



BACHELOR THESIS

Creating the EU's Knowledge-based Economy in East Europe

A Comparison of the Europe 2020 Strategy and the EU Strategy for the Danube Region

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Public Governance across Borders

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List of Abbreviations

EU	European Union
EUSDR	European Union Strategy for the Danube Region
GDP	Gross Domestic Product
ICT	Information and Communication Technologies
R&D	Research and Development

Abstract

This Bachelor thesis investigates the creation of the knowledge-based economy by the EU and the EUSDR. The knowledge-based economy has a high share of tertiary sector industries and relies on a high level of education. The EU has adopted and pushed the realisation of the concept since the early 2000s. However, the EU's East European Member States seem to struggle with the economic and educational requirements demanded by the knowledge-based economy. The thesis explains the components of the knowledge-based economy and analyses how they are applied in the current Europe 2020 Strategy and the EUSDR Action Plans. By doing so, the thesis compares the policy goals on the knowledge-based economy at the supranational EU level and the East European regional EUSDR level. Thus, the thesis comprises explanatory and logical, but also evaluative elements. It adds understanding to the implementation of the knowledge-based economy in East Europe and the incentives and challenges the EUSDR faces in the process. The thesis finds the EUSDR trying to complement the Europe 2020 Strategy and its policy goals referring to the knowledge-based economy. However, differences are found in the implementation strategies, where the EUSDR is focussed on its specific challenges, like reducing unemployment, rural area development, and generating general attractiveness.

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1. Introduction

In 2000, the EU Member States and policymakers were discussing future models of the EU economy. The motor of this discussion was the increasing economic power of some of the EU's economic competitors. Eventually, the EU's strategy makers decided to implement the concept of the so-called knowledge-based economy in the Lisbon Strategy to strengthen the future EU economy (Lisbon European Council, 2000). This concept describes the shift away from an economy relying on typical heavy industries towards a post-industrial economy focussed on services (Bell, 1973). In modern economies, the economy is based on a high level of educational and academic potential. With knowledge as its most important resource, this kind of economy can create and realise its inventions (Sporer, 2004). A synergic triangle of education, research, and innovation should be set, creating a dynamic educational system (Jabłoński/Jabłoński/Fedirko, 2018). By harvesting the innovations and outcomes of the educational and academic sphere, the EU would ensure its economic well-being in the future (European Portal of Integration and Development). The concept was adopted in EU educational policies ever since. The latest adoption is the Europe 2020 Strategy setting benchmarks on what the Union should achieve between 2010 and 2020. This strategy also refers to the creation of the knowledge-based economy by educational goals and policies (European Commission, 2010 I).

But the great disparity in economic and education levels across Europe, especially between East and West Europe (Ionescu, 2018), is impeding the achievement of the new economic concept. In consequence of the fall of the Iron Curtain in 1989/1990, the East European states came out of a great transition from socialist, mostly authoritarian states to capitalistic democratic systems (Nikolic, 1996). Since the extension of the EU in 2004, the nine new East European Member States have been struggling to compete with the other EU Member States in terms of economic and social development. Three other ex-socialist states with similar issues entered the Union in the following years: Croatia in 2007 and Bulgaria and Romania in 2013. While in other European regions' economies the share of industries decreased in favour of growing third sector markets, East EU Member States' share of industry as an essential part of the GDP stagnated. Industries emigrate from core economic centres of the EU to its peripheral Member States or Asia. The East European states' GDP shares of the industry are above the EU average (European Committee of the Regions,

2017). Additionally, East European educational systems underperformed compared to other European regions, as it can be seen in the insufficient spending on education and small numbers of universities (Voronina, 2019). The share of people with a tertiary education background in East Europe ranges from 20% to 30%, except for a few urban regions, whereas the European average is 40% (Eurostat, 2019).

To enable European regions with similar challenges to cooperate more closely, the EU created the possibility for states to develop macro-regional strategies. The Member States of such strategies can set political goals and policies adjusted to their regional challenges (European Commission, 2010 I). One of those four strategies is the EU Strategy for the Danube Region, located in mainly East Europe. The region includes states and regions at the river Danube: the EU Member States Austria, Bulgaria, Croatia, Czech Republic, Germany, Hungary, Romania, Slovakia, Slovenia; as well as the non-EU states Bosnia and Herzegovina, Montenegro, Serbia, Moldova and Ukraine. The strategy tackles different policy areas and especially emphasises the importance of creating a higher education standard under the Europe 2020 strategy. By doing so, the region should be able to compete with the rest of Europe more equally (EUSDR, 2016). Improving education performance is also one of the goals of the Europe 2020 Strategy (Soriano & Mulatero, 2010).

1.1 Problem Statement

The knowledge-based economy was planned to be the future model for the EU economy and market (Lisbon European Council, 2000) before the East extension took place. From there on, the knowledge-based economy is applied for the EU with a growing number of East European Member States. On the EU level, the knowledge-based economy was last implemented in the form of the Europe 2020 Strategy. The strategy's program laid out a system of policies supporting the development of higher education and other policies referring to the establishment of the Europe-wide new economy concept (European Commission, 2010 II). But, as described above, the East European Member States' economic and education performances are below the EU average (Eurostat, 2019). Therefore, they do not meet the high levels of education and the emerging service sector required by a knowledge-based economy (Sporer, 2004). The EU Member States in question may face challenges with these requirements as the quality of education is lower than in the rest of Europe. At the same time, higher education is a basic requirement of the knowledge-based economy that is reliant on innovations and inventions. Thus, a problem arises: the EU's goal to implement the

economy model of the knowledge-based economy seems to clash with the current situation in the Eastern Member States. This thesis investigates the incentives and challenges the East EU Member States face when planning the adaption of knowledge-based economies. As the frame of reference in the East European region, the macro-regional EUSDR is used in the analysis of this thesis. The EUSDR Member States are located around the river Danube, therefore, they represent the East European region.

This thesis is interested in the transmission of the knowledge-based economy concept into the EU level and the regional East European EUSDR level. By comparing the approaches taken on the EU and regional level, the thesis shows the differences and similarities of the EU and EUSDR policy framework for the knowledge-based economy. Hereby, it discusses how the EUSDR promotes the knowledge-based economy as it is supported by the Europe 2020 Strategy. Furthermore, it discusses how attractive the knowledge-based economy is to the EUSDR policy framework. By analysing the latest EUSDR Action Plan from 2020 and comparing to the 2010 EUSDR Action Plan, the thesis analyses the trend of the EUSDR embracing the knowledge-based economy or not.

1.2 Research Question and Sub-Questions

The focus of this thesis is on the policy strategies by the EU and EUSDR referring to the knowledge-based economy. For the EU, the thesis analyses the Europe 2020 Strategy, and for the EUSDR, the two EUSDR Action Plans are analysed. Thereby, the different approaches on the EU and regional level can be compared. Consequently, the main research question of this thesis is:

To what extent are the Europe 2020 Strategy objectives on the establishment of the knowledge-based economy met by the EU Strategy for the Danube Region?

The main research question is of a comparative and evaluative character. Its open-ended wording demands a discussion of the outcomes achieved in the foregoing chapters. In comparison, the scope of the Europe 2020 Strategy policies regarding the knowledge-based economy is finally compared to the policies establishing the knowledge-based economy by the EUSDR. The comparison includes an analysis of the coherence between the Europe 2020 Strategy's and EUSDR Action Plan's policy goals referring to the establishment of the knowledge-based economy. Additionally, a short evaluation of their practical performance is given. Thereby, it is a comparative question interested in studying the policy framework of the knowledge-based economy

compared on a transnational and regional level. To elaborate on all aspects of the research question, sub-questions will be used. The outcomes of these sub-questions will be used to accomplish a final discussion of the main research question. The first basic approach to answer the main research question is a description of the knowledge-based economy concept. This includes a description of its characteristics, its emergence in the EU context and its further translation into the EU strategies. Therefore, the first explanatory sub-question is:

Q1: What are the characteristics of the knowledge-based economy and how did the knowledge-based economy emerge in the EU context?

This sub-question will be answered by formulating a conceptualisation of the knowledge-based economy. The existing academic literature on the knowledge-based economy will help to define the concept as such. Besides, the first emergence and incorporation of the concept as a future EU economic model will be described until its latest adaption in the Europe 2020 Strategy.

In the next step, the latest adaptation of the concept of the knowledge-based economy in the form of the Europe 2020 Strategy is elaborated. Also, the other strategy of interest, the EUSDR, is described and analysed as such. The outcome of the *Q1* will be used to find what policies can be found in the pre-mentioned strategies referring to the establishment of the knowledge-based economy:

Q2: How does the Europe 2020 Strategy establish the knowledge-based economy?

Q3: How does the EUSDR establish the knowledge-based economy?

These two empiric research questions examine how the strategies seek the establishment of the knowledge-based economy. The inner coherence of the basic strategy papers of the Europe 2020 Strategy and the EUSDR will be described and analysed using a content analysis scheme. The analysis will follow the structure suggested by Flick (2016): First, the material will be chosen, and its context must be described, what is accomplished in the beginnings of chapter three and four. Secondly, the focus of the analysis must be defined (Flick, 2016), which this thesis accomplishes by conceptualising the knowledge-based economy in chapter two. Next, the material is paraphrased, and the content is reduced to what is of interest (Flick, 2016). All policies referring to the knowledge-based economy will be identified and noted in tables. In the final step, similar content is bundled in single paraphrases and connected to the point of interests again (Flick, 2016), meaning the knowledge-based economy

in this thesis. The outcomes of the analysis will be used to give an overview of how, e.g. by what policies and financialization practise, the strategies strike for the establishment of the knowledge-based economy. These outcomes are essential to accomplish the comparison of the two strategies. The qualitative analysis scheme is preferred because it allows the analysis of the content of the EUSDR and Europe 2020 Strategy referring to the knowledge-based economy. A quantitative approach would only obtain the frequency of keywords connected to the knowledge-based economy, which would not enable a detailed discussion of the main research question. However, qualitative content analyses tend to oversimplify their material in terms of paraphrasing it (Flick, 2016). To ensure the validity of this thesis, the analysis will be made as close as possible to the material to guarantee the inclusion of details.

It is of interest how the EUSDR performed in the implementation of its goal to establish the knowledge-based economy. Hereby, the incentives and challenges in the implementation process will be evaluated:

Q4: What incentives and challenges are the EUSDR facing in the realisation of the policy goals referring to the establishment of the knowledge-based economy?

A response will be given by analysing evaluative reports on the EUSDR and taking into account critical literature towards macro-regional strategies and the knowledge-based economy. Identifying the incentives and challenges of the EUSDR and the knowledge-based economy will complement the discussion with a critical view of the research objects.

1.3 Relevance of Research

As the Europe 2020 Strategy comes to an end in 2020, future goals and policies on a new strategy for the next period are discussed and formulated. By evaluating and critically reflecting the Europe 2020 Strategy policies, the future program for the upcoming EU policy cycle can be improved. The same applies to the further development of the EU wide knowledge-based economy requiring the identification of options to improve the concept. Additionally, the frame of reference, the EUSDR and its Member States allows insight on the specific regional challenges the implementation of the knowledge-based economy has in East Europe. The identification and discussion of such regional challenges can enable EU policymakers to adopt the EU's support to the needs of the EUSDR. Also, the EUSDR as a legal

institution could include the outcome provided by this thesis to create future action plans adapted to the region's challenges.

Academic research has been done on the EU's attempt to create a knowledge-based economy on an overarching EU level (Archibugi & Coco, 2005; Komljenović & Miklavič, 2013; Soriano & Mulatero, 2010) and on the policy requirements the knowledge-based economy needs to develop (Sundać & Krmpotić, 2011; Jabłoński et. al., 2018). However, only little research has been accomplished that concentrates on the knowledge-based economy in East Europe on a regional level (Sporer, 2004). This thesis will give a more detailed insight into the incentives and challenges the East European EUSDR faces when realising the concept. The thesis' comparison of the Europe 2020 Strategy and EUSDR will show existing similarities and differences between the EU and the East European regional level policies referring to the knowledge-based economy. This aspect of the research adds to the knowledge of the transformation of EU policies to its regional levels in East Europe.

2. Knowledge-based Economy

As the central aspect of this thesis, the knowledge-based economy is defined and conceptualised in this chapter. Using existing literature and research, the academic origins and facets of the knowledge-based economy will be described. The conceptualisation is essential to the analysis of the thesis, as it defines what characteristics refer to the knowledge-based economy. Researchers have also recommended what policy strategies are necessary to implement the concept successfully (Jabłoński et. al., 2018; Soriano & Mulatero, 2010). Hereby, this chapter gives an overview of the implementation challenges of the knowledge-based economy to understand what its realisation demands from the policymakers.

2.1 Conceptualisation of the Knowledge-based Economy

The knowledge-based economy is based on the idea of post-industrialism. Touraine (1972) differentiates the rise of industrialism in three eras: pre-industrialism, industrialism, and post-industrialism. Every era is characterised by different technologies and production ways. Post-industrialism is the current and future system of the most industrialised regions and countries on earth, including the USA, Japan, and Western Europe (Bell, 1973). In this system, capitalism is still dominant, but

knowledge is increasingly replacing monetary capital as the driving force of growth (Touraine, 1972). This implies that the creation of knowledge, for example in forms of technological innovations, becomes the essential goal societies are striving for. Primary sector branches like agrarian and fishery that once dominated the pre-industrial era are of no importance to the post-industrial economy (Bell, 1973). Also, the share of the secondary sector of the manufacturing industries and their job market decreases. Instead, the third service sector experiences immense growth (Bell, 1973). In the EU, the economic composition of some regions evolved such small shares of primary and secondary sectors and high shares of tertiary sectors (Eurostat, 2019). However, most of these regions can be found in Central and West Europe, whereas economies in East Europe and some regions of South Europe still depend on the primary sector (Archibugi & Coco, 2005; Eurostat, 2019). The development of post-industrial economies is and will be changing societies, including their value systems, politics, and culture (Touraine, 1972). Even though Touraine and Bell did not use the term knowledge-based economy, they created its conceptual framework (Sporer 2004).

According to Sporer (2004), two main forces drive the current development of the knowledge-based economy: globalisation and the development of new Information and Communication Technologies (ICTs). Globalisation merges the once separated national economies in one global market. Consequently, the competition between all actors increases and new global monopolies are emerging. New ICTs strengthen the globalisation process as they facilitate global communication, including the transfer of information and knowledge. The broadening access to ICTs enables institutions and individuals to participate in the globalisation process. As ICT became such an important economic factor, its further expansion was of high interest, and actors began to compete for the profit ICTs created. Therefore, ICT producing tertiary industries grew worldwide, adding to the emergence of the knowledge-based economy.

Concomitant to globalisation and new ICTs, human capital became more important than physical capital. Meaning, the workers' experiences and qualifications became more important than their pure labour-power or the economies' natural resources. The increasing importance of human capital to the economies changed their composition to a higher share of the tertiary sector (Bell, 1973). Services generated entrepreneurial attractiveness as they evolved a higher chance of monetary returns (Jabłoński et. al., 2018). This development can be observed in Europe, where a steady

decrease of the industrial sector is accompanied by a growing tertiary sector (European Committee of the Regions, 2017). The same development can also be observed in other states like Japan and the USA (Archibugi & Coco, 2005).

For the worker, the ongoing development means a persistent adaption to the economic changes. In practice, this demands participation in vocational training programs, improving their communication and social skills and being familiar with the newest ICT. Simultaneously, structures in the public and private sector were created to ensure the workers training (Sporer 2004). A synergic model of three main institutional sectors emerged, the “Triple Helix of Innovation” (Etzkowitz & Leydesdorff, 1998, p. 1): Private institutions, e.g. companies and corporations, universities, and governmental institutions are enforcing the expansion of education to ensure the economic well-being. Thereby, the cooperation and integration of all actors are growing (Maassen & Stensaker 2010), and their distinction becomes vague. In general, multilevel cooperation of various actors will increasingly replace the national institutions and their control of educational programs and systems, including the EU since the Lisbon Strategy of 2000 (Etzkowitz & Leydesdorff, 1998). Knowledge as a basis both for the economy and job market is accompanied by the creation of new educational institutions and more dynamic interaction of once separated actors.

Another model that was developed to set up the knowledge-based economy is the “Knowledge-Triangle” (Jabłoński et. al., 2018; Maassen & Stensaker, 2010). According to this concept, the creation and economic exploitation of knowledge rely on three components: research, education, and innovation. Soriano and Mulatero (2010) argue that these components do not only have a positive effect on the economy but complement each other. For example, the outcome of the research can be reused in other Research and Development (R&D) projects, though it can also improve education and innovation by expanding knowledge. In the same way, better education outcomes and innovations can be used for further research. Therefore, the three components must be supported equally by policies to profit from this synergic effect efficiently (Soriano & Mulatero, 2010).

2.2 Challenges in the Implementation Process of the Knowledge-based Economy

The implementation of the knowledge-based economy has generated challenges to the concept itself and its policy strategies. Research has shown that the

development is concentrated in metropolitan areas due to the advanced academic development of these regions (Vence-Deza & Gonzáles-López, 2008). Also, economic branches connected to the knowledge-based economy, such as the service sector, can be found with a higher density in urban areas (Soriano & Mulatero, 2010). In their research, Sundać and Krmpotić (2011) found “that knowledge economy factors differ between countries according to their levels of socio-economic development and, therefore, it can be argued that there is no single scenario for building a knowledge-based economy” (p. 109).

According to Archibugi and Coco (2005), the different stages of knowledge-based economy development is even more reinforced by uneven standards of technological development. A higher technological standard, especially the development of ICT, shows a positive correlation with higher investments in education and research. However, the EU’s disparity in technological development remains broad, which impedes the equality of requirements for the knowledge-based economy.

Also, the EU Member States developed various advanced policy systems for the enforcement of the knowledge-based economy, even though this was not demanded nor coordinated on an EU-level (Soriano & Mulatero, 2010). Especially Northern European states like Denmark adapted to the model of knowledge-triangle systems and included it in their educational strategies while other states did not (Maassen & Stensaker, 2010).

Summarised, the EU’s composition of states with diverse economic, educational, and technological development impedes the EU’s effort to implement the knowledge-based economy. Furthermore, the continuous development in the states makes it difficult to find a fitting strategy for all Member States (Sundać & Krmpotić, 2011). Furthermore, within the states, the requirements and policy frameworks fitting the knowledge-based economy are uneven in different regions (Maassen & Stensaker, 2010; Vence-Deza & Gonzáles-López, 2008).

2.3 Emergence of the Knowledge-based Economy in the EU

Context

In 2000, a new economic model for the EU adapted to the challenges of its times was discussed. To facilitate the process, the Lisbon European Council was

created defining the EU's future economic strategy (Lisbon European Council, 2000). Since the mid-1990s, Europe experienced an economic regression, while other new global players like China and South Korea grew (Švarc & Dabić, 2017). The Lisbon Strategy was supposed to make the EU able to compete in this globalised market, and the knowledge-based economy was discussed as a possible solution. The Council declared that the deepened globalisation and the trend towards an EU-wide “knowledge-driven economy” (Lisbon European Council, 2000) should be responded to by an ordered conversion of the EU's economic strategy. By the end of 2010, the EU's economy should be transformed into a knowledge-based economy. Noticeably, a central instrument to do so would be the equal support of research, education and innovation and the strengthening of their interconnection (Soriano & Mulatero, 2010). This refers to the aforementioned “Knowledge Triangle concept” (Maassen & Stensaker, 2010), and shows that academic models are integrated into the EU's policy strategies on the knowledge-based economy. However, the Lisbon strategy's policy program showed insufficiency in pushing the synergy of the three components, especially in education (Soriano & Mulatero, 2010). Besides, the Council demanded the creation of a European welfare system, the strengthening of the coordination and coherence of EU policies and an update of the EU's security policies. (Lisbon European Council, 2000). These broadly formulated goals were reformulated and set in more specific policy programs in 2005 for the 2007-2013 cycle. But the global economic crisis in 2007/2008 shifted the focus towards structural funds and recovery strategies (European Committee of the Regions), impeding the success of the Lisbon Strategy. By 2010, the Lisbon Strategy did not achieve its overarching goal “to become the most competitive and dynamic knowledge-based economy in the world” (Lisbon European Council, 2000), and failed most of its other goals (Walburn, 2010).

This chapter has shown the characteristics of the knowledge-based economy and the challenges that it causes. The knowledge-based economy was introduced to the EU policy framework to ensure the EU's future economic well-being, but its first adaption in the Lisbon Strategy was not successful (Walburn, 2010). For the following 2013-2020 cycle, the Europe 2020 Strategy was developed and implemented (European Committee of the Regions). As a detailed understanding of the emergence and content of this strategy is needed to answer the research question, a closer analysis of the Europe 2020 Strategy is given in the next chapter.

3. Europe 2020 Strategy

As the Lisbon Strategy came to an unsuccessful end in 2010, a new strategy was discussed by the European Commission facing the new developments and challenges of its times, especially the financial crisis of 2007/2008 (Sørensen/Bloch/Young, 2016; Walburn, 2010). The crisis had shown how much the Member States' economies are intertwined and that a functioning response to the crisis could only be found collectively (European Commission, 2010 II). Thus, the Europe 2020 Strategy was created to establish a stronger European social market economy. Furthermore, it adapted parts of the Lisbon Strategy, including the focus on knowledge and education as the drivers for the EU's economic well-being (Bonhardt & Torres, 2010). Therefore, the Europe 2020 Strategy is deemed a good fit to investigate the EU's way to establish a knowledge-based economy.

This chapter gives an overview of the strategy's composition before a detailed analysis of the strategy regarding its policies on the knowledge-based economy is made. As described in chapter 1.2, this analysis will be based on the scheme by Flick (2016).

3.1 Structure and Goals of the Europe 2020 Strategy

The strategy is based on two main components. The first component consists of three main priorities: First is smart growth which consists of the development of an economy that is based on knowledge and innovation. Second is sustainable growth, meaning an ecological economy with less use of resources with simultaneous growing competitiveness. And last is inclusive growth, targeted on strengthening the European social cohesion and employment rate (European Commission, 2010 II).

The second part consists of five benchmarks for the year 2020 in different policy areas: increasing of the EU employment rate, investing at least 3% of the EU's GDP in R&D, achieving the set sustainability goals, sinking the share of low education and increasing the share of higher education absolvents over 40%, and reducing the risk of poverty (European Commission, 2010 II). These main components are then combined into seven "flagship initiatives", which are transformed into policy goals. The first three mentioned initiatives "Innovation Union", "Youth on the move" and "A digital agenda for Europe", add to the smart growth priority. Next are the two initiatives "Resource efficient Europe" and "An industrial policy for the globalisation era", referring to sustainable growth. And the last initiatives "An agenda for new skills

and jobs” and “European platform against poverty” both refer to inclusive growth (Bongardt & Torres, 2010). The “flagship initiatives” are then described in more detail, separated into what the European Commission will accomplish and what the Member States are asked to do (European Commission, 2010 II).

3.2 Europe 2020 Strategy Policies on the Establishment of the Knowledge-based Economy

In this chapter, a closer analysis of the Europe 2020 Strategy published by the European Commission in 2010 (European Commission, 2010 II) will be performed. To identify what policies are of interest, the conceptualisation of the knowledge-based economy in chapter 2.1 is used. At first, the Europe 2020 Strategy’s content is reduced to the policies referring to the knowledge-based economy. The found policies are paraphrased and noted in Table 1 below. Then, a second reduction is made on the outcomes of the first step of the analysis (Flick, 2016). Meaning, all policies that were found are presented again, and policies with the same content are summarised in one paraphrasis. As suggested by Flick (2016), the found objectives, here: the policies, are explained in the context of the concept of interest, here: the knowledge-based economy.

Table 1. Europe 2020 Strategy policy goals referring to the knowledge-based economy.

Priority	Flagship initiative	Policy goals referring to the knowledge-based economy	
		EU level	National level
Smart growth	<i>Innovation Union</i>	<ul style="list-style-type: none"> Facilitate multilevel cooperation in education Facilitate cross-sectoral cooperation of private and education actors Focus research on current challenges Enhance businesses to produce innovations Facilitate funding access for research Create incentive mechanisms for innovations Expand the EU's educational policies instruments 	<ul style="list-style-type: none"> Develop an innovation incentive framework, particularly for small and middle-sized companies Strengthen multilevel and private-public cooperation Focus on graduates with technological skills Include creativity, innovation, entrepreneurship in formal education Prioritise public spending on education Support private investments in R&D
	<i>Youth on the Move</i>	<ul style="list-style-type: none"> Develop student mobility programs and research cooperation by connecting them to national mobility programs and means Develop higher education institutions by benchmarking European universities on a global scale Examine the promotion of young entrepreneurship by mobility programs 	<ul style="list-style-type: none"> Secure financial investment in formal education Raise the quality of all formal education, from pre-school to tertiary education Adapt education to market demands
	<i>A Digital Agenda for Europe</i>	<ul style="list-style-type: none"> Expand the acceptance of non-formal education Develop internet infrastructure, using structural EU funds Develop an integrated EU market for internet services Increase research and innovations in the ICT sector 	<ul style="list-style-type: none"> Increase public funding of internet infrastructures Enhance the usage of online services
Sustainable growth	<i>Resource efficient Europe</i>		<ul style="list-style-type: none"> Upgrade ICT infrastructure
	<i>An industrial policy for the globalisation era</i>		<ul style="list-style-type: none"> Promote the usage of ICTs to find solutions for environmental issues Create an incentive system for innovations by the public sector

**Inclusive
growth**

*An Agenda for
new skills and
jobs*

*European
Platform against
Poverty*

- Enhance workers to life-long learning
- Promote vocational education and training
- Integrate private actors in the promotion of life-long and vocational education and training

- Integrate cross-sectoral actors to analyse the incentives to create innovations
- Create framework enhancing adult formal and informal education and training including private and civil society actors

Based on European Commission, 2010 II

Table 1 is based on the structure of the Europe 2020 Strategy. The first column on the left side shows the priority areas, and their complement flagship initiatives are assigned in the second column. As it is done by the Europe 2020 Strategy, the policies in Table 1 are classified into the EU and national level.

A returning aspect in the strategy is the emphasis on multilevel coordination between local, regional, national and the EU level, as well as the cross-sectional cooperation. The latter means the inclusion of non-public actors from the private sphere, the civil society, and the academic world represented by universities. Integrating various actors from different levels is an essential element of the Triple Helix of Innovation¹. This policy concept can be found in various policy goals, for example in the inclusion of private and civil society actors to enhance vocational training, private investments in the R&D, or the integration of entrepreneurship in formal education.

Also included and noticeable in various policy goals is the knowledge-triangle, consisting of education, research, and innovation (Jabłoński et. al., 2018). According to the Europe 2020 Strategy, European formal education by the state should be further developed, including the integration of multilevel and cross-sectional actors. The financing of formal education should be ensured by public funds and its financial security of prior political interest. Overall, the quality of formal education should be improved, with a specific focus on technological and the entrepreneurial education of pupils. To expand the possibilities of training and learning, the acceptance of informal education, meaning non-mandatory education like vocational training seminars, should be advanced. In higher education, universities' performances should be monitored by the EU and compared on a global scale, increasing the competition and consequently their level of performance. Additionally, the numbers of graduates in technological higher education branches should be raised. Research is also included in the strategy's goals, still seeking to raise the EU's GDP share in R&D to 3% (European Commission, 2010 II). Furthermore, the access to research funding should be facilitated and private investments in research should be expanded. The strategy also suggests combining research goals with economic interests, so that research is adding to the development of the European economy. The third component of the knowledge-

¹ The *Triple Helix of Innovation* is a policy concept designed to generate innovations by integrating the efforts of public, private, and educational institutions (Etzkowitz & Leydesdorff, 1998).

triangle, innovation, should be advanced by creating an incentive system. Member States are asked to establish public incentives for innovation, especially for small and middle-sized companies. Again, private actors should be involved in the creation of such systems. The synergy of the knowledge-triangle's components is not explicitly mentioned. Still, the whole strategy is designed in a way that its goals reinforce one another (European Commission, 2010 II). For example, the improvement of technical education at schools and universities increases the potential of innovations, necessary in the European ICT development.

Sporer (2004) identifies ICT and an evolved infrastructure for the internet as one of the main drivers of the development of the knowledge-based economy. Similarly, the European Commission in the Europe 2020 Strategy requires the EU to raise its spending for internet infrastructure funded by EU structural and cohesion funds. The Member States should also increase national public funding for those infrastructures. This should enable EU citizens to use internet services, a market branch of particular interest in the strategy. The internet service market should be developed and integrated into the EU single market. As the greatest share in the knowledge-based economy is owned by the service sector (Jabłoński et. al., 2018), the EU is referring to their establishment here. ICTs are identified by the Europe 2020 Strategy as an opportunity to tackle current challenges, explicitly environmental issues. Therefore, the EU should promote the development of ICTs. This promotion should be accomplished by creating a special ICT infrastructure that can do so. The Europe 2020 Strategy states that other economic powers like Japan and the USA have established highly evolved ICT sectors. Simultaneously, ICT development stagnated in the EU, putting the Union in danger to fall behind those other markets. This implies the importance of the second force driving the development of the knowledge-based economy: globalisation (Sporer, 2004). The EU is competing in a global market and must sustain and advance its competitiveness.

The importance of globalisation can also be seen in the creation of mobility programs. They should be designed and implemented to ensure the exchange of knowledge across Europe. Additionally, the existing research and student mobility programs should be advanced and better coordinated with national mobility agendas. Besides, the creation of mobility programs for young entrepreneurs should be examined.

The persistent adaption to the market requires the workers of the knowledge-based economy to participate in training and education programs (Sporer, 2004). The strategy acknowledges this demand and requires its Member States to ensure life-long learning opportunities, especially vocational education and training. Again, private actors, but also actors of the civil society should be included in this educational system. Informal education should complement the system as well.

Overall, the Europe 2020 Strategy shows the EU's interest in creating a synergic policy framework for its overarching goal: the establishment of the knowledge-based economy. The policies are made to complement each other and to support closer cooperation between all actors. The Europe 2020 Strategy assigns its policy goals to the national or EU level. However, most of the policy goals are not supplied with suggestions on how they could be realised. The broad design of the policy goals in the Europe 2020 Strategy is similar to the Lisbon Strategy that was not successful in achieving its goals. Now, the question arises how the EUSDR is planning to establish the knowledge-based economy to elaborate on the similarities and differences between the strategies.

4. EU Strategy for the Danube Region

The second strategy of interest referring to the knowledge-based economy is the EUSDR, an EU macro-regional strategy in mainly East and partially Central Europe. To approach the EUSDR, a description of its framework is given to expanding the understanding of macro-regional strategies. This is followed by a description of the emergence of the EUSDR. Afterwards, the overarching strategies of the EUSDR, the Action Plans of 2010 and 2020, are analysed as done in chapter 3.2 for the Europe 2020 Strategy. Those analyses will again identify how the knowledge-based economy should be realised. Contrary to the Europe 2020 Strategy, they refer to the East European regional level around the river Danube. Knowing how the realisation of the knowledge-based economy is planned on the regional Danube and the EU level enables this thesis to find similarities and differences between the EUSDR Action Plans and the Europe 2020 Strategy in the final chapter.

4.1 Framework of EU Macro-Regional Strategies

Turşie (2015) describes that different stages of socio-economic development can be found in the EU, leading to a loosely defined rich North-West and a comparably weaker South-East Europe. To address this separation, the academic idea of New Regionalism emerged. New Regionalism intends to enable the peripheral regions to develop according to their situation detached from the economic pressure of their wealthier neighbours. To enable EU Member States to profit from collaboration with each other and to embed those collaboration projects in the EU context, the EU Commission created the framework of macro-regional strategies in the late 2000s (European Commission, 2017). According to former European Commissioner for Regional Policy in 2009, Paweł Samecki, a macro-regional strategy can be formed by the EU Member States within an “area including territory from a number of different countries or regions associated with one or more common features or challenges” (Samecki, 2009, p. 1). Member States can identify those shared characteristics and issues and define an agenda on how their challenges will be solved collectively in an Action Plan (European Commission, 2017). The macro-regional strategies are part of the EU's open method of coordination, meaning they are embedded in the Union's regional and cohesion policies and competences, but not legally bound to its direct control (Gänzle, 2017). Macro-regional strategies cannot create new EU institutions nor new EU funding structures. Instead, existing national and transnational cooperation projects are used and expanded in an intergovernmental approach (Council of the European Union, 2011). As a new feature, the macro-regional strategies add an emphasis on a multilevel and cross-sectional approach to the cohesion policies of the EU. Local, regional, national and EU institutions, as well as private and civil society actors, should be included in the policy models and practise of macro-regional strategies (Sielker, 2016). Also, neighbouring states of macro-regional strategies that are not Member States of the EU can be included, if they fit the characteristics of the region (European Commission, 2017). The European Commission is the overarching political coordinator of the four macro-regional strategies, supported by High Level Groups, an advisory institution composed out of representatives of all Member States (Gänzle, 2017). To coordinate and conduct the implementation of the strategies on a national level, the members of the macro-regional strategies establish so-called National Contact Points, represented by a national minister (Turşie, 2015). The implementation process is achieved by various actors depending on the policy field (European Commission, 2010 III; Gänzle &

Mirtle, 2019), but always under the supervision of Priority Area Coordinators who follow the macro-regional strategy's Action Plan agenda (Turşie, 2015).

This framework was implemented in 2009, followed by the creation of the first macro-regional strategy, the European Union Strategy for the Baltic Sea Region, in the same year. Since then, three additional strategies were created: the EUSDR in 2011, the EU Strategy for the Adriatic and Ionian Region in 2014, and the EU Strategy for the Alpine Region in 2015 (Gänzle, 2017).

4.2 Emergence of the EUSDR

The idea of regional and transnational cooperation and integration project in the Danube region dates to the 1990s when efforts were made to pacify the region after the Yugoslavian war. To achieve closer coordination after troubled times in the region, the Danube Cooperation Process was initiated, led by Romania, Austria, the European Commission and later by the German land Baden-Württemberg (Gänzle, 2017). The institution grew to 15 Member States located around the Danube river and its basin who were discussing how a cooperation system concerning issues related to the Danube and its region could be created. These considerations were orientating on the establishment of the foregoing EU Strategy for the Baltic Sea Region (Sielker, 2016). Thereby, the idea of a macro-regional strategy adapted to the situation of the members of the Danube Cooperation Process emerged. That led to the formulation of an Action Plan, suggested to the European Commission in 2010, which accepted it in 2011 (Gänzle, 2017). Therein, the EUSDR was established, consisting of 15 Member States: eight EU Member States and 7 non-EU Member States. The primary common characteristic of those members is the Danube river, (European Commission, 2010 III), justifying the creation of a macro-regional strategy according to the definition by Samecki (Samecki, 2009). However, also common challenges can be identified, such as the challenge of East-West convergence after the fall of the Iron curtain, the before mentioned Yugoslavian war, the economic discrepancy between the long-time EU members like Germany and new members like Romania in one shared geographic area, and the regions cultural diversity (Sielker, 2016). Despite these multiple challenges, the European Commission sees the creation of a transnational framework as an opportunity to find effective responses to the presented issues (European Commission, 2010 III). However, the European Commission criticised the governments of the EUSDR Member States for their decreasing efforts to implement the macro-regional strategy. The EUSDR achieved some of its goals set in 2010 and has been especially

successful in transport and nautical policies since. It was also able to tighten its contacts with various actors and to promote the cooperation of those in the region. Besides, many aspects of the 2010 Action Plan were not realised (European Commission, 2016; European Commission, 2019).

The EUSDR's various goals can be found in its Action Plans. These Action Plans define the main challenges of the region and their affiliated EUSDR policy response (European Commission, 2010 I; European Commission, 2020). Therefore, they fit the main research question and will complement the discussion on how the EUSDR plans to create a knowledge-based economy. The first Action Plan was formulated and endorsed by the European Commission in 2010. This version of the Action Plan from 2010 was guiding the EUSDR in its first years of existence (European Commission, 2010 I). However, in the 2010 Action Plan's introduction, it is noted that this Action Plan must be adopted to the socio-economic changes it may face until a restructured strategy is necessary (European Commission, 2010 I). According to this condition, a revised version of the Action Plan was conducted since 2018. Publicised in April 2020, it still awaits acceptance by the European Commission (European Commission, 2020).

4.3 EUSDR Action Plan 2010 Policies on the Establishment of the Knowledge-based Economy

In its first Action Plan from 2010, the EUSDR defines four pillars as the base of the strategy: "Connecting the Danube Region" concerned the strengthening and expansion of the region's transport, energy and touristic infrastructure; "Protecting the Environment in the Danube Region" the environmental protection, "Building Prosperity in the Danube Region" the development of education, research, human capital, social inclusion and ICTs, and "Strengthening the Danube Region" the creation of stronger institutions and the increase of the region's security (European Commission, 2010 I). Embedded in the EU policy framework, every pillar's supplement to the Europe 2020 Strategy is described shortly (European Commission, 2010 I). Every pillar consists of multiple priority areas, focusing on a certain aspect of its' challenge. These priority areas are broken down into various actions. Actions can be supported by examples for projects, with a description of what policies which EUSDR member or partner could implement to tackle the EUSDR's challenges.

In the analysis, the Action Plan's priority areas, actions and projects were analysed and the policies referring to the knowledge-based economy were paraphrased in the column on the right side. The outcome is presented in Table 2.

Table 2. EUSDR Action Plan 2010 policy goals referring to the knowledge-based economy.

Pillars	Priority Areas	Actions	Policies goals referring to the knowledge-based economy
Connecting the Danube Region	<i>To improve mobility and multimodality</i>	“To invest in education and jobs in the Danube navigation sector”	<ul style="list-style-type: none"> ▪ Expand education and training in nautical research ▪ Integration of innovations in Danube river governance
Protecting the Environment of the Danube Region (<i>no policies found</i>)			
Building Prosperity in the Danube Region	<i>To develop the knowledge society through research, education and information technologies</i>	<p>“To cooperate in implementing the flagship initiative “Innovation Union” of the Europe 2020 Strategy” in the Danube Region countries</p> <p>“To coordinate better national, regional and EU funds to stimulate excellence in research and development, in research areas specific for the Danube Region”</p> <p>“To strengthen the capacities of research infrastructure”</p> <p>“To strengthen cooperation among universities and research facilities and to upgrade research and education outcomes by focusing on unique selling points”</p> <p>“To develop and implement strategies to improve the provisions and uptake of Information and Communication Technologies in the Danube Region”</p>	<ul style="list-style-type: none"> ▪ Fulfilling Europe 2020 Strategy goals on R&D, innovation, education ▪ Transnational cooperation in research on Europe 2020 Strategy implementation strategies ▪ Specialise innovation incentives and funding to challenges in the Danube region ▪ Develop research areas enhancing the Danube region to be more competitive in the future ▪ Create a Danube research area with shared funding by the EUSDR Member States ▪ Develop the region’s education system ▪ Improve innovation infrastructure by connecting science institutions ▪ Create international research centres, including a pilot project in Romania ▪ Create joint research programs adapted to the region’s interests ▪ Create mobility programs for students and researchers, connected to EU mobility programs ▪ Advance mobility in the across the Danube region ▪ Enable groups excluded from higher education to go to universities ▪ Integrate Danube region specifics in higher education ▪ Expand internet infrastructure ▪ Enable rural areas to access ICTs ▪ Provide internet infrastructure for education and training

To support the competitiveness of enterprises, including cluster development

“To stimulate the emergence of innovative ideas for products and services and their wide validation in the field of the Information Society, using the concept of Living Labs”

“To foster cooperation and exchange of knowledge between SMEs, academia and the public sector in areas of competence in the Danube Region”

“To improve business support to strengthen the capacities of SMEs for cooperation and trade”

“To support enterprises through high performing training and qualification schemes”

“To improve the competitiveness of rural areas and in particular of the agricultural sector”

To invest in people and skills

“To enhance performance of education systems through closer cooperation of education institutions, systems and policies”

“To foster cooperation between key stakeholders of labour market,

- Cooperation of public, private and education institutions to increase new product innovations, and adapt new products to the needs of the Danube region
- Advance intellectual property law to encourage the development of innovations
- Cross-sectional cooperation to create knowledge
- Use cooperation structures to enhance specialisation of Danube competences
- Connecting innovative services and traditional economy branches
- Promote innovation production in private companies
- Researching performance and cooperation of service businesses in the Danube region
- Integrate funding of different levels
- Cross-sectional cooperation in supporting new sustainable technologies
- Strengthen the cooperation of SMEs with public and educational institutions to increase innovations and competitiveness of the Danube region
- Develop vocational education system, aiming to reduce unemployment and increase the share of skilled workers
- Using a cross-sectional approach
- Researching the need of vocational training centres
- Enhancing the creation and use of innovations in rural areas, especially in agricultural industries
- Creating education and training infrastructure in rural areas by the exchange of good practices
- Strengthening education systems by the exchange of best practises in the region
- Integration of non-EU Member States in education programs in best-practices exchange
- Creation of transnational cooperation in education and research
- Using and expand existing structures and programs to improve education quality
- Connecting knowledge, education, and innovation
- Cross-sectional cooperation
- Advance acceptance of qualifications of different EUSDR Member States

		<p>education and research policies in order to develop learning regions and environments”</p> <p>“To support creativity and entrepreneurship”</p> <p>“To support the mobility of workers, researchers and students through implementing the European Qualification Network”</p> <p>“To jointly analyse implementation gaps in life long learning (LLL) policies and exchange best practises in implementation”</p>	<ul style="list-style-type: none"> ▪ Create a communication structure between education institutions and private actors to adapt education to the requirements of the market ▪ Develop more highly skilled workers ▪ Researching the Danube region’s job market ▪ Explore new didactic methods in all education levels, especially in rural areas and primary sector employees ▪ Transnational and regional public cooperation in education, especially with the non-EU Member States ▪ Exchange of best practises in the creation of human capital ▪ Expand the region’s education and R&D performance ▪ Life long training capacities must be expanded to create more knowledge in the region
Strengthening the Danube Region	<i>To step up institutional capacity and cooperation</i>	<p>“To combat institutional capacity and public service related problems in the Danube region”</p>	<ul style="list-style-type: none"> ▪ Integrate the EUSDR Member States’ academic research studies on the Danube

Based on European Commission, 2010 I

Table 2 shows that the pillar ‘Building Prosperity in the Danube Region’ is especially concerned with policies referring to the knowledge-based economy. In the following paragraphs, all policies found are summarised compactly and their connection to the knowledge-based economy is explained.

The Action Plan emphasises cross-sectional use of public, private, and academic actors. This cooperation is part of the Triple Helix of Innovation model, thought to facilitate the creation of innovations by including all actors (Etzkowitz & Leydesdorff, 1998). It is mostly mentioned in the Action Plan to ensure communication between the sections. By their closer cooperation, every actor should be able to adapt to the demands of other sections. For example, public formal education should be adapted to the demands of the private market. Another special cooperation found in the Action Plan is between the Member States and their regional administrations. The communication between those levels is connected to the exchange of best practices. Meaning, the variety of systems in the different Member States and regions should be used to find out what approaches in e.g. former education work best. The exchange fosters the adaption of best practices in regions of the EUSDR struggling with finding solutions to their challenges. However, the cooperation is concentrated on the Danube region. It particularly supports and promotes cooperation in the region to strengthen the involved actors.

Throughout the Action Plan, policy goals to strengthen education, research and innovation performances are mentioned. This Action Plan explicitly mentions its connection with the Europe 2020 Strategy in this matter: The Europe 2020 goals on education, R&D and innovation should be supplied by the EUSDR Action Plan. The performance of the implementation of the three goals should be reported to the European institutions. These three components create the knowledge-triangle, designed to support one another to generate knowledge (Soriano & Mulatero, 2010). As described in chapter 2.1, the existence of knowledge and its infrastructure is a requirement for the development of the knowledge-based economy (Touraine, 1972). In matters of education, the Action Plan is promoting the development of the regions educational systems. They should be designed to be more inclusive, and education on Danube specifics should be included in classes. Private actors should be more involved in education, for example, to facilitate the pupils’ entrance in the labour market. The Action Plan relies on closer cooperation of the EUSDR Member States and emphasises the chance to improve their educational performance by including the non-EU Member

States. Separately, the need to develop the educational infrastructure in the region's rural areas is emphasised. Also, the research infrastructure should be improved to be more competitive with other regions. This should be ensured by the integration of the region's research finance systems and the advancement of its student mobility programs. Additionally, international research centres should be created to increase the region's academic attractiveness. To facilitate transnational cooperation, the research systems of the different EUSDR Member States should be brought into line. The push for research on governance challenges should also be noted. For example, a research system focused on the region's job market should be created. The third component of the knowledge-triangle, innovation, is primarily integrated with actions that strive for the development of the region's economy, making it more competitive. To do so, incentives should be created for public and private actors, for example for the developing of sustainable technology innovations. Again, a special emphasis lies on the region's rural areas, where innovations should enhance the agricultural sector. Overall, all three components of the knowledge-triangle are applied to the Action Plan to the region's specific challenges. For example, research and innovations should be used to govern the Danube river more efficiently.

The high standard of ICTs is another requirement for the knowledge-based economy (Sporer, 2004). The strategy supports the development of internet infrastructure in one of its actions. Especially in rural areas, the provision of internet needs to be expanded. By doing so, online education and training should be made possible.

The service sector becomes an essential component of the knowledge-based economy (Bell, 1973). However, in comparison to the EU average, the EUSDR Member States rely more heavily on the industrial sector (European Committee of the Regions, 2017). But policies concerning the sector are rare in the Action Plan (European Commission, 2010 I). The expansion of the service sector is mentioned twice: New innovative services should supplement the traditional sectors, namely the industry. And secondly, the development of the region's service sector should be addressed in new research projects.

In the knowledge-based economy's dynamic labour market, workers and employees must adapt to the steady changes (Bell, 1973; Sporer, 2004). The Action Plan demands research about vocational education in the Danube region. In the

meantime, the capacities of vocational education and training should be advanced, also in its rural areas. This should generate more skilled workers. The acceptance of different qualification forms in the EUSDR Member States should be expanded.

These policy goals were established in the first Action Plan of the EUSDR. In the next chapter, the adapted version from 2020 is analysed to show the differences and similarities between both Action Plans.

4.4 EUSDR Action Plan 2020 Policies on the Establishment of the Knowledge-based Economy

Alongside the preparations for the new EU policy cycle beginning in 2021, the EUSDR Action Plan was rewritten. In its new Action Plan, the EUSDR acknowledges the differences between its Member States and that further cooperation is needed to strengthen the region. Also, challenges that occurred since the making of the last Action Plan are now integrated into the EUSDR's goals, namely digitalisation, migration, climate and demographic change. Additionally, this version of the Action Plan emphasises the EUSDR's embeddedness in the various other cooperations and EU projects of the region (European Commission, 2020).

As in chapter 4.3, what follows is a qualitative content analysis of the EUSDR Action Plan from 2020. The identified policy goals referring to the knowledge-based economy can be found again in the right column. The policies' connection to the components of the knowledge-based economy is explained below Table 3.

Table 3. EUSDR Action Plan 2020 policy goals referring to the knowledge-based economy.

Pillars	Priority Areas	Actions	Policy goals referring to the knowledge-based economy
Connecting the region	Culture and Tourism	Action 3	<ul style="list-style-type: none"> Develop knowledge in tourism and exchange it across sectors
Protecting the environment			(no policies found)
Building Prosperity	Knowledge Society	Action 1	<ul style="list-style-type: none"> Advance and promote innovation and research on Danube specifics and improve the innovation and research systems as such Establish a “Danube Platform” for practise exchange Support cooperation with existing academic programs Complement the EU’s “smarter Europe” goal Promote the integration of the EUSDR Member States’ academic standards in peer review and funding practices
		Action 2	<ul style="list-style-type: none"> Researching on and promote the interest of EUSDR Member States in EU R&D programs Support training of academics in managing research projects Tightening the communication of Member States’ academic institutions and National Contact Points Strengthening research and innovation incentive systems Support investment in research and innovation Promote the establishment of excellence building projects in the Danube region
		Action 3	<ul style="list-style-type: none"> Enhance cross-sectional cooperation in education in mobility programs and best practices exchange Promote transnational cooperation of academic institutions and their integration in EU projects
		Action 4	<ul style="list-style-type: none"> Promote science to pupils, focus on female pupils and interest of the public in innovations, use new media for this promotion Promote the EUSDR as an attractive location for science internationally
		Action 5	<ul style="list-style-type: none"> Develop specialisation strategies, meaning the creation of economic strategies adapted to the EUSDR Pursue transnational and EU cooperation with EUSDR in specialisation strategies
		Action 6	<ul style="list-style-type: none"> Enhance transnational and cross-sectional cooperation in science with other macro-strategic strategies and best practise exchange in meeting projects

<i>Competitiveness of Enterprises</i>	Action 1	▪ Advance usage of research outcomes in governance
	Action 2	▪ Raise cooperation of EUSDR Member States in innovation making
	Action 5	▪ Create platforms for the cross-sectional exchange of innovations
<i>People and Skills</i>	Action 1	▪ Include research on artificial intelligence in Danube region academic institutions
	Action 1	▪ Advance vocational education and training system
	Action 2	▪ Improve education in internet technology for employees
	Action 5	▪ Improve the skills of workers needed by the labour market by vocational education
		▪ Monitor the development of labour market demands and vocational education
		▪ Improve teaching in all its forms
		▪ Advance cooperation of actors in the EUSDR in education
	Action 6	▪ Improving education system performance
		▪ Include ICT in education
		▪ Establish vocational education programs specialised to the region to attract businesses
	Action 7	▪ Promote cooperation of educational institutions, especially by using the EU mobility programs
		▪ Promote acceptance of qualifications

Strengthening the region

(no policies found)

Based on European Commission, 2020

The 2020 Action Plan adopts the structure of its 2010 version, with little changes to the component's names but not their content. The four pillars and multiple priority areas remain the same, leading to a concentration of policies referring to the knowledge-based economy in the pillar "Building Prosperity" as already observed in the 2010 Action Plan. However, the number of policies referring to knowledge-based economy found is lower in this version of the Action Plan from 2020 than the 2010 Action Plan.

Aiming to incorporate the EUSDR in the region's other transnational cooperation projects, this Action Plan emphasises the importance of cooperation. There are references to cooperation with multiple actors like the EU, other programs, and states. Oftentimes, the EUSDR's cooperation with those actors should be ensured by strengthening communication. By sharing best practices, all actors should profit from their mutual communication efforts. The Action Plan also makes use of cross-sectional cooperation in its policy goals. Cooperation of private, public, and academic actors should be used to advance the region's performance in education, research, and innovation creation. This increasing cooperation to ensure the generation of knowledge is an indicator of the knowledge-based economy (Maassen & Stensaker 2010).

Education, research, and innovation are the components of the synergic knowledge-triangle, a policy model that strives to create knowledge (Jabłoński et. al., 2018). Knowledge is the main resource exploited by the knowledge-based economy, making its creation vivid to the economic well-being (Touraine, 1972). The 2020 Action Plan is eager to improve its educational performance. To do so, the didactic methods should be improved and pupils' participation in mobility programs should be encouraged. Formal education should include the teaching of ICTs skills. The attractiveness of science should be improved by promotion in the new media. The second component of the knowledge triangle is research (Soriano & Mulatero, 2010). Research is presented in the Action Plan as either an instrument to improve the EUSDR's policymaking, e.g. by creation specialisation strategies, or as important to the creation of knowledge in the region. This should be achieved by adapting research to the Danube region's specifics. Furthermore, the EUSDR aims to raise the interest of its Member States in research to ensure its financing. The Member States are also encouraged to integrate their different academic standards. The regions international attractiveness in science should be improved by the creation of excellence clusters.

Additionally, the research on Artificial Intelligence should be promoted to ensure that the region is not falling behind in developing new technologies concerning this matter. Innovation is also of interest in the Action Plan. Overall, the infrastructure supporting the creation of innovations should be enhanced. This includes the development of incentives and the advancement of funding structures. Similarly to the promotion of science in formal education, the public's interest in innovations should be encouraged by using new media channels. The creation of innovations should also be included in cross-sectional and transnational communication platforms.

The vocational education and training structure in the region should be enhanced by the EUSDR. In a knowledge-based economy, workers need to develop their skills permanently, enabling them to deal with new technologies and market changes (Sporer 2004). By connecting the vocational education and training programs to the demand of the labour market, the EUSDR wants to ensure that workers can adapt to the market changes more easily. According to the EUSDR, vocational training should also be advanced to create skilled workers who attract businesses. Especially training opportunities offering internet seminars should be expanded.

This chapter has shown how the EU macro-regional strategies are thought to enable regions to create independent ways to develop. Whereas the 2010 EUSDR Action Plan consists of multiple overlapping policy goals by various actors, the 2020 EUSDR Action Plan is designed more compactly and coherent. However, the EUSDR Action Plan from 2020 contains fewer policy fields than the 2010 EUSDR Action Plan. For example, the expansion of internet infrastructure is mentioned in the 2010 EUSDR Action Plan, but not in 2020 EUSDR Action Plan. Overall, the 2010 EUSDR Action Plan is referring more to the knowledge-based economy and the support of the Europe 2020 Strategy. In general, the 2020 EUSDR Action Plan is integrating the EUSDR with other regional strategies and programs, what is not achieved by the 2010 EUSDR Action Plan.

The outcome of the analyses of both EUSDR Action Plans will be used to discuss how the EUSDR's policy goals referring to the knowledge-based economy meet those found in the Europe 2020 Strategy in the next chapter.

5. Comparison of the EUSDR and Europe 2020 Strategy Policy Goals Referring to the Knowledge-based Economy

The separated content analyses have shown how the knowledge-based economy is planned to be realised by the EU and by the EUSDR. To answer the main research question of this thesis, a direct comparison of the Europe 2020 Strategy and the two Action Plans of the EUSDR has been conducted in this chapter. This is achieved by comparing how the Europe 2020 Strategy and the EUSDR's Action Plans refer to the characteristics of the knowledge-based economy identified in chapter 2.1. By doing so, a response can be given to what extent the Europe 2020 Strategy objectives are met by the EUSDR.

Multi-level cooperation can be found throughout all analysed strategies. Even though the 2010 EUSDR Action Plan emphasises a more independent way of implementing its policy goals, it still makes use of cooperation between the EU, national and local institutions. The 2020 EUSDR Action Plan revised the independent approach and emphasises the importance to embed the EUSDR in the framework with other programs.

Also, cross-sectional cooperation is a returning policy goal in all strategies. More specifically, the Triple Helix of Innovation is used as a policy tool to generate knowledge and push the EU's and the Danube region's ability to produce innovations. This can be observed in e.g. the promotion of advanced cooperation between private actors and educational or academic institutions. The Triple Helix of Innovation is also used to complement the knowledge-triangle. It forms the institutional framework to enhance education, research, and innovation. An example is the inclusion of private actors in education to adapt the curricula to the demands of employers. Only minor differences exist in the application of cross-sectional cooperation. For example, the Europe 2020 Strategy uses cross-sectional cooperation more broadly, while the EUSDR mostly applies it to establish communication platforms for best practice exchanges.

All components of the knowledge-triangle are used and integrated into both the Europe 2020 Strategy and the EUSDR's Action Plans. The EU and EUSDR both plan to improve the overall quality of education and the expansion of education possibilities, e.g. in the form of vocational or informal education. However, some differences exist between the Europe 2020 Strategy and the EUSDR's Action Plans.

The EU Strategy is more focussed on higher education, whereas the EUSDR's Action Plans concentrate on the Danube region's rural areas. Also, the EUSDR's Action Plans promote the inclusion of Danube specifics in the region's education. Meaning, pupils and students should learn about the region and gain knowledge about its challenges. Besides, the education policies are often set to reduce the region's unemployment rate, for example by facilitating students' entrance in the labour market. In matters of research, the overall compliance of the Europe 2020 Strategy and EUSDR's Action Plans is given. However, there are differences in the details of both strategies. In particular, the Europe 2020 Strategy and the EUSDR's Action Plans both try to facilitate access to funding for research. However, the EUSDR's Action Plans promote the integration of the research funding systems of its Member States in one compliant approach whereas the Europe 2020 Strategy does not suggest such an approach. Even though research is generally thought to benefit the economy by both strategies, the EUSDR's Action Plans are way more specific than the Europe 2020 Strategy. The EUSDR Action Plans support research to make the Danube region more competitive and raise its academic attractiveness. The latter should be achieved by establishing international research centres and excellence clusters. The 2020 Action Plan is adding Artificial Intelligence to the region's research agenda to become competitive in this field. Also, the EUSDR's Action Plans propose to integrate research outcomes in its future policymaking and governance. Thirdly, innovation is also thought to benefit the economy by both the Europe 2020 Strategy and the EUSDR's Action Plans. To increase the number of innovations, cross-sectional incentive and funding systems should be set up. Especially small and middle-sized companies are the object of this innovation agenda. Again, the EUSDR's Action Plans are emphasising the importance to increase the competitiveness of the region, contrary to the Europe 2020 Strategy. Furthermore, innovations should be created and implemented in the Danube region to tackle its specific challenges, such as, for example, in the agricultural sector. In the EUSDR's 2020 Action Plan, the promotion of innovations and science to the public and students is included. New media channels should be used to do so. Summarised, the adaption and importance of the knowledge-triangle's components are interpreted differently by the Europe 2020 Strategy and the EUSDR Action Plans. The focus of the EUSDR Action Plans is on the region's economic development, by e.g. reducing the unemployment rate with a better education system. Contrary, the Europe 2020 Strategy is more interested in improving education, research, and innovation to establish the knowledge-based economy.

ICTs and the internet infrastructure are planned to be promoted by both strategies. The Europe 2020 Strategy highlights ICTs as a chance to develop the service sector and to tackle challenges such as environmental issues. Also, the EUSDR's 2010 Action Plan plans to create stronger internet infrastructure, especially in the region's rural areas. This should enable people in these areas to participate in online education and training. However, the EUSDR Action Plan from 2020 only mentions ICTs as part of formal education. There is no mention of advancing the internet infrastructure whatsoever.

Mobility programs are emphasised by all strategies to create knowledge exchange of pupils and researchers. Especially the Europe 2020 Strategy advances the EU's mobility programs. The 2010 Action Plan is promoting the exchange in the region, and its 2020 version is more reliant on the participation of the Member States in existing programs by the EU.

To enable the workers to adapt to the market, all strategies plan to create lifelong learning and vocational education and training opportunities. Also, informal education and other education possibilities should be more accepted. The Action Plan from 2010 adds a focus on the region's rural areas and the integration of different forms of qualification in the region. According to the 2020 Action Plan, the content of vocational education should follow the development of the market. This would prepare the employees in the region for changes in the market and increase the region's attractiveness.

The Europe 2020 Strategy implicitly demands an advancement of the service sector by enhancing the ICT industry. Likewise, the EUSDR's 2010 Action Plan supports the expanding third sector by researching the service branches' situation in the region. However, the EUSDR's Action Plan from 2020 does not mention the advancement of the third sector.

The comparison shows that on the surface the EUSDR's Action Plans complement the Europe 2020 Strategy goals to establish the knowledge-based economy. However, differences can be found in the designs of the strategies. Whereas the Europe 2020 Strategy is more broadly scoped, the policy goals in the EUSDR's Action Plans are more detailed and interested in serving multiple goals.

6. Conclusion

Overall, the EUSDR's refers to the establishment of the knowledge-based economy complementary to the supranational Europe 2020 Strategy. In the Action Plans, the EUSDR explicitly supports the EU to achieve its goals (European Commission, 2010 I; European Commission, 2020). Nevertheless, the analysis of the strategies has shown that there are differences between the EU and the regional Danube level which can be found in the different approaches on how the knowledge-based economy should be realised. Regional challenges of the Danube region such as rural development, a high unemployment rate, and the general economic and academic attractiveness demand adapted policies. The EUSDR is responding to those issues and simultaneously to the creation of the knowledge-based economy demanded by the EU. Thereby, the EUSDR framework integrates the Europe 2020 Strategy and its regional approaches. This can be seen in the EUSDR 2010 Action Plan promoting the participation of students in mobility programs of the EU and the expansion of mobility in the region at the same time. Even though the differences between the Europe 2020 Strategy and the EUSDR Action Plans do not seem to be great, the consequences of different policy approaches could generate different outcomes. For example, the knowledge-triangle needs equal treatment of education, research, and innovation to be the most efficient (Soriano & Mulatero, 2010). However, the different designs of the policy goals in the Europe 2020 Strategy and the EUSDR lead to an uneven application of the knowledge-triangle. This can generate different levels of success in the realisation of the knowledge-based economy. The high social-economic and technological requirements of the knowledge-based economy complicate its realisation. The variety of factors influencing the success of the implementation do not result in a single way that guarantees success (Sundać & Krmpotić, 2011). Using the opportunities given to macro-regional strategies, the EUSDR could be a specified way to realise the knowledge-based economy. But some actors seem to impede the development of the EUSDR, especially the national institutions (European Commission, 2016; European Commission 2019). It seems as if the EUSDR continues to expand its economic and educational development by its 2020 Action Plan. Especially the policy field "Building Prosperity in the Danube Region" (European Commission, 2010 II), later called "Building Prosperity" (European Commission, 2020), is concerned with advancing the region's economy with better-skilled workers. However, a shift between the Action Plans can be observed. Contrary to the 2010 Action Plan, the 2020 version is more focussed on fewer key topics. Some policy

goals, e.g. the development of the internet infrastructure, were removed from the new Action Plan. This could be caused by the goal of the 2020 Action Plan to create a more focussed framework, and to cooperate with other programs that could oversee some of the EUSDR's original goals now (European Commission, 2020). It could also be a sign of a new approach taken by the EUSDR in the new EU cycle starting in 2021.

The Europe 2020 Strategy designed a framework for an EU-wide knowledge-based economy to ensure the growth of the EU's economy. The EUSDR Action Plans explicitly refer to this overarching goal of the Europe 2020 Strategy, still, they interpret its realisation differently. Tackling challenges of the region into account, the policies referring to the knowledge-based economy of the EUSDR's Action Plans serve multiple goals. Therefore, the EUSDR is not only interested in the establishment of the knowledge-based economy in its Member States, but its development in general. Since its formation, the EUSDR shifted its focus from complementing the Europe 2020 Strategy as in the 2010 EUSDR Action Plan towards structure supportive to the regional actors as in the EUSDR Action Plan from 2020.

Future research could investigate the further development of the EUSDR policy framework as well as in the evaluation of its performance. Also, the further adoption of the knowledge-based economy concept by the EU and the EUSDR could be the object of further research. This could be achieved by using a qualitative content analysis like it was done in this thesis. However, when analysing policy frameworks only, the practical implementation process is left out of the analysis. Also, this thesis is limited to the analysis of the policy framework with little evaluation of the implementation processes. Therefore, future research should include evaluations of the EUSDR and its policy-making to explain all facets in realising the knowledge-based economy.

7. References

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