job to get funding to start a business</li> <li>- cluster support programs that may, in addition to competitiveness enhancement also contribute to improving the prosperity in regions</li> <li>- programs supporting better usage of patents</li> </ul>
<b>2. Linking the knowledge providers with business, government, public administration and third sector actors</b>
<ul style="list-style-type: none"> <li>- innovation vouchre having the form of unretrievable financial support</li> <li>- conferences and workshops</li> </ul>
<b>3. To be successful on EU Single Market and internationalization of enterprises</b>
<ul style="list-style-type: none"> <li>- a program promoting the engagement in international projects and EU programs</li> </ul>
<b>4. Education support</b>
<ul style="list-style-type: none"> <li>- to change the content of teaching courses or adding new ones to syllabus</li> <li>- to educate young people as future entrepreneurs</li> <li>- the "Science for the Future" program, which allows students by their visiting to different work places to learn more about specific occupations</li> <li>- lifelong learning support within the corporate environment</li> </ul>
<b>5. The cross-section projects support</b>
<ul style="list-style-type: none"> <li>- program to support projects in emerging markets</li> <li>- e-mobility support - electric vehicles usage</li> <li>- a program for the efficient domestic raw materials usage</li> </ul>

Source: own processing by Ministry of Economy SR, 2018

As it can be seen in Table X, the business competitiveness support is to be achieved through various programs. Whether by promoting clusters or business start-ups. At the same time, all entities are supposed to be linked, which can make all activities more efficient and bring new high-tech innovations. Emphasis is placed on the area of education, because educated and qualified workforce is an essential element for innovation to be attracted and implemented in regions. Innovations currently significantly affect the economy. In general, it is about implementing something new or improved. When differentiating several types of innovation, go through an innovative process that leads to successful or even unsuccessful implementation of innovation in practice i.e. in commerce.

Active clustering is the basis of a growth program that is typical for clusters geared to building regional well-being (Prno, 2008). It is crucial to realize that growth in a region and attracting the potential foreign investors will only be reached by a successful cluster, which does not just consist of a "cluster of regional companies". In order to operate

properly, cluster must meet a number of criteria: apart from the priority of geographic concentration, in particular, it is about cooperation, strong links among members, trust and social networks that give the cluster its uniqueness. Cluster increases the political-administrative and, of course, economic sphere of the region, and hence the growth of a region in all its aspects. Stimulating and supporting the emergence of clusters should be a cornerstone for strategic development in regions.

As part of the cluster assessment as an innovative tool for sustainable development in Slovak regions, the SWOT analysis has been used as a method how to identify the weaknesses, strengths, opportunities and threats of the object or issue being observed. In the SWOT analysis of innovation potential in Slovak Republic we have assessed the selected issues with a scale from 1 to 5, while the 1 being the weakest value for the low intensity and 5 the highest value for the high intensity as presented in Table 11.

Table 11. The innovation potential in Slovak Republic SWOT analysis

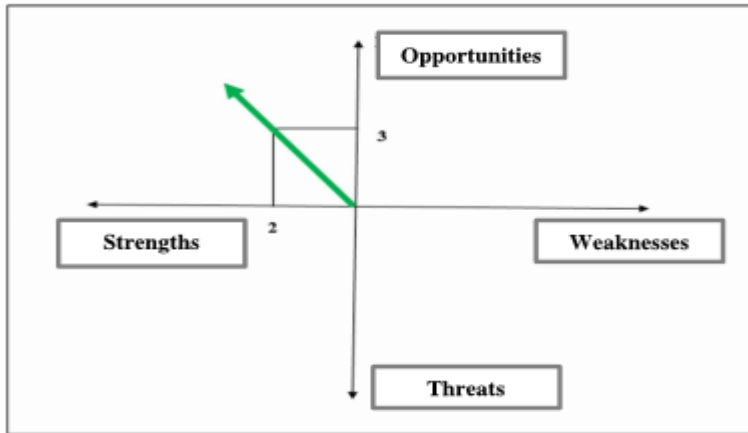
	Strengths	Points	Weaknesses	Points
1	the potential of workforce qualification structure	4	the growth of expenditures from state budget for subsidies	3
2	the ability of small and medium-sized enterprises adaptation to new innovations	5	regional discrepancies	4
3	high degree of cross-sectoral cooperation	5	insufficient motivation for clustering	4
4	the possibility to use EU Structural Funds	3	lack of patents	3
5	cooperation with public sector	3	absent legislation regulating the cluster business	4
	<b>the SUM</b>	<b>20</b>	<b>the SUM</b>	<b>18</b>
	Opportunities	Points	Threats	Points
1.	Slovak GDP growth	4	insufficient share of GDP on research and development	3
2	growing attractiveness of Slovak economy	4	brain drain	3
3	an open and export oriented Slovak economy	4	tax avoidance through non-profit organizations and NGOs	3
4	clustering set up and functioning of clusters on bottom-up approach	4	absenting Act on lobbying	3
5	regional co-operation of clusters with public administration	3	misunderstanding of the meaning and activity of clusters	4
	<b>the SUM</b>	<b>19</b>	<b>the SUM</b>	<b>16</b>

Source: own processing

The results of the SWOT analysis are:

- Strengths exceed the weakness:  $20 - 18 = 2$
- Opportunities outweigh the threats:  $19 - 16 = 3$

Figure 12. SWOT analysis graphic expression



Source: own processing

Figure 12 shows that the innovative potential of clusters in Slovak Republic, despite weaknesses and threats, has the ability to take advantage of opportunities, thanks to its strengths, such as the quality of services being offered, rapid adaptation of enterprises to new innovations, high level of cooperation, healthy competition, cooperation with public sector. Thanks to clusters, Slovak Republic can increase its innovation potential, GDP growth, the attractiveness of Slovak Republic, the potential of foreign buyers, its acting on foreign markets, and the reduction of disadvantaged citizens' status in cooperation with the public administration.

Possible directions for regional development in regions have been specified for all administration units in materials called Regional Innovation Strategies (RIS), based on a comprehensive analysis. Development poles presets potentially the most appropriate development directions for individual regions, which based on particular initiatives can also be used by individual clusters in Slovakia. In terms of prospective regional areas in Slovakia within the clusters innovation potential, for

instance in Bratislava region, clusters can focus on their innovation potential in the field of logistics, information and communication technologies or chemical and biochemical engineering. In Trnava region, the areas of energy security enhancement, automotive or electro technical industry are significant; Trenčín region there are the areas of industrial technologies, mechatronics or chemical specialties; in Nitra region agriculture, food, plastic processing and biotechnology; in Žilina region, the bearing industry, engineering industry and air transport; in Banská Bystrica region renewable energy sources, metallurgy and work machines and their systems; in Prešov region packing materials and health care, and in Košice region biotechnology probiotics and metallurgical industry are the key areas of significance.

Based on the SWOT analysis, we note that the effect of clusters in the regions of Slovakia is to enhance the attractiveness of region for new investors and hence increasing the number of jobs resulting in higher income of actors and GDP creation in regions. When economic growth and employment in region is rising, it brings benefits not only to cluster and its actors, but also local and national economy. We can argue that the local capabilities and knowledge of each region affect the overall national economy, its dynamics and competitiveness. The process of clustering is affected by the overall landscape environment status in relation to other countries as well as by the level of local stakeholders. Therefore, it is essential to cooperate with all the sectors involved in cluster. The likelihood of increasing discrepancies within the regional economic performance along with increasing social and economic development discrepancies among regions is likely to confirm this estimate in recent years. Regions that are already using clustering as a tool for their development are better prepared to enter foreign markets.

### 3.3.3 Clustering versus regional competitiveness – synergy effects

From the theoretical background to the issue of competitiveness it is clear that competitiveness can be assessed at different levels, one of which is the regional level. The content concept of national competitiveness can also be applied at regional level, then we are talking about regional competitiveness. According to Falťan and Pašiak (2004), the

competitiveness of regions is, besides production indicators, determined by the overall structure and concentration of regional production and innovation capacities, the quality of human resources in regions, the quality and density of infrastructure in regions, but also non-economic factors such as the availability and efficiency of the use of information and communication technologies, environmental, ecological sustainability of regional development, population, the tendency of population growth, the density and structure of population, urbanization rate and the like. As argued by Kenderová (2010), regional development is a process that leads to creating a vital and productive region. One of its objectives is to launch a long-term process of building the regional competitiveness with the full use of local potential and local peculiarities. In regional development, it is important to support the development of partial activities that together form the economic basis of a region. Regional competitiveness enhancement is one of the basic objectives of Slovak regional policy. Clusters are considered to be the fundamental elements for regional development based on the innovative potential exploitation for regional development, supporting the category of territorial competitiveness. Local factors of surroundings are considered important for the competitiveness of companies in regions.

According to Ručínská (2008) there are the following most important factors of competitiveness of regions, which influence the economic and social development of regions: demographic development, *innovation*, *clusters*, policy and its quality, location of enterprises, geographic, cultural and historical conditions, number and structure of enterprises and their mutual relations, industrial structure in a region, education and universities, foreign investment. Based on the synthesis of several authors, the following factors of regional competitiveness are significant: the structure of economic activities in a region, *clusters*, the ability to generate the *process of innovations* and outputs, human resources, *foreign direct investment*, infrastructure, efficiency of public administration, social capital. After presenting these two views on regional competitiveness factors, we can see the match in factors such as clusters, innovation, foreign investment. These are the factors most commonly cited by experts in publications as the most important for the growth and sustainability of regions' competitiveness.



From previous analyzes, discussions and polemics regarding interaction links between clusters and regional policy in European and Slovak context it is clear that clusters are a basic tool for regional development and a key factor how to increase their competitiveness, at the same time they can be identified as a significant element to create the business environment and strengthen the competitiveness and innovation activity of a region that supports this type of organizing and managing the innovation. The significance of clusters for regional development is that entities being grouped in clusters support and attract other institutions linked to clusters to the regions. It results in re-structuralization of economic conditions within regional economy in terms of sectoral dimension and the strengthening of knowledge and research and development structures. It is precisely the clusters theory development that is associated with the name of Porter, who extended the theory of competitiveness to global dimension conditions. The process of globalization and the associated development of information and communication technologies have brought new opportunities for forming the inter-company cooperation and networking of companies based on horizontal or vertical cooperation or later cooperation.

*Network business* is defined by Stejskal (2011) as a co-operation of a group of companies that use joint resources to collaborate on joint projects. Business networks can take a variety of forms and serve to different purposes; their main purpose is to make businesses more involved, such as the joint use of education and training institutions, common information networks; the use of joint ventures to promote export, joint logistics, joint distribution networks, service, etc. But it should be kept in mind that companies use possible forms of cooperation, but on the other hand they act as competitors and operate in one sector, so entrepreneurial autonomy, flexibility, trust and acceptance of business ethics and morals are needed. Networks accelerate and facilitate the creation of innovations, allow to reduce overheads, use economies of scale. These benefits are the main reason why businesses enter the co-operation networks.

The significance of clusters for the competitiveness of an economy is based on so-called clustering approach, which means geographic concentration of interconnected and cooperating companies and institu-

tions in a specific area within common interests to increase productivity and competitiveness. The long-term sustainability of an economy or region lies mainly in the geographical arrangement of a source base for its growth; clusters as means of the development of innovative activities are such a base. Moreover, there is a synergy of other factors that, through the cluster form regional competitiveness being reflected in productivity growth, increasing employment, regional GDP growth. The application of these factors is implemented through the policy tools of entities (structures) that are integrated in clusters. There must be intense linkages among the basic units being integrated within clusters that make cluster work efficiently and bring benefits being represented as goals of its establishment.

In particular, industrial clusters are significant for regional innovation policy implementation, as their main activity is creation of innovation, the increase of regional innovation performance and the commercialization of innovation. The presence of clusters in a region thus affects the economic performance of regions in terms of regional gross domestic product growth, regional gross output and added value enhancement hence ensuring the social development of regions through growth within employment, income, consumption and living standards.

Výrostová (2010) defines cluster benefits for regional development as:

- increasing of productivity and efficiency of enterprises in a cluster,
- establishment and development of entrepreneurial activity in regions,
- creation and dissemination of innovation in regions,
- geographic proximity of companies in region reduces transaction costs,
- better use of capital, labor, technology in regions.

All of these cluster benefits are reflected in the economic effects for the growth of businesses, regions, and the whole economy, hence supporting the competitiveness enhancement of these economic or regional structures. There are many sources, competitiveness factors, competitiveness symptoms and overall benefits for the economy of a region. Since regional competitiveness is the regional factors implementation in order to achieve regional economic growth, the role of all actors at this level is *synergistically to result in regional GDP growth*. If

GDP grows per capita in a region, there is a prerequisite for raising the living standard and quality of life in that region.

From all the stated above it can be argued that the essence of a cluster as a specific interest group in various combinations of manufacturing companies, nonprofit organizations, government and regional/municipal institutions is the comparative advantage for as each participating entity as the cluster by itself, which in other circumstances and conditions could not arise. Vision and understanding of comparative advantage and subsequent mechanisms of cluster institutionalization are not simple issues. It requires expertise in various production processes of involved stakeholders, right functioning of governmental and regional authorities, legislation, principles of economic, social and regional policies and so on.

In addition, mechanisms and processes of clusters institutionalization are not possible being carried out without adequate regulation and management of these activities. Under these circumstances, finding comparative advantage of actors with different production and other activities and the founding of cluster are practically impossible without the initiative, support and regulation these activities by external agencies. In this case, those outside bodies should be represented by state and regional authorities that would follow the comparative advantage not only for stakeholders, but also for society and regions. Therefore, the absence of government policy or cluster development strategy means misused one of the factors of the development for enterprises and regions that cannot be replaced by anything else. Even if the cluster initiative arises from the bottom, at least it must have a legal basis for its operation, which is primarily the responsibility of government. At the same time, it should include the interests (benefits) for society, regions or municipalities being represented by government and regional authorities.

This subchapter was discussing how the Slovak cluster activities are implemented into Slovak regional development strategy agenda by assessing their synergies and parallels, how important role it plays to assure sustainable economic growth in Slovak economy and to enhance Slovak economy competitiveness within European and international economy environment. The attempt was to figure out how and in what

way Slovak clustering activities within the technology and innovation implementation processes in Slovak regions can affect the sustainable economic growth in terms of the promotion measurements for social and economic development.

The main reason for the Slovak success story of industrial clusters was their immediate proper adaption to changed conditions of international business and especially international division of labor, even balanced and proportional industry location. Nonetheless the competition has been intensified not only in businesses, but also in municipalities and regions, especially in relation to their own economic activities and in relation to the attraction of economic activities to its territory, it is desirable to promote the formation of clusters. It can be concluded that clusters and policy support for the development of small and medium-sized enterprises must be based on three points. The first point assumes that the basis of regional policy is to build it on its local strengths. Secondly, the development of innovation, research and development centers at the regional level to foster the development of economic activities, help to strengthen regional development and eliminate regional discrepancies. Thirdly, the creation of local networks of enterprises, public institutions and trade unions in order to link regional administrations to national authorities while lobbying.

This chapter provides a comprehensive, coherent and systematic overview of the basic principles and objectives forming the backbone of Slovak cluster policy and the nature of its operation mechanism along with Slovak regional development. Clusters play an important role when it comes to the access of SMEs to innovation and research, or the joint development of international markets. They will also play a crucial role in the future for the allocation of Structural Funds which requires greater prioritization and specialization within regions. Slovak government and regional authorities recognize the significance of clusters and prospects for economic development and that due to the support of clusters is the subject of very intense debate both at Slovak authorities also supporting the exchange of information, developing strategies processing and expert analysis including through support associations and initiatives that focus on the development of clusters.

This chapter has shown how Slovak economy can succeed if Slovak government and regional authorities acts collectively and effectively using the synergy out of regional and clustering activities. The ultimate objective is to help Slovak regions within designing smart specialization and cluster strategies to assist regional stakeholders in developing new, globally competitive advantages in emerging industries through clusters, and in this way to enhance the role of cluster policy for the rejuvenation of Slovak clustering activities as part of the Slovak regional development strategy policy agenda.

As conclusion we can say that technological advance, knowledge based production, innovation implemented into new technologies are the outputs of effective synergy how the Slovak cluster policy can be involved in Slovak regional development process. Those are the tools leading to increasing economic growth, sustainable social and economic development and higher quality of life of inhabitants living in Slovak regions and the whole country within the EU area.

## CONCLUSION

Generally speaking, national and regional government on a global scale recognize the potential of clusters as the driving force behind regional development. It has been argued that public sector can improve cluster development through specific activities, thereby strengthening local economies, creating new jobs and attracting new investors. That is why the number of cluster initiatives has grown in recent years. Some countries include cluster policy in national development programs, others apply regional development models. The European Commission has a number of R&D programs to boost innovation. These processes must be linked to the business environment. Policies at European, national or regional level should be mutually supportive and strengthened in order to influence competitiveness, innovation and performance in Europe. Although clusters are primarily national and regional phenomena, the European Union is committed to contributing to their successful founding, development and mutual co-operation.

*The objective of this scientific monograph was to figure out on the basis of EU and Slovak cluster and regional policies environment analysis in Slovakia in what way the cluster policies being implemented in Slovak regional development have enhanced the competitiveness and social and economic development of Slovak regions. To put it in other words, the question has been set if clusters might be implemented into regional development strategies as tools helping to overcome regional discrepancies to assure social and economic development of a national economy.*

By and large, *cluster* can be considered as a free, geographically limited organization of similar and interconnected, related enterprises that are jointly capable of achieving synergies. Cluster, as geographic concentration and economic cooperation, contributes to the competitiveness of businesses in a particular region, hence creating regional competitiveness that contributes to the overall competitiveness of the economy. Cluster business is a tool in a globalized and strongly competitive environment to strengthen and maintain the specific competitive advantage of interconnected companies resulting from their geographical cooperation. Notwithstanding this potential, it should be stressed that

creating a national or regional innovation environment and building networks of major players in innovative development helps not only the business and the region, but also boosts the overall competitiveness of the economy. As highlighted in the monograph, cluster initiatives appear to be a particularly advanced form of cooperation between businesses and other entities being created from business chains, corporate networks and industrial clusters. Cluster initiatives represent an organized form of efficient use of cluster companies, governments, research communities, universities, but also public sector as a tool how to enhance the competitiveness of a region. We find out that clusters are among the most important instruments of regional policy, as they stimulate economic growth, affect employment in region, act on the influx of foreign investment, disseminate innovation, increase the competitiveness of companies operating in regions. In particular, industrial clusters are important for the implementation of regional innovation policy, as their main activity is to create innovation, enhance the innovation performance of regions and to commercialize innovation. The presence of clusters in the region thus affects the economic performance of regions in the form of regional gross domestic product growth, regional gross output and added value, hence ensuring the social development of regions through growth in employment, income, consumption and standard of living.

On reflection, we have to bear in mind that *cluster policy* must primarily be tailored to the particularities of the region, its businesses and its institutions. While there is no guaranteed recipe, a few basic rules how to govern this policy have been discussed by author in this monograph. In particular, it should be built on the region's strengths, such as competencies and networks of relationships that have developed over many years, and on foreseeable future technologies such as services within manufacturing, information technology and biotechnology. Cluster policy should therefore be grounded on the existing strengths of local culture and already implemented technologies. Also important are issues such as the diversification of network structures, and last but not least, new network intermediaries profiling. To achieve a successful cluster policy, institutions that connect different partners from the economic sphere, science, politics and the public are essential. Such "knowledge bridges" are crucial for every economic region. However,

such an institution may "age" with its network. Policy often responds to this by creating a new institution, which can lead to wild growth. It is better to initiate the reform of an existing institution, through public-private mixed funding, pointing out to the fact that cluster policy puts high demands on policy and governance. Detailed knowledge of regional economic and institutional structures are the must. However, this implies that policy and administration are actively involved in regional networks. Thus, a knowledge-based economy could also be supported by a rationally driven knowledge-based policy.

In this monograph there has been sketched out a comprehensive, coherent and systematic overview of the basic principles and objectives forming the backbone of the *EU cluster policy* and the nature of its operation mechanism along with the Strategy 2020. At the EU level, clusters activities have been pretty much institutionalized making the system be firm, steady and effectively productive. European Union recognizes the importance of clusters and prospects for economic development and that due to the support of clusters is the subject of very intense debate within European authorities. European Union also supports the exchange of information, developing strategies processing and expert analysis through support associations and initiatives that focus on the development of clusters. It has been observed that EU does not have any consistent so called Common Cluster policy. Perhaps it is a good idea, because there is no need to tight and limit the activities of clusters operating in very divers environment. Good system of cluster initiatives sponsored by European authorities with collaboration of private sector creates an effective set of tools offering enough options to promote economic growth in industry sectors, regional development and innovation activities. The coordinated EU Cluster policy is supposed to provides a platform bringing together regional, national and European actors, with the objective to define and implement a European cluster policy agenda. The role of the Commission in this process is mainly to facilitate all forms of cooperation that could lead to a bigger number of competitive clusters in Europe.

It has been observed in the study that in *Slovakia*, however, particular cluster concept, strategy or policy is missing as well as the "bottom-up" cluster initiatives do not have adequate legislative adaptation, which



ultimately causes problems in the operation and development of clusters in Slovakia. In the last decade the effective components of regional development in Slovak Republic have become not only foreign investment and structural funds, but also business incubators, industrial parks and clusters. Recently the number of cluster initiatives has significantly increased in different regions however, their real performance is limited. The reason is the lack of a holistic cluster policy or conception, which is, as shown by the experience of developed economies, an important condition for proper operation of cluster.

Upon discussing the issue of this monograph, we have arrived to the conclusion that *Slovak cluster policy* concept is a new approach to addressing the economic development challenges of both regions and the whole country. For this reason, legislative documents as the key features of cluster policy where the support and operating form of clusters in particular area (municipality, region, state, association or group of different countries), support programs and the role of public administration as a facilitator or mediator among potential cluster members should be modified. Yet Slovak cluster policy cannot be seen as a developed one. It still can be found in its initial phase with several problems. However, the situation can be improved through better assistance organization lasting several years to come. Generally, Slovak cluster activities are limited and focused mainly on the promotion of cross-sector partnerships among businesses, the staff skills and qualification levels upgrading by means of experience exchange in the area of new technologies, processes and services usage. At present times we can see the limited number of options to be involved in projects, missing legislation in terms of clusters enhancement, and the fact that the proposed project calls are not aimed at cluster. Those are the pitfalls that clusters have to deal with in order to be successful.

The results having been reached in our monograph show that among *regions in Slovak Republic* in terms of innovation performance there is an important (significant) difference what makes an impact on regional differences in their social and economic development. The solution to this problem we see in the goal-oriented (targeted) state *innovation policy* within clustering processes and effective participations of all relevant actors in innovation activities, in particular private sector, especially in terms of financing. The success of innovation policy is reflected

in competitiveness growth and overall economic performance. More and more increasingly important role of regions in economic development of national economies is one of the accompanying effects of expanding globalization. Increasing regional competitiveness is based on the ability to execute innovation policy objectives in the context of national or regional innovation system. National innovation policies that are closely linked to regional innovation policy, and are based on EU innovation policy are supposed to increase competitiveness of regions by means of their innovation performance enhancement. European Union Innovation policy supporting also clustering activities appears to be an important instrument how to enhance the economic performance because it affects structural policies and structural reforms.

Upon the executed analyses and by summarizing all the issues the monograph has been dealing with, it can be concluded that there are many options of possible ways how innovation can be funded in regions of Slovakia, the efficiency assessment of resources being used for innovation activities and to explore the impact of regional innovation performance on *regional competitiveness*. There have been observed proved parallels between national economy and businesses, because if company is not successful on market the company must leave it and in extreme it starts closing down its business, but region cannot do this. In addition to this if region or country is successful, better conditions for development of other regions or countries are to be created highlighting the our observed finding that successful regions are creating a successful national economy. All stated above is just proving that regional competitiveness is to be understood as the ability of regions to produce goods and services which are ahead of competition on international markets, while at the same time they keep a high and sustainable level of income for population in region.

Finally, to put it in a nutshell, for cluster policy implementation and its enforcement, it is important to realize that policy interventions can play a significant role in supporting the clusters but should be limited to clusters with high and innovative potential. There are very important synergies coming out of the EU and Slovak cluster and regional policies symbiosis resulting in the cluster activities processes within the Slovak regions, where clusters could be acting as one of the main regional

competitiveness enhancement tools. It is necessary to take into account the fact that the competitiveness and innovation are also affected by other factors being contained in the pillars of competitiveness. It can be implied that the Slovak economy is built on the basis of production factors and not pulled by innovation so far. That is why clusters scattered around Slovak regions might be the right shifts for innovation to be emerged in Slovak regional environment.

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## **LIST OF ABBREVIATIONS**

CAP - Common Agricultural Policy

CI - cluster initiatives

CIP - Competitiveness and Innovation Framework Program

CSR – corporate social responsibility

DG REGIO - Directorate-General for Regional Development

DG RELEX - Directorate-General for External Relations

EAFRD - European Agricultural Fund for Rural Development

EC - European Commission

ECA - European Cluster Alliance

ECEI - European Cluster Excellence Initiative

ECEI - European Cluster Excellence Initiative

ECO - European Cluster Observatory

ECPG - European Cluster Policy Group)

EFQM - European Foundation for Quality Management

ENRF - European Maritime and Fisheries Fund

EP - European Parliament

ERDF - European Regional Development Fund

ESCA - European Secretariat for Cluster Analysis

ESF - European Social Fund

EU - European Union

HTU - higher territorial units

ICF - Intelligent Community Forum

ICT - information and communications technologies

NSRF - National Strategic Reference Framework

NUTS - Nomenclature of Territorial Units of Statistics

PA - Priority axis

R & D – research and development

REGI - Committee on Regional Development

ROP - Regional Operational Program

SARIO - Slovak Agency for Trade and Investments development

SBA - Slovak Business Agency

SIEA - Slovak Innovation and Energetic Agency

TQM - Total Quality Management

USC - Union of Slovak Clusters

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**EU and Slovak Cluster Policies Interactions within the Regional Development Enhancement (Perspectives, Challenges, Issues)**

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