



# Analysis of Challenges to Strengthening the Serbian dual VET System

## Report

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## Analysis of Challenges to Strengthening the Serbian dual VET System

Ursula Renold and Maria Esther Oswald-Egg

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# Analysis of Challenges to Strengthening the Serbian dual VET System

November 22nd, 2017

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## Expert biographies



**Dr. Ursula Renold** is head of the research division Education Systems, in the KOF Swiss Economic Institute, at the Swiss Federal Institute of Technology (ETH) in Zurich and co-director of the Centre on the Economics and Management of Education and Training Systems (CEMETS). In addition, she is Chairman of the University Board of the University of Applied Sciences and Arts, North-western Switzerland. She was a Visiting Fellow at the Harvard Graduate School of Education between September 2012 and March 2013.

Prior to this, Dr. Renold was Director General of the Federal Office for Professional Education and Technology (OPET) until June 2012. In this position, she headed Switzerland's competence centre for professional education, the universities of applied sciences, and led programme innovation starting in 2005. Before becoming Director General, she was head of OPET's Vocational Education and Training Division and Director of the Swiss Federal Institute of Vocational Education and Training (VET teacher education). During her career, Dr. Renold has launched numerous key initiatives that have had great impact on the Vocational and Professional Education and Training system in Switzerland.

Dr. Renold was responsible for the transition process in the wake of Switzerland's constitutional reform of 1999, in which the occupational fields of health, social work, art, agriculture, and forestry became federal competences under one ministry. She has also been involved in the constitutional reform of 2006 and in all related legal reforms in the field of higher education, vocational and professional education and training, continuing education, and the education monitoring process. She holds an honorary Professorship in Professional Education at the University of Applied Labour Studies in Mannheim (Germany).



**Maria Esther Oswald-Egg** is a researcher and doctoral student at the research division Education Systems, in the KOF Swiss Economic Institute, at the Swiss Federal Institute of Technology (ETH) in Zurich. She did her bachelor studies in Economics at the University of St. Gall, Switzerland graduating in 2010 and her master studies in Economics at the University of Zurich, Switzerland graduating in 2013. During her master studies she did an exchange semester at the University of Lausanne, Switzerland. Her dissertation area is in education economics and labour economics. Thereby, she focuses on the relation between the youth labour market and vocational education and training.

## Executive summary

This report analyses, on behalf to the Chamber of Commerce and Industry of Serbia, the Serbian education system with a special focus on its vocational education and training. It aims at enabling the Chamber of Commerce and Industry of Serbia to support the Ministry of Education, Science and Technological Development in building a strong VET system for Serbia. Therefore, we provide in-depth analysis on the strength, weaknesses, opportunities, and threats VET currently faces in Serbia.

We start out by defining what a “strong dual VET system” is, by explaining VET, strong system and dual separately. The most relevant purpose of VET in an education system is the human capital formation, i.e. provide the skills required by the labour market to establish or maintain a flourishing economy. A strong system emerges if the following five key principles are applied together:

- Education-Employment Linkage: the actors of the education system and the employment system work together throughout the entire curriculum value chain, which corresponds to the occupation-driven structuring principle.
- Good governance: clear coordination between the political levels – national, regional, and local – facilitates the implementation of a dual VET system, whereby an integrated, output-oriented approach is most suitable.
- Structure follows functions: the required functions for a VET system and the necessary processes should be defined before the structure of the institutions is set up and the allocation of the responsibilities takes place.
- System permeability: the VET system needs to be embedded in the national education system with progression routes to other educational programmes to be an attractive educational path for youngsters.
- Quality assurance: for a VET system with high quality education, national qualification standards are essential as well as coherent exams, whereby an independent third party should be responsible for the monitoring and evaluation.

Dual VET is a social construct of concept, based on the economy’s involvement in the educational programme, such as helping to develop the curricula or that part of the education and training takes place at companies. Combining these elements leads to a strong VET system, which results in efficiency, effectiveness, and equity.

Based on the previous explanations we list some key questions, which should be sorted out to end up with a vision for a dual VET system in Serbia. With this foundation and an outline of the current situation of VET in Serbia, we evaluate the draft of the Law of Dual Education from the 22<sup>nd</sup> of July 2017 in a SWOT analysis. Thereby, we highlight which functions are served by the current draft.

Since this report focuses on the evaluation of the new Law of Dual Education it has some shortcomings. There is no room for discussing and analysing the financing of a dual VET system appropriately. Closely related, we also neglect the current cost-benefit of companies in Serbia from training apprentices. That we are not able to include these topics in our report does not mean that they are of minor importance. In contrary: these topics are pivotal. However, they need more rigorous analysis and a deeper collaboration with different stakeholders.

Taking into consideration the current situation of VET in Serbia our recommendations can be summarized as follows:

- For the short-term we recommend the Ministry of Education to focus on the implementation of the new law, by supporting the newly found Commission (Art. 39). Furthermore, the Ministry should think about commissioning a cost-benefit simulation study and establish regular information campaigns.
- For the short-term we recommend the CCIS to clarify their role in the implementation of the new law and to sort out how this shall be funded. Additionally, it should offer to the Ministry of Education to have the lead in the cost-benefit simulation study, due to its close connection to the training companies.
- For the long-term we recommend that all stakeholders get together to discuss the long-term strategy for the VET system in Serbia.

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We would like to thank all those involved on behalf of the Serbian government for supporting our team and for the excellent dialogue. We especially thank the President of Serbia, **Aleksandar Vučić** for initiating collaboration with our research center, the Prime Minister **Ana Brnabić** for the fruitful discussion, the Education Minister **Mladen Šarčević**, **Gabrijela Grujić**, Dual Education Advisor to the Minister in the Ministry of Education, Science and Technological Development of the Republic of Serbia and their team for the very open and friendly dialogue.

Furthermore, we are very grateful to all donor group partners who helped us understand the context of dual VET in Serbia, especially **Ann-Kathrin Hentschel** from GIZ, **Barbara Wilfinger** from WKO Austria, **Martin Knapp** and **Oliver Herlen** from AHK; the Swiss Ambassador to Serbia **Philipp Guex** as well as **Ursula Läubli Küenzi** and **Priska Depnering-Nydegger** from SDC Serbia.



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## List of abbreviations

### General terms

CVC	Curriculum Value Chain
CNC	Computerized Numerical Control
EEL	Education Employment Linkage
EQARF	European Quality Assurance Reference Framework
ISCED	International Standard Classification of Education
KOF-YLMI	KOF Youth Labour Market Index
NVQF	National Vocational Qualification Framework
RPL	Recognition of Prior Learning
SWOT	Strengths, Weaknesses, Opportunities, Threats
VET	Vocational Education and Training
WBL	Work-Based Learning

### Institutions

ADA	Austrian Development Agency
CCIS	Chamber of Commerce and Industry of Serbia
CVEAE	Council for Vocational Education and Adult Education
ETH	Swiss Federal Institute of Technology
GIZ	German Organisation for Development and Cooperation
GoS	Government of Serbia
IIE	Institute for the Improvement of Education
IEQE	Institute for Education Quality and Evaluation
MoESTD	Ministry of Education, Science and Technological Development
NEC	National Education Council
RSA	Regional School Administration
SDC	Swiss Agency for Development and Cooperation
SSC	Sector Skills Council

## Important definitions

Accreditation	A process of certifying an institution or programme/curriculum for a certain task. For a reliable accreditation the decision authority ought not to be the same as nor dependent on the control authority.
Apprenticeship Market	Labour market on which students search for an apprenticeship position (supply) and employers offer open apprenticeship positions in their companies (demand). The matching is decided by both parties. To avoid imbalances on the market a close monitoring of the apprenticeship market is essential.
Curriculum	A curriculum contains the learning content as well as the learning processes and learning organisation (Robinsohn, 1967).
Dual VET	Work- and school-based vocational education and training. According to the OECD an education programme in dual VET contains more than 25 percent vocational content in the curriculum and students learnt at least 25 percent of the curriculum at the workplace.
Function	A specific task that a system has to be able to perform (Barker & Longman, 1992).
Governance	Steering and regulation body of an organisation or system.
Local	Lowest government level such as municipalities, cities, and villages.
National/GoS	Central, national government.
NVQF	The national vocational qualification framework defines and states the qualification standards, which must be fulfilled at the end of an educational process.
Occupation	According to the “Berufskonzept”, an occupation is a social construct of concept based on the consensus between the social partners and the government about the choice and bundling of working activities (Renold, 2016).
Process	A series of actions conducting to an end (Merriam-Webster online dictionary).
Qualification Standards	The qualification standards contain the skills and competences for a defined level, which have to be acquired during the programme and are tested at the end. If the standards are met, the test is passed, else repetition is necessary (according to the taxonomy of Benjamin Bloom). Thus the qualification standards serve as selection mechanism.
RPL	A process for giving individuals credit for skills, knowledge and experience gained at any stage of their lives, through formal and informal learning, through work or other activities such as volunteering.

Regional	Intermediate government level such as regional school administrations or regional chambers of commerce and industry.
Sub-national level	Provincial and local levels (for the case that the allocation of powers is unclear but not of importance).

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# 1. Mandate and method of the report

The Chamber of Commerce and Industry of Serbia (CCIS) has approached the KOF Swiss Economic Institute, research division Education Systems, at the Swiss Federal Institute of Technology (ETH) to analyse the Serbian education system with a special focus on the part of vocational education and training (VET). In the following we state the purpose of the report and give a short overview on its outline as well as on the methodology we adopted for its formation.

## 1.1. Purpose of the report

The purpose of this report is to provide an in-depth analysis of the challenges VET faces in the current Serbian education system. The aim is to enable the CCIS to support building a strong VET system, which is attractive for all its target groups, such as students and contributing companies. To do so the report first highlights key elements for consideration when developing a new legal framework for VET, by defining the criteria for a strong dual VET system. This is followed by questions to build a vision for the Serbian VET system by 2040. Having established the foundation of the analysis, we outline the current VET system followed by an analysis of its strengths, weaknesses, opportunities and threats (SWOT). Thereby, the SWOT analysis puts a special focus on evaluating the draft of the Law of Dual Education from the 22<sup>nd</sup> of July 2017. Although, this report covers the most important aspects, it still faces some limitations, which we mention before stating in the final section our conclusion and recommendation on how to proceed.

## 1.2. Methodology and sources

This short descriptive research project is based on the following phases.

### **Pre-Phase I – Fact-finding mission in Belgrade**

During the fact-finding mission of Dr. Ursula Renold in Serbia (September 12-14, 2016), she met with stakeholder groups to exchange opinions and experiences of the Serbian VET approaches. Furthermore, she had an intensive exchange with Prime Minister Aleksandar Vučić, several Ministers and the President of the CCIS, Marko Čadež. Additionally, Dr. Ursula Renold shared her own deep and long-lasting experience with governing VET systems and managing complex reforms during the meetings with the different stakeholder groups.

### **Phase I – Literature review and KOF Education System Factbook Serbia**

- Document analysis of the existing literature, the legal framework, policies, economic situation, the whole education system and so on.
- Preparing the KOF Education System Factbook Serbia and gathering feedback from CCIS. This is one of the backbones for the next project phase.

### **Phase II – Elaborating a VET reference framework for strong dual VET systems**

- To develop the VET framework we rely on a variety of information sources. One source, which we use extensively in section 2 of this report, is to gather information from the literature. Thereby, we consider theoretical concepts as well as evidence from other studies.
- Section 2 describes the reference framework for a strong dual VET system which we need for the SWOT analysis of the current Serbian VET system.

- Based on section 2 we develop questions in section 3, which can be used by Serbian stakeholders to develop a long-term strategy and vision for a strong dual VET system in Serbia.

### **Phase III – Analysis of the current VET system of Serbia including the new draft of the “Law on dual education”**

- The first part of section 4 is a summary of the KOF Education System Factbook of Serbia.
- In the second part of section 4 we analyse the new draft for a “Law on dual education” (Version from July 2017).
- The extensive SWOT analysis highlights the strengths, weaknesses, opportunities and threats of the current and planned dual VET system in Serbia.
- During skype conversations with the project leaders from CCIS, during the CEMETS Summer Institute 2017 and during the visit of Dr. Ursula Renold to Belgrade from July 18<sup>th</sup> and 19<sup>th</sup> 2017 we validate our information and findings with high level government officials as well as different stakeholders involved in the legislation process.

### **Phase IV – Final report, including recommendations to the CCIS and Government of Serbia (GoS)**

- Limitations and recommendations are highlighted at the end of the final report.

## 2. Defining the criteria for a strong dual VET system

The three keywords in the title are *strong system*, *dual* and *VET*. In order to have the same understanding about what these keywords stand for we define and explain them one by one in the following. We start with describing *vocational education and training (VET)* followed by a discussion on a *strong system* and thereafter explain the importance of the element *dual*.

### 2.1. What does vocational education and training (VET) stand for?

A sustainable education system fulfils three main purposes: individual control ability, human capital, and equality of opportunity (Klieme, et al., 2006). The first purpose, individual control ability, stands for the education system providing individuals with the capability to shape their own biographies and to be an active member and driving force of their society and environment. The second purpose, human capital, indicates that the education system should provide individuals with the knowledge and skills needed on the labour market, hence to secure the volume on the labour market quantitatively and qualitatively. The third purpose, equality of opportunity, states that the education system should ensure that everybody gets the same opportunities in life independently of their gender, religion, social background or nationality.

For VET the most relevant purpose is the one of human capital formation. This is the case because VET, as part of the education system, should prepare individuals for the entry into the labour market as well as for further education. Thus, it should not only provide theoretical skills needed to advance in the education system but also practical skills demanded by the labour market, such as showing up on time for work, being able to work in a team and so on. Therefore, VET stands for the part of the education system, which specialises in providing the skills required by the labour market to establish or maintain a flourishing economy. Thus programme features and curricula must be coordinated with the actors of the employment system.

### 2.2. When is there a strong system in place?

In order to answer the question in this subtitle, we first need to define what a *system* is and how a VET system is related to a *VET pathway*, a *VET programme*, a *VET curricula* and a VET course. According to the Merriam-Webster online dictionary a system is “a regularly interacting or interdependent group of items forming a unified whole”. Thus, applying this definition to the VET system it refers to the entire upper-secondary education part of the education system which deals with vocational education and training.

The relation of a *VET system* to a *VET pathway* is not easy to understand, as it heavily relies on the theoretical concepts people have in mind. Renold et al. (2016) define a VET pathway as “all education programs that prepare students specifically for the labor market instead of only general higher education.” The definition of *VET programme* in Renold et al. makes it clear how it relates to the VET system and the VET curricula. According to them a VET system consists of different VET programmes, i.e. 2-year programmes with qualification standards for more practical gifted people or a 3-4-year programme for people who can handle more complex and ambitious work situation or even programmes which combine high level general education with high level qualification standards. Depending on the *mode of governance*, their ways (full-time school based, dual apprenticeship, different ways for adult learners, recognition of prior learning (RPL) procedure) are pre-defined in a detailed way (input-oriented approach) or the appropriate authority just set *the national qualification standards* which must be applied without defining the exact way (output-oriented mode of governance). The national qualification standard is the reference for all ways. One VET programme thereby might contain multiple



VET curricula for different occupations. A curriculum itself refers to all courses (subjects) within a VET programme for a single occupation. A VET course in turn covers a topic or an area of similar topics of an occupation.

Applying these definitions to the Serbian case, according to the KOF Education System Factbook Serbia, Serbia has two pathways on the upper secondary level (e.g. “General secondary education” and “Vocational secondary education”). Within the Vocational secondary education, they have two programmes (3-year and 4-year schools).

However, *VET systems* have a much higher scope and deal with different institutions (sets of rules, roles and responsibilities) and their regular interaction and inter-dependencies. In other words: several single programmes do not make a VET system. Without visible couplings (interaction and inter-dependencies) between different set of institutions it will remain a fragment puzzle of not related elements. For example, a programme needs to be connected to quality institutions, such as accreditation boards/agencies or to the institution which regulates the NVQF. If such couplings are transparent to everybody, people can understand the difference between VET programmes and a VET system.

Having defined and related the different terms to the VET system we continue with describing how a strong (e.g. high quality) system in VET looks like. From our experience there are five key principles, which - applied together - lead to a strong system. Those principles are:

- **Education-Employment Linkage:** The actors from the education system and the employment system are involved in the whole *curriculum value chain* and define the national qualification standards (occupational profile, competences on the appropriate complexity level of cognition the exams/assessment procedures) as well as where they should be implemented (learning locations, regions/villages). Furthermore, both actor groups are involved in designing, applying and updating the VET curricula for the different occupations (Renold, et al., 2015; 2016).
- **Good governance:** The governance is well coordinated between the political levels – usually the national level, the sub-national or provincial level and the local level – and follows an integrated, output-oriented approach as they are more efficient and effective and allows to adapt the curriculum to regional/local conditions if necessary. Furthermore, it reduces bureaucracy because the national qualification standard is the reference for all ways, including adult learners and RPL procedures. Governance should be defined in all political level (national, sub-national → province/regional and/or local), depending on the constitution. Clear governance on all levels facilitate implementation for all actors.
- **Structure follows functions:** To understand the scope of a *VET system* reformers first should define the required minimal functions within the VET system, which are inter-dependent with the programmes under revision before starting to structure institutions and allocating the responsibilities to the various actors on the different governance levels.
- **System permeability:** The VET system is embedded in the national education system, so that there exist progression routes from all lower education levels and to all higher education levels. *Labour market integration programmes* which are basically controlled by the Ministry of Labour are not considered as education programmes and therefore have no currency within the education system. A key element to include them is the RPL, which helps to get access to the education system by having defined and approved procedures.
- **Quality assurance:** High quality is best achieved by defining national qualification standards as well as coherent exam/assessment standards and by applying the checks and

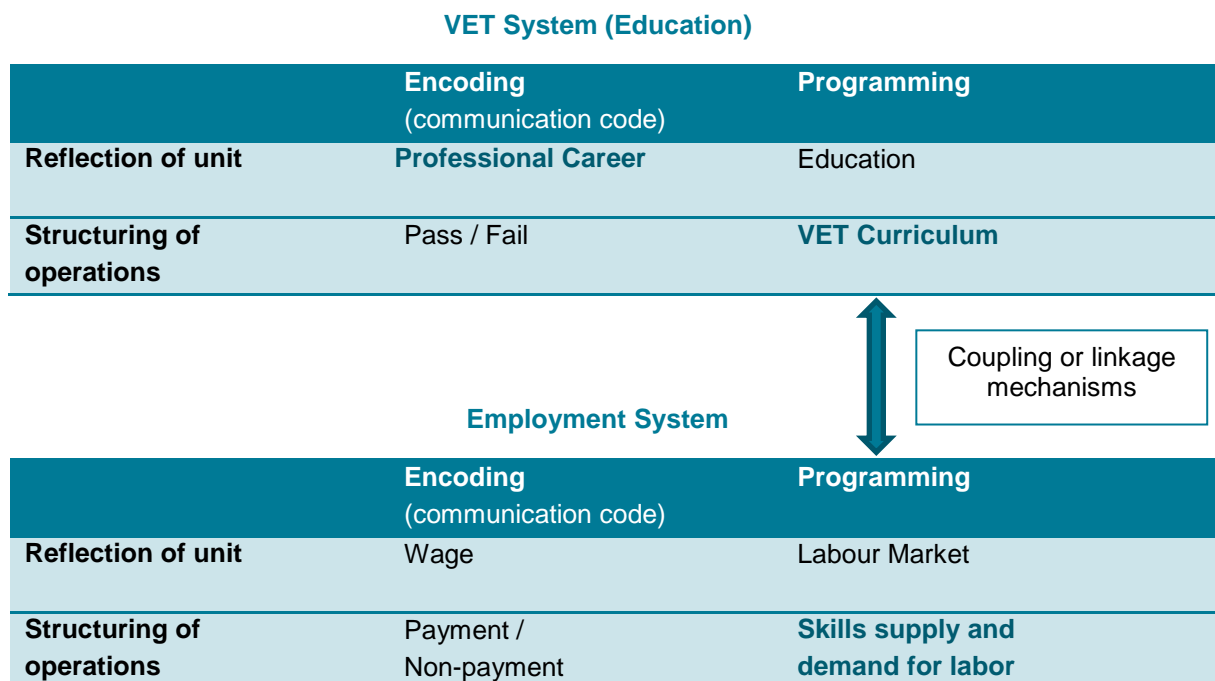
balances principle. The VET programmes then are regularly monitored and evaluated according to those standards by an independent third party.

The advantage of a strong VET system is its efficiency, effectiveness, and equity. In order to better understand the five principles we go more into detail in the following.

### The Education-Employment Linkage

The linkage between the education system and the employment system is based on the System Theory of Luhmann (1994), which stipulates that a system is a complex and regulated structure with its own communication codes and programming.

**Figure 1:** Linkage between the education system and the employment system



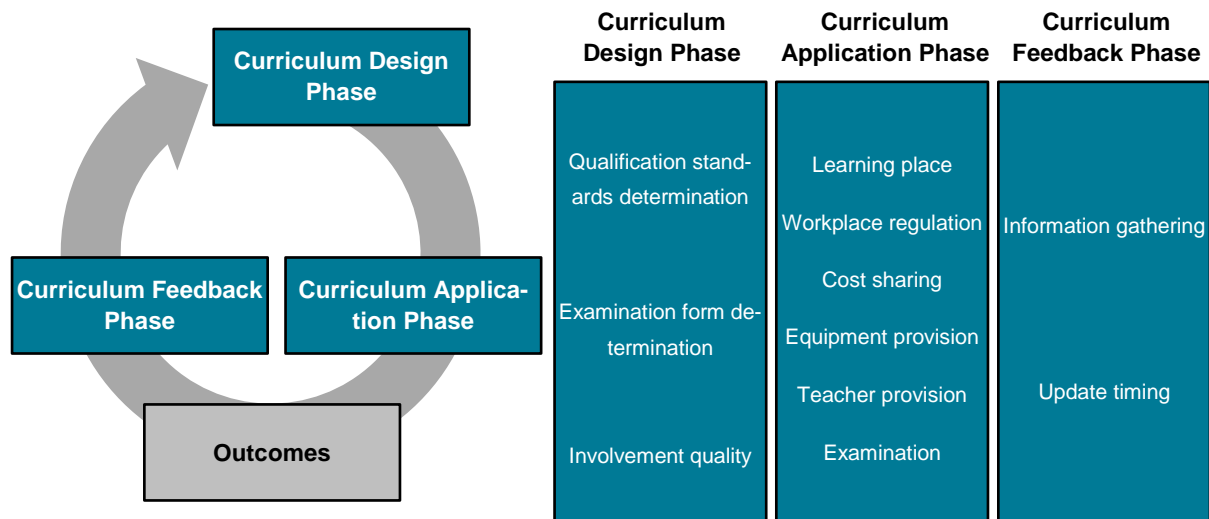
Source: Renold et al. (2015)

Applying this concept on the education system, respectively the VET system, the communication code of the system is whether an individual is able to pursue a professional career or not. The programming then needs to take into account other systems to which the VET system is connected to, such as the employment system. Therefore, the programming occurs through VET curricula. So the VET system does not only educate individuals to allow them to follow a career within the education system but especially to meet the skills demand on the labour market. The labour market on the other hand belongs to the employment system, which is encoded by a wage being paid or not. The employment system's programming therefore is for the labour market, whereby the operation is based on skills supply and skills demand. Figure 1 displays the encoding and programming of the VET and the employment system. So, a lack of a structural coupling between the two systems leads to coordination and control problems resulting in a mismatch between the skills supplied by the education system and the skills required by the employment system (Eichmann, 1989).

This close connection between the VET system and the employment system is the reason, why it is so important to include both actor groups in all phases of the curriculum value chain (CVC), the analytical framework displayed in Figure 2 (Renold, et al., 2015). It consists of three

phases: curriculum design, curriculum application and curriculum feedback. In the curriculum design phase the qualification standards, the examination form and the targeted quality are determined. In the curriculum application phase the implementation is arranged, such as the determination of the learning place, the workplace regulation, the cost sharing, equipment provision, teacher provision and the examination. In the curriculum feedback phase information on the process is gathered and evaluated as well as the next updating time of the curricula defined. Furthermore, between the curriculum application and the curriculum feedback phase the effectiveness of the curriculum for the labour market can be measured by analysing the labour market outcomes of VET graduates (see e.g. the KOF Youth Labour Market Index in Renold, Bolli, Egg, & Pusterla, 2014). The concept of the CVC facilitates exploring the effect of an intended curriculum as it helps to take into consideration all aspects which matter in VET programmes. The better actors from education and employment systems are involved in all sub-dimensions, the stronger the couplings and therefore the better the outcomes.

**Figure 2:** Curriculum Value Chain (CVC)



Source: Renold et al. (2016)

Now that we have elaborated why it is important that the education system is linked to the employment system, we present different approaches concerning how such a relationship might be structured. The adequate structure for a country however depends on the normative values of the country. Table 1 shows an adaption of the structuring principles by Clematide, Dahl, Vind, & Helms Joergensen (2005). The relationship might be market-driven, state-controlled or occupation-driven.

In the market-driven approach, companies represent the employment system by setting up all the needed job profiles for the labour market and – if any – develop a company internal curriculum. Almost each company has its own curriculum. There is little connection to the actors from the education system. In contrast, in the state-controlled approach the employment system has no say and the skills required on the labour market are set by the government respectively by the institutions from the education system alone. Companies act as consumers of skills. In the third approach, occupation-driven, the employment system is involved but instead of setting up job profiles it identifies occupations defined by business associations. Thereby, occupation is understood according to the “Berufskonzept”, which is a social construct of concept based on the consensus between the social partners and the government about the choice and bundling of working activities (Renold, 2016). Depending on the chosen

approach of the *structuring principle* the determination of the governance (principle 2) and the allocation of functions to the government levels (principle 3) differ.

**Table 1:** Structuring principles for the relationship to the employment system

Criteria	Market-driven	State-controlled	Occupation-driven
Rationale	Production logics	School logics	Occupational logics
Political culture	Free market, competition-oriented	Centralistic, state-centred (elitist/autocratic)	Neo-cooperative, driven by social consensus
Education-programme frameworks	Businesses and individuals	School subjects, collectivist values, labour market plans	Vocational occupations
Content	Present needs of individual enterprises: - Utility-oriented - Short-term - Specific skills	Politically determined, focus on: - General/academic knowledge - Coursework - Planned economic goals	Determined by organizations: - Occupational relevance - Tradition - Labour market need - Innovation
Relevant labour market	Internal labour market	Planned labour market	Occupational labour market
Strengths	Flexible, cheap for the state, closely matches the needs of production	Strong linkage to general education, no problems with lack of training places	Broad VET with status equal to general education. Matches labour market need.
Weaknesses	Under-investment in training and education	Weak linkage to labour market, reliance on planning	Institutional inertia
Examples	USA, UK, Japan	France, China, Singapore	Germany, Switzerland, Austria, Denmark

Source: Renold and Caves (2017)

Based on our empirical findings (see Renold, et al., 2016) the best practice for VET systems is an occupation-driven approach as countries with this approach have the highest linkage intensity along the curriculum value chain. However, as stated before, it is a normative question, which structuring principle shall be applied in a country's cultural context and therefore cannot be answered by experts.

### Good governance for VET

Rauner et al. (2009) classified governance according to the type and mode of governance (see Figure 3). The type of governance refers to the coordination and integration between the various actors, whereas the mode of governance defines the way legal regulations are set up. These two dimensions each have two manifestations. The type of governance might either be fragmented or integrated. In a fragmented governance there is little coordination among the actors, thus actors are autonomous within the rules, and the responsibilities are distributed according to the subject areas neglecting the underlying functions of the whole system. In contrast, in an integrated governance the actors act in concert within the legal framework and the responsibilities are allocated by their function to all the governance levels.

The mode of governance either is input-oriented or output-oriented. In the input-oriented governance mode the actors enjoy low autonomy, as the norms and rules set by the national

government regulate all the aspects down to the detail. In contrast, in the output-oriented mode the national government defines only standards, goals and criteria which need to be met by all the actors. Thus the actors enjoy high autonomy in the way they establish the processes, as long as the standards, goals and criteria are met.

**Figure 3: Models of governance**

		Coordination of governance	
		Fragmented	Integrated
Mode of governance	Output	Fragmented output-oriented governance	Integrated output-oriented governance
	Input	Fragmented input-oriented governance	Integrated input-oriented governance

Source: Adapted Figure from Renold and Caves (2017)

Here as well, which governance model a country wants to adapt is a normative decision. From our experience a good governance for the VET system follows the integrated output-oriented governance model, as it improves efficiency, effectiveness and equity. There the standards are set on the national level for occupations, exams, instructors/teachers, career guidance, and other key features of the VET system. The implementation however, is delegated to the sub-national levels (regionals and/or local levels) and the other actors. One main advantage of this model is that employers are allowed to customise the VET teaching in their companies to fit their daily routine (as far as they are in accordance with the national qualification standard) while students will still get all the necessary skills upon programme completion. This facilitates the engagement of employers and industry actors and also considers small variations among local communities. Furthermore, such a model facilitates RPL procedures as they can use the same national qualification standards.

The selected governance model has also influence on the law of VET, as all the actors should be mentioned in the law. At least their role, rules and responsibilities should be defined as this facilitates the understanding on the system level. Another important aspect which should be regulated by the law is the financing system. Depending on the governance approach the regulation of an input-oriented or an output-oriented approach would be very different. In an input-oriented governance school infrastructure, salaries for principals, teachers and material/text books are paid by public authorities who are responsible for or are the owner of these schools. In an output-oriented approach public expenditure is per capita of enrolled or graduated students. It is obvious that the latter leads to more efficiency on the implementation level.

### The principle of “Structure follows Function”

The management of the VET system should follow the principle of “structure follows functions”. However, the allocation and implementation of functions depends on the country’s political

system, its constitution and the chosen governance type. Therefore, the following tables highlight generic functions for a VET systems<sup>1</sup>. Furthermore, the country's government has two to three governance levels: national and, sub-national levels or national, regional and local levels. The necessity to allocate functions to the sub-national level depends on the size and the scope of the intended VET system of a country.

Table 2 lists the functions for the national level which are concerned with the national governance, the regulation and system management, the permeability, the system development and improvement, and the financing. Table 3 contains the functions for the sub-national level (province or regional level) dealing with the provincial governance, the organization and maintenance of the infrastructure and VET schools coordination, the educational process from the acquisition of students up until the issuing of the VET certificates, the promotion of VET programmes and the financing. Table 4 then lists the functions for the local level, which are about the local governance, the VET programme implementation process, the infrastructure, and the financing.

**Table 2:** Functional analysis for VET and allocation of the functions on the **national level** based on Renold and Caves (2017)

Function	Education System	Employment System	Remarks
<i>National Governance</i>			
Relevant coordination partners	Who will be the leading entity in GoS that will control the VET sector and be responsible for the functions mentioned hereafter? Which other ministries are involved and what are their roles and responsibilities?	Which are the business and industry associations (of employers <i>and</i> employees) who should be part of national VET governance? What is their legal status?	
<i>Regulation and System management</i>			
Regulation of VET system management under VET Act	Regulate roles and responsibilities in a VET Act. Should include principles of cooperation, objectives and scope of the VET sector, and principles of quality assurance		Partnership between public and private sectors should be regulated by principles
Strategic planning, implementing policies and strategies	Relevant Ministry, most likely Ministry of Education, Science and Technological Development (MoESTD)	CCIS; Trade Unions	To be coordinated with the <i>sub-national level</i>
National (Vocational) Qualification Framework (NVQF)	Establishing a NVQF and regulate it in a legal document which is coherent with the VET Act	Proposing the allocation of qualification standards and competences to NVQF levels	Authority should stay within MoESTD because this function is related to recognition of certificates, diplomas and RPL
Recognizing national and international certificates and diplomas	All approved and recognised curriculum standards lead to nationally recognised certificates and diplomas and are in line with the NVQF		Nationally recognised diploma raises attractiveness of VET. Issuing certificates and diploma is done on a sub-national level

<sup>1</sup> These functions are first published in the Nepal Report by Renold and Caves (2017). We used the same functions and wording, but adapt the functions and remarks to the context of Serbia where necessary.



Occupation-driven qualification standards for the national labour market <sup>2</sup>	Recognizing national curriculum standards	Preparing national curriculum standards for each occupation to be submitted to the GoS for recognition; Preparing training materials for professionals in associations and companies	It is highly recommended that relevant sub-national bodies are included in this process.
Types and duration of programmes	Types and duration of programmes should be fixed on the national level in line with NVQF		
Defining VET programmes, learning locations and responsibilities	GoS should decide on types of VET programmes, or at least decide if programmes will include the following: a. work-based training (apprenticeship); b. classroom instruction, comprising vocational and general education subjects	Commitments from professional associations are a pre-requisite for work-based training.	VET without work-based training will not produce the skills needed on the labour market due to technological changes affecting qualifications
National qualification procedures (exams, tests, assessments)	Supervision and consistency checks	Establishing national exams, tests, assessments according to curriculum standard (consistency)	To be coordinated with the <i>sub-national level</i>
Defining language policy for VET programmes	Setting standards Financing translations of documents and training material according to the language principles	Applying standards in national curriculum	Depending on mode of governance
Quality control and accreditation of institutions and/or programmes	National administration is responsible for quality improvement by establishing quality standards and monitoring compliance.  A national accreditation council is responsible for developing accreditation standards for schools and/or programmes and approving accreditation decisions. Basic principles of such an accreditation council are regulated in the VET Act.	Business partners should be represented in the quality commission and/or accreditation authorities.	Other institutions such as universities can be included.  The accreditation agency's procedures and decisions can be carried out on a sub-national level.
Monitoring of apprenticeship market	GoS should monitor apprenticeship markets in the whole country and take action to restore imbalances	This task should be done in collaboration with professional associations	Monitoring the apprenticeship market means systematically monitoring the supply (number of students willing to start) and demand (number of places) for the programme
Training of professionals in the VET sector	National level should promote VET pedagogy.	Professional associations should work closely together with this institution	This task should NOT be allocated to a sub-national level because teachers should be

<sup>2</sup> This is an assumption from the authors as the size of the country and its labour market is too small for segmentation into sub-national units. Of course, it could be possible that the GoS wants to define occupational standards on a regional or local level. However, this will have the effect of a very fragmented system where mutual recognition of diplomas between regions and/or municipalities would be necessary.

	<p>A specific institution should be responsible for all professionals in the field of VET. An autonomous national training institution for teachers, trainers/trainers/inspectors from companies and professional organizations, and exam experts or career counsellors. Basic principles are regulated in the VET Act.</p> <p>Define minimum standards for VET teachers, trainers, instructors, career counsellors and exam experts.</p>	for professionals to ensure there is always training for instructors and exam experts from companies	trained equivalently if curriculum-standards are defined on a national level. Furthermore, critical mass is a pre-condition for quality and professionalism
Collecting and maintaining national statistics	Collecting data at the national level in coordination with sub-national levels.	Delivering data to national level as required for statistics projects.	
<b>Permeability and progression routes within the whole education system</b>			
Permeability throughout the education system	Establishing permeability both within the VET sector (vertically) and between VET and other education sectors (horizontally). Basic principles are regulated in the VET Act.		This is necessary for making VET attractive (reducing stigma)
Transparent access conditions and exit standards	Designing the system and providing information to inform all parties of requirements to get into and out of all education-system programmes		Avoid dead-end programmes
Functional differentiation of programme offerings	Ensuring that there are programme varieties to meet the needs of all students, including different goals, different abilities, and gaps in progression routes (e.g. vocational baccalaureates, tertiary VET programmes). Basic principles are regulated in the VET Act.		If representative groups of students fail exams, this may signal insufficient variety in programme types. If a progression route cannot be established, missing competencies need to be covered.
Recognition of prior learning (RPL)	Recognising skills, knowledge and know-how gained outside of formal education and training programmes by appropriate standards, procedures and tests. Basic principles are regulated in the VET Act.	Social institutions of the informal sector should help provide access to people who could benefit from RPL	
<b>System development and improvement</b>			
Monitoring and research for VET	Establishing a research strategy to strengthen evidence-based policy	Contributing to research strategy	Consider setting up an international advisory research board Basic principles are regulated in the VET Act.
Innovation projects to develop VET	Establishing a VET innovation fund to stimulate development projects	Launching innovation projects	Basic principles are regulated in the VET Act.
Support for disadvantaged groups and areas	Promoting VET initiatives that help disadvantaged areas and groups		
Public campaigns to strengthen VET	Financing public advertisement campaigns promoting VET	Contributing to advertisement campaigns through distribution channels within industry	Basic principles are regulated in the VET Act.



Financing VET			
Direct financing and contributions to lower-level financing	<p>Directly financing VET through accreditation council, institution for professionals, research and innovation programmes, public advertisement campaigns for VET, and staffing national administration.</p> <p>Contributing to lower VET financing through ear-marked money for sub-national levels. Calculation and distribution depends on the governance approach and on the ownership of the schools.</p>	Professional and industry associations can contribute to curriculum development and standards-setting processes.	Financing VET depends heavily on the type and mode of governance. It must be coherent to the chosen model.

**Table 3:** Functional analysis for VET and allocation of the functions on the regional level based on Renold and Caves (2017)

Function	Education System	Employment System	Remarks
<i>Sub-national Governance</i>			
Relevant coordination partners	Which is the responsible public entity that is the focal point for VET on a regional level and therefore responsible for coordination with national and local levels?	Which are the regional business or industry associations who can coordinate activities horizontally (with other province associations) and vertically (with regional and national associations)?	
<i>Organizing and Maintaining Infrastructure and VET schools</i>			
Coordinate VET school infrastructure vertically with local level	Concentration and allocation of VET-programme types to villages according to comparative advantages	Contributing to technical infrastructure	<p>Theoretically this function can be allocated to villages. However, villages may lack the critical mass to train every occupation.</p> <p>Concentrating occupations in specific villages will influence the financial scheme: <i>Money should follow the student.</i></p>
Define languages for VET programmes in provincial VET Schools	Sub-national level decides how to apply national language standards	Regional professional associations should be involved in the decision.	
Accreditation of local/regional VET schools and/or programmes	Accreditation agency organises and evaluates VET schools and/or programmes against national accreditation standards.		Institutional accreditation may be easier to implement. However, with many private schools it may be better to accredit programmes.
Career guidance and counselling agencies	Establishing agency for career guidance and counselling	Professional association helps with advertising occupational profiles, requirements and how access the apprenticeship market.	This can be allocated to the local level. However, it requires critical mass and professionalism so it is likely better at the regional level. Larger cities may run their own centres.

Implementing qualification standards, procedures and exams	Organizing an exam committee, which implements qualification procedures and exams	Regional professional associations should closely collaborate	
Collecting and maintaining province-level statistics	Collecting data required by the national level, designing and implementing province-specific statistical projects	Delivering data to provinces as required for statistics projects.	
<b>Educational processes from acquisition of students to issuing certificates</b>			
Career guidance and counselling offers through provincial agencies	Career guidance and counselling should be mandatory in lower secondary education		This could be regulated as a national standard.
Implementing preparation programmes (bridge courses)	Sub-national level should help prepare students for VET programmes if they have not reached a given academic level or completed compulsory education		This could be regulated at the local level, depending on the critical mass of students.
Recognizing apprenticeship contracts	Approving contracts between companies and parents/students	Regional professional associations can promote apprenticeship training	Regions have this responsibility to maintain <i>checks and balances</i> , if this is possible
Supervision of apprenticeship training and VET schools	Supervision of quality in companies and schools by inspectors		
Regional qualification procedures (exams, tests, assessments)	Supervision and consistency checks.	Regional exam commission prepares exams, tests, assessments in accordance with national curriculum standards	This function could be allocated to the local level. However, it is inefficient for every local unit to prepare and implement exams to the same standards.
Issuing certificates	Relevant sub-national government body		
<b>Promoting VET programmes</b>			
Innovation and development projects in coordination with VET Schools	Committees should constantly develop innovation and projects to improve VET (pilot projects)	Should be involved	Could be financed by a VET fund
Public advertisement campaign	Implementing public advertisement campaign on the regional level	Regional professional associations should collaborate	Could be financed by a VET fund
<b>Financing VET</b>			
VET school infrastructure	Concentration and allocation of VET-programme types to villages according to comparative advantages, such as the availability of certain industry cluster	Contributing to technical infrastructure	Theoretically this function can be allocated to villages. However, villages may lack the critical mass to train every occupation.

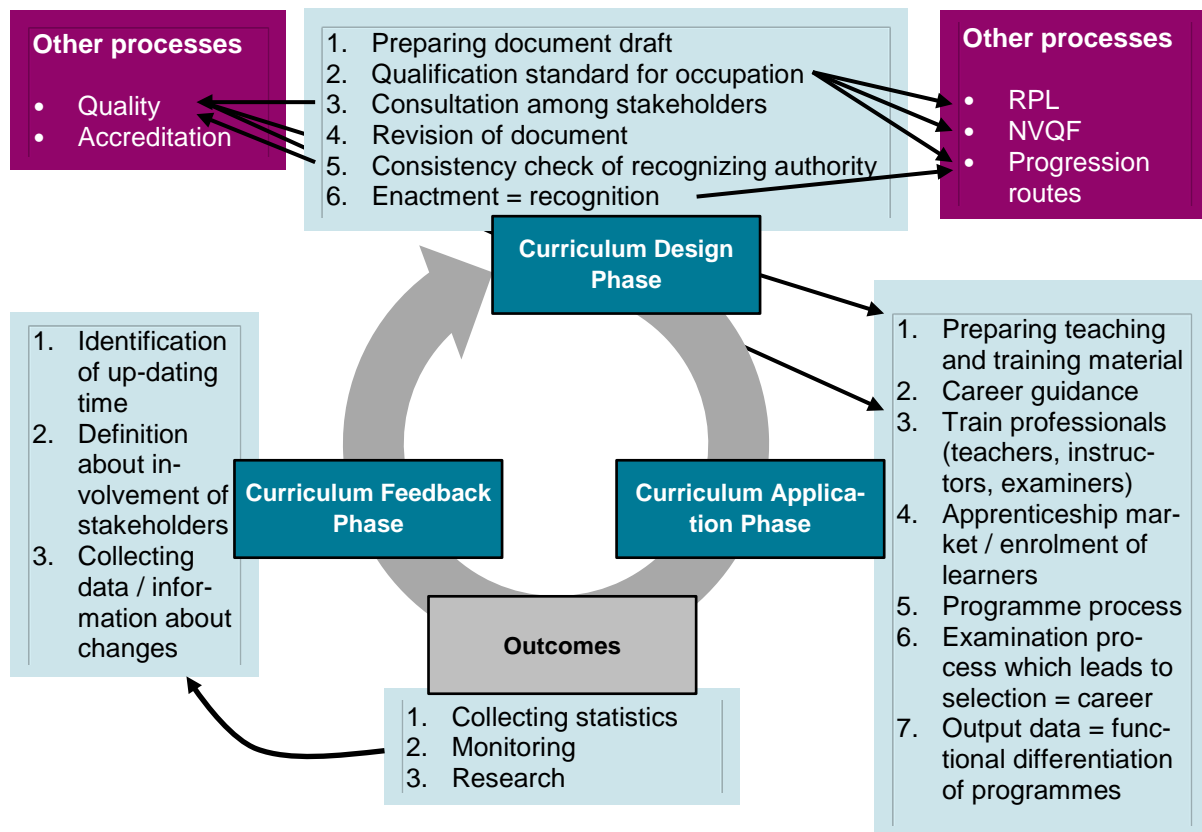
**Table 4:** Functional analysis for VET and allocation of the functions on the **local level** based on Renold and Caves (2017)

Function	Education System	Employment System	Remarks
<i>Local Governance</i>			
Relevant coordination partners	Which is the responsible public entity that is the focal point for VET and therefore responsible for coordination with the regional level?	Which are the local business or industry associations that coordinate activities horizontally (with local companies) and vertically (with regional and national associations)?	
<i>VET programme implementation process</i>			
VET schools	Management and maintenance of VET schools (human resource processes for staff according to minimal standards, at least for teachers)		These functions can be provincial except in designated cities, villages with VET centres. Again, <i>money follows students</i>
VET programmes implementation (incl. work-based training)	Running VET programmes according to national standards	Local companies cooperate by offering apprenticeship places.  Companies (with the help of their professional associations) offer other work-based learning opportunities (internships, traineeships).	
<i>Infrastructure in each village, city, municipality</i>			
Data collection	Collecting data for research and monitoring	Providing relevant data, especially for cost-benefit analysis of training	National-level research programme will direct data to be collected
Career guidance and counselling in lower secondary education	Offering career guidance and counselling to lower secondary students so all are aware of their options	Companies can offer “sniffing courses” or shadowing visits for potential apprentices, and/or contribute to career fairs.  Career guidance are helping people from the informal sector to get access to the RPL-procedures and tests.	
<i>Financing VET</i>			
VET schools and RPL procedures and tests	Financing and maintaining VET school infrastructure, staff, materials and textbooks. Financing RPL procedures and tests.	Companies providing work-based learning opportunities pay: Salary for apprentice/intern/trainee Salary for instructor(s) Salary for exam expert(s) Materials for company-internal training.  RPL procedures and tests should be free of charge for candidates.	

To allocate these functions to the three governance levels and its institutions is not easy without having key processes in mind. These processes depend on the chosen governance and the elaborated vision for the country’s VET system. In Figure 4 we display key processes (numbered in light blue boxes), which are needed to set up the CVC for a VET programme and also other necessary processes (pink boxes), which are relevant if a country wants to develop a VET system with an integrated output-oriented governance approach. The black

arrows indicate, which stages of the curriculum processes are connected to other processes within the VET system.

**Figure 4:** Processes to develop a curriculum



Source: Own depiction

Combining the information so far, we are now ready to set up the structure for the VET system. The governance determines the involved actors, to whom the identified functions and processes are assigned to. Covering the functions and processes establishes how many offices and how much personnel is needed.

First, allocation should consider the two to three political levels. What are the functions which must be covered by the national level? What should be allocated to the sub-national level and what will be done on a local level? This allocation depends heavily on the constitution (centralistic, federalist structure), the organization of the country (political power on different levels) and the ownership of schools.

Second, in VET systems it is very important to consider regional industry clusters and the need of their companies. Since VET programmes can be very expensive due to new technologies, which should be available for training (e.g. in manufacturing computerized numerical control (CNC) machines, 3D printers), it is recommended that sub-national and local level discuss about the density of schools within a region. Not every local unit will have to run all the VET programmes.

The above-mentioned functions and their allocation to three different levels are just examples on how it could be organized. The country has to decide, which is the best allocation according to their governance.

## The permeability of a VET system

The attractiveness of a VET programme for individuals increases if the permeability between the VET system and the rest of the education system is high. So, progression routes to higher (occupational or general) qualifications (vertical permeability) as well as progression routes to other general educational qualification programmes (horizontal permeability) are essential. Progression routes need to be defined. This means, that the certificate at the end of the programme has a clear value to move on to a next higher education programme (e.g. with this type of certificate someone can enter directly in the “Applied Bachelor Study Programme” or “with this certificate and an additional one-year general education programme”, someone can enter directly in a “Applied Bachelor Study programme”). Like this, the VET programmes lose their stigma of being second-best choice for individuals, because VET graduates still have the same opportunities as their counterparts from general education programmes. In general, a VET system becomes more attractive if there are no dead-end programmes.

The RPL also increases the permeability of an education system and allows to give adults with a low education or with a migration background access to make up leeway. In order to implement the RPL a national qualification framework is helpful, which sets the standards for entry and exit into all educational programmes, including the VET programmes as well as non-formal education programmes and remedial courses. Like this, no individual would be prevented to progress in their career. This is a good example for output-oriented governance. Hence, if the qualification standard for an occupation can be set at the national level, it can serve as a reference for young and adult people as well as for formal programmes and RPL.

## Check and balances for a high quality VET system

Finally, a strict system of quality assurance should be established, as all the previous principles are ineffective in case the quality standards are not met. Basically, all measures in a VET system should be checked by a quality measure. In order to guarantee a high quality it is essential to work with checks and balances, where independent third parties are responsible to evaluate regularly whether the VET programmes meet the established standards. Like this the companies and the individuals can rely on the VET programmes having useful contents with valuable degrees.

### 2.3. In which case can one talk about dual?

The element of duality in a VET system is closely connected with the education-employment linkage. It is a social construct of concept, whereby the economy is involved in all phases of the curriculum value chain process as described in section 2.2. Thus, a dual VET system can only be pursued in case the country has decided to follow an occupation-driven approach for the relation between the education system and the employment system.

However, dual also refers to part of the curriculum being taught at the company and not only at school. Therefore, VET students are matched with companies. This is mostly arranged by an apprenticeship market.

Following the need of companies, they normally offer dual VET places for students. These places are considered as jobs for “apprentices”. If the apprenticeship market is a feature of a dual VET system, then the information on demand and supply must be provided (e.g. web-platform) and monitored. Career guidance centres prepare people for applying on the apprenticeship market. Career guidance centres are special units which may be independent from

schools and companies and are financed by the Government. They gather appropriate information in cooperation with the relevant ministry as well as with professional associations or chambers of commerce and industry for each education programme and occupation. Their goals are to inform parents and students about the different options they have to continue education and training and prepare youngsters for the application process. This is particularly important if young adults have to apply for a job through the apprenticeship market.

In principle, the matching through the apprenticeship market is more efficient than if schools place their students randomly to companies. The reason is that companies and VET students can decide on whether they would like to work with each other for the next three to four years or not, which leads to better matches and less conflicts. It prepares young adults for entering the labour market which is accompanied by difficulties. However, through this transition phase young adults learn a lot about soft skills and coping with difficulties.

### 3. Vision for a dual VET system in Serbia

Serbia needs a vision to develop a strong dual VET system. This vision should be stipulated as a policy to have weight and not be ignored. Possible questions to stimulate the vision could be: How should the dual VET system look like by 2040? What are the numbers of dual VET students/graduates which shall be achieved by then?

To realize the vision of a Serbian dual VET system, the five principles described in the previous section should be followed. As they contain normative decisions, which need to be made by the Serbian actors, we list potential questions that should be addressed in such a dual VET policy.

#### Questions regarding the education-employment linkage:

- Which cooperation approach does Serbia use currently for the relationship between the education and the employment system (EEL)? Is all the decision power within the ministry of education or in the hand of actors from the employment system or is the power equilibrium shared by actors from both sides?
- Does the approach meet Serbia's goals or should another approach replace the existing one?

#### Questions regarding the governance:

- Which governance model does Serbia have currently?
- How should the governance model look like in the future?
- Shall all occupation be under one dual Education law? (e.g. agriculture, industry, services, health care, social work, arts etc.)?
- How many ministries should be involved in VET, and which ones?
- Who is the leader for VET issues, and what are the responsibilities of all the involved actors?

#### Questions regarding the principle "structure follows functions":

- Which functions do apply to Serbia?
- Are there other functions not listed in the table, which are essential for Serbia?
- What structures are needed to cover all the important functions?
- Who will implement the law on the sub-national and local level?



#### Questions regarding the permeability:

- How should the dual VET system look like in Serbia? One single programme or various programmes?
- On which level of the education system should the VET system be placed?
- How well the dual VET system shall be connected to other programmes of the education system (horizontally and vertically)?
- Should the dual VET system be an alternative for weak students or a functional equivalent to academic education?

#### Questions regarding quality assurance:

- How should the quality of the VET system be regulated in order to provide high standards?
- Who should be responsible for the quality assurance?
- When and how should the quality be assessed?
- What are the consequences if the quality is not met by the schools? What if it is not met by the companies?

With these questions in mind, we describe the current VET system of Serbia in the next section.

## 4. The current VET system and its SWOT analysis

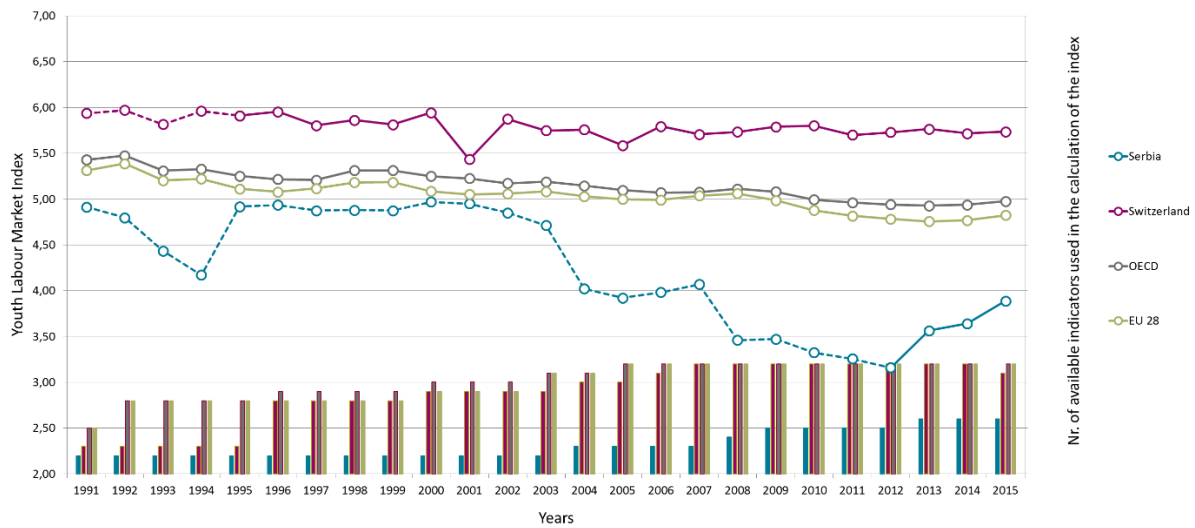
### 4.1. Summary of the KOF Education System Factbook Serbia

The following part summarizes the KOF Education System Factbook Serbia. We thereby focus on the situation of the youth labour market, the Serbian education system and the current VET system in Serbia.

#### **The youth labour market situation in Serbia**

The KOF youth labour market (KOF-YLM) index over time (see figure 3) gives information about the development of Serbia's youth labour market from 1991 to 2015 compared to Switzerland, the OECD countries' average and the EU-28 countries' average. We see that Serbia is always below the others, even though it almost caught up between 1995 and 2004. Another noticeable pattern is that the index for Serbia deteriorates quite a bit during the time new indicators were included. Therefore, since Serbia has little information on its youth labour market indicators, the comparison has to be made with caution, especially for the dashed line period (below six indicators). Before 2004 just two indicators were available (unemployment rate and relative unemployment ratio), thereafter the numbers of indicators has increased gradually up to six (youth unemployment rate, NEET rate, in work at risk of poverty rate, vulnerable employment rate, relative unemployment ratio, and incidence of long-term unemployment rate) from 2013 on. Still, data for the relaxed unemployment rate, the temporary workers rate, the involuntary part-time workers rate, the atypical working hours rate, the formal education and training rate, and the skills mismatch rate is missing.

**Figure 5: KOF-YLM-Index over time, 1991-2015**



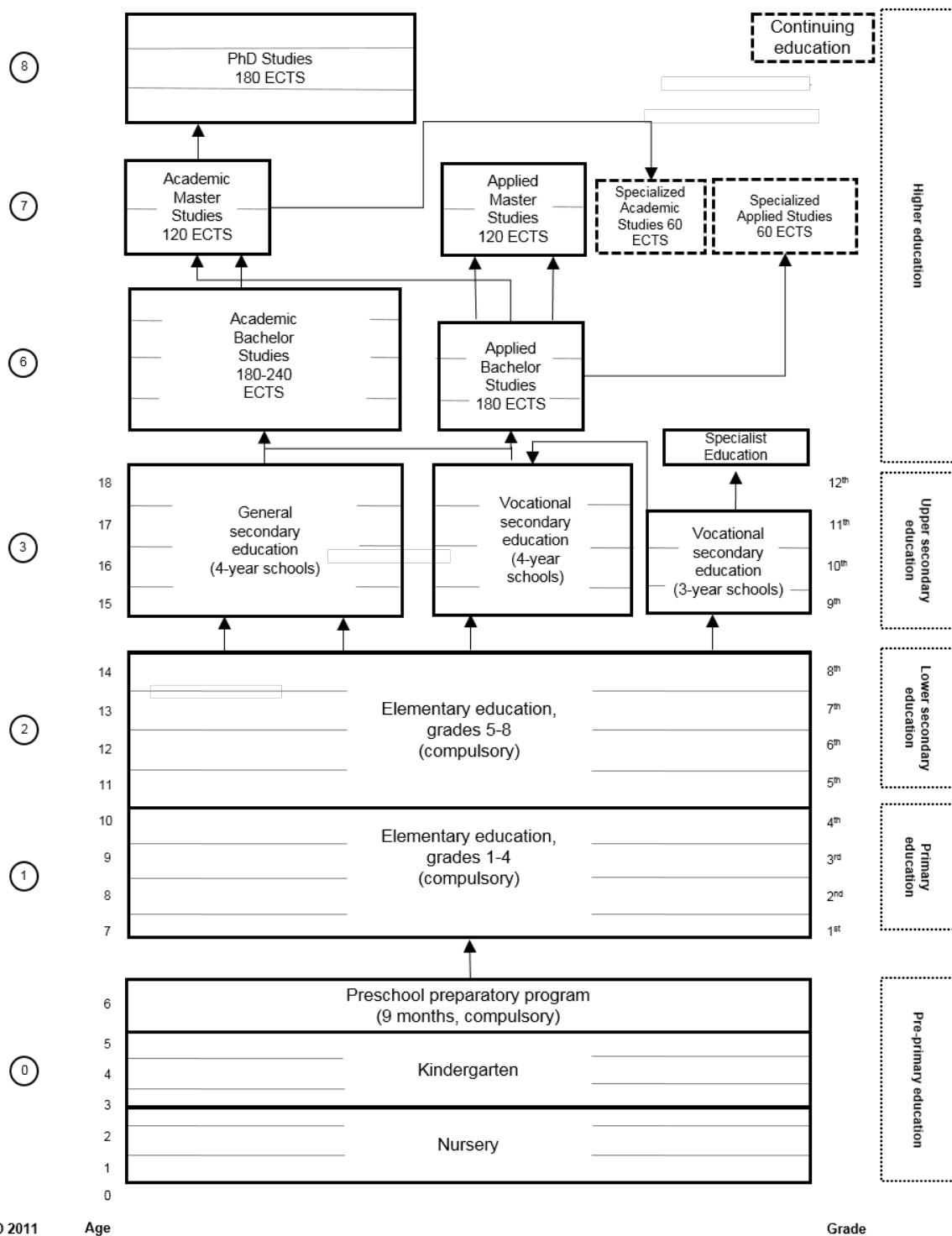
Source: KOF Swiss Economic Institute (2017)

### The Serbian education system

Figure 6 shows the Serbian education system according to the International Standard Classification of Education (ISCED) 2011. In Serbia education starts with compulsory preschool education for children between the age of 5.5 and 6.5 years. It is followed by compulsory elementary education, which lasts for eight years. During elementary education pupils pass two cycles: 1<sup>st</sup> to 4<sup>th</sup> grade (primary education) and 5<sup>th</sup> to 8<sup>th</sup> grade (lower secondary education). Thereafter, pupils continue with upper secondary education, where they either attend four year general schools or three to four year VET schools. In higher education students have the choice between academic and applied studies. Both tracks include Bachelor and Master/Specialised programmes, whereby academic studies additionally allow for subsequent PhD studies (Eurydice, 2016; UNESCO, 2011).



**Figure 6: ISCED 2011 Mapping of Serbia's Education System**



Source: KOF Swiss Economic Institute (2017)

### The current VET system of Serbia

VET of Serbia is anchored in the 'Law on the Foundation of the Education System' and the 'Law on Secondary Education'. Thereby the first law places VET in the Serbian education system and the second law regulates the organisation of VET. To the organisation of VET

belongs the involvement of the actors, teaching, and the learning locations. In general, VET is taught at VET schools and work-based training is scarce. Even though the Law on Secondary Education does not regulate in-company training, it contains opportunities for work-based training. The current situation is about to be changed. A new law, 'Law of Dual Education', which is currently under development (as of July 2017), is going to deal with work-based training and the role of employers more precisely.

The key actors in the Serbian VET governance are the Ministry of Education, Science and Technological Development (MoESTD), the National Education Council (NEC) and the Council for Vocational Education and Adult Education (CVEAE) (GIZ, 2015). Further actors include the Institute for the Improvement of Education (IIE), the Institute for Education Quality and Evaluation (IEQE) and Sector Skills Councils (SSCs), which are not yet fully established (GIZ, 2015; ETF, 2015).

The MoESTD administrates the entire education system (UNESCO, 2011). In VET, it is responsible for 'research, planning, inspection and development of secondary education; participation in the development, equipping and maintenance of facilities; professional evaluation and inspection of skills upgrade of staff at education establishments' (GIZ, 2015, pp. 38-39) and accredits VET schools as well as programmes (ETF, 2015). Within the MoESTD, the Regional School Administrations (RSAs) are responsible to monitor and evaluate schools, coordinate the in-service training of teachers and to control the finances of schools (GIZ, 2015). Other involved ministries are the Ministry of Finance, the Ministry of Youth and Sports and the Ministry of Labour, although their cooperation is not institutionalised (GIZ, 2015; ETF, 2015).

The NEC develops and improves the general part of VET education and is responsible for the quality assurance (UNESCO, 2011). It consists of 42 members, mostly representatives of universities or academic associations. The NEC has the authority to decide on the establishment of standards for teachers and textbooks, as well as the organisation of schools. Moreover, at least once a year, it informs the Serbian parliament about the current state of the VET education (GIZ, 2015; NEC, 2009a; NEC, 2009b).

The CVEAE is responsible for the vocational education part in VET, besides the IIE and the MoESTD. It also has a say in the accreditation VET programmes (ETF, 2015). It consists of 21 members, including the representatives of the Chamber of Commerce and Industry of Serbia, craftspeople, employer's associations, VET experts, labour representatives, trade union members, VET school teachers, and employment and social policy institutions (GIZ, 2015).

There are around 350 vocational secondary schools, most of which are public (GIZ, 2015; ETF, 2013). About 73% of students in upper secondary education attend VET schools, whereas the remaining 27% attend general education schools and art education (UNESCO, 2011). The VET schools offer three or four year programmes, some of which require the passing of entry exams (Eurydice, 2016; UNESCO, 2011). The four year programmes cover 129 profiles and the three year programmes 74 profiles. About 19% of VET students follow a three year programme and the remaining 81% follow a four year programme. The three year programmes are for the academically weaker students and provide a diploma of completed final exam (Diploma o položenom završnom ispitu) In contrast, the four year programmes lead to the same certification as the general education programmes, i.e. the diploma of completed secondary education (Diploma o stečenom srednem obrazovanju). This diploma grants access to studies at the tertiary education level (EP Nuffic, 2016).

The VET programmes with the 203 profiles cover 15 study fields (GIZ, 2015). They can be classified in three different models: the classical, reformed and dual model. The largest difference between the three models concerns their practical training. The classical model contains a very low share of practical training. It is mostly done in schools with two weeks of company training in the last two years. This model is the standard in about 139 profiles. The reformed model, in place since 2003, provides more practical training in companies besides the practical training at schools. So far, 59 profiles have been changed to the reformed model including more practical training. This model was developed with the help of foreign organizations, such as the European Union and the German Organisation for Development Cooperation (GIZ). The dual model is oriented along the lines of a dual VET approach as it exists in the German speaking countries. In this model, practical training is mostly done in companies through instructors. Currently, this model includes five profiles. However, there are various efforts made through reforms and pilot projects to expand the number of programmes based on this model supported by the Austrian Development Agency (ADA), the German Organisation for Development Cooperation (GIZ) and the Swiss Agency for Development and Cooperation (SDC).

All curricula of the 203 profiles are nationally standardised. They state the objectives, outcomes and content of the programmes, as well as their implementation and the way results shall be assessed. They contain general education subjects, such as reading, maths, ICT and foreign languages. The general education part amounts to 35% of the curricula in three year programmes and 45% in the four year programmes. (Eurydice, 2016; GIZ, 2015). Depending on the model, the curricula for the VET profiles are developed differently. In case of the classical model the MoESTD and the IIE are responsible for the development of curricula.

The curricula and qualification standards in the reformed model are developed by the MoESTD, IIE, company experts from the relevant fields, and other actors such as schools, or companies/ sectors. The curricula have to comply with the guidelines of the national qualification framework (NQF), which sets the qualification standards and learning outcomes. The setup of the curricula follows the DACUM method and thus contains instructions concerning the competencies and learning outcomes. Any interested actor such as a school, companies, sector organizations or government organizations can start the initiative to introduce or update an existing curriculum or qualifications standard. The IIE organizes one-day expert workshop, where they invite eight to 12 experts from the most important and largest companies of the respective sector to get their input and feedback on the developed occupational profile. The development of the curricula then takes place through the IIE. In the dual model, the CCIS will be responsible for the qualification standard by drafting initial occupational profiles, which then need to be recognized by the MoESTD.

The application of the curricula is similar except of the learning location as stated above. Concerning the exams at the end of the programmes, they are displaced by standardised exams. VET teachers require a Master's degree at a university and the licence exam, which takes place after one working year. Afterwards, they are obliged to organize their professional development. The education of teachers is thus the same for all upper secondary education teachers. The teacher education belongs to the responsibilities of the Centre for Professional Development of Education Staff within the IIE (Eurydice, 2016). Currently, there is no plan to develop a specific concept for VET teachers.

To monitor and enhance the quality of the VET system, the NEC and the CVEAE perform internal and external evaluations (GIZ, 2015). For the external evaluation of VET schools the NEC has introduced quality indicators, based on which the Institute for Education Quality and Evaluation (IEQE) and the MoESTD advisors perform the evaluation. Recently, the VET Cen-

tre and the IEQE proposed the introduction of additional VET standards based on the European Quality Assurance Reference Framework for VET (EQARF) (ETF, 2015). The EQARF, which was developed by the EU member states and the European Commission, “is designed to promote better vocational education and training by providing authorities with common tools for the management of quality” (EQAVET, 2016). In the reformed model, the IIE, expert groups, the CVEAE and the MoESTD are responsible for the internal evaluation, i.e. quality of the curricula. In the dual model, according to the ‘Law on Dual Education’, also the employers are responsible for quality assurance of the curricula, but only with respect to work-based learning.

The VET system in Serbia is largely funded by the state, since most VET schools are public (Eurydice, 2016). Thereby, the public VET schools receive money from the central government for the salaries and the local municipalities for maintenance of buildings, school materials, equipment and the professional development of teachers. The private VET schools rely on the fees charged to students (GIZ, 2015). However, no detailed information on the expenditures for the VET system is available.

## 4.2. SWOT analysis

The following SWOT analysis is based on the information about the current VET system and evaluates the draft of the Law of Dual Education from the 22<sup>nd</sup> of July 2017. As vessel we use the grid of the functions from Subsection 2.2.

**Table 5:** SWOT analysis of the Serbian VET system and the new Law of Dual Education (version from July 22<sup>nd</sup>, 2017) for the national level

National Governance	
<i>Relevant coordination partners</i>	
S	The law of dual education stipulates in Art. 3 the principle of “school and employer partnership” and that the dual education shall be based on the obligation of all stakeholders. Art. 3 defines the aim that an institutional partnership and cooperation between the ministry, the CCIS and the Institute for Improvement of Education should be established in order to implement dual education a national level.
W	It is not clear who is doing what because there are no specific articles defining the roles and responsibilities of those institutions
O	In by-laws the governance of Serbian “Dual Education System” should be operationalized. The transitional article 39/40 gives the opportunity to clearly analyse and evaluate the governance on the different political levels within three years. Furthermore, a brochure could be elaborated to summarize the role of specific partners such as the Ministry, CCIS, IIE and highlight some procedures such as qualification and curriculum procedures, eligibility of training companies etc.
T	Without clarifying the roles and responsibilities on all political levels, the GoS is taking the risk that no concrete actions will follow.
Regulation and System management	
<i>Regulation of VET system management under Dual Education Law</i>	
S	Serbia has a draft of a Dual Education Law which is ready for approval in the Parliament. Furthermore, principles, scope of the VET sector and some elements regarding quality issues are mentioned. Roles and responsibility on a national level are clear to some extent.
W	It is not clear how the concurrent power of education between national, province and local level will be distributed.
O	If the law is approved, the implementation process could be used to clarify roles and responsibilities and to make recommendations for amendments.
T	

<i>Strategic planning, implementing policies and strategies</i>	
S	Some principles are addressed in Art. 3 and objectives are mentioned in Art. 4.
W	<ul style="list-style-type: none"> <li>It is not clear how some of the principles will be operationalized. See e.g. 2, 4, 7, 8</li> <li>Objective are very student-centred or very general (not operationalized in the law) → see the goals 1, 2, 4 in Art. 4</li> </ul>
O	Transitional article 40 allows the newly established Commission to analyse these questions and to make amendments in the law and/or in by-laws
T	The financial flows are quite transparent. It is highly recommended to calculate cost of implementation for all partners during the implementation process.
<i>National (Vocational) Qualification Framework</i>	
S	Art. 5 mentions the relation between qualification standard for dual education curricula and the mandatory compliance with the NQF.
W	The sector councils seem to be a body dealing with NVQF issues. However, it is not clear if these councils are equivalent to the industry associations of the CCIS and/or how they are related to CCIS. The future law on NQF may clarify that aspect.
O	It would be important to clarify the relationship between “sector councils” and CCIS.
T	
<i>Recognizing national and international certificates and diplomas</i>	
S	Art. 32 mentioned that “after passing the final and graduation exam, the student shall be issued a public document.
W	It is not clear in which law this is currently regulated. Furthermore, GoS should evaluate if one single programme with a specific credential would raise the attractiveness of a dual VET programme or if the GoS should take further measures to raise permeability within the whole education system.
O	
T	Without defining the credential at the end of the curriculum process it is difficult to raise the attractiveness of such a programme.
<i>Occupation-driven qualification standards for the national labour market</i>	
S	Art. 5 highlights different roles regarding Curricula in dual education. The IIE (which is defined in another law) shall elaborate a draft curriculum and submit it to the Ministry. The Minister in charge of education and training will adopt the curriculum. It is very important that the standards of qualifications should be updated at least every 5 years.
W	In this article, there is a lack of coherence to Article 4 (institutional partnership) and with Art. 3 principle of relevance (consistency with the needs of employers and the labour market). It is not coherent, why the CCIS with its industry associations do not have any role in this process. Furthermore, it is not clear who should take action to update the standard of qualifications.
O	The Commission (Art. 40) should analyse appropriateness of this regulation and clarify more precisely the role of each institution.
T	Transparency about the role/tasks and governance of different institutions resp. link to existing law where these characteristics are defined is necessary.
<i>Types and duration of programmes</i>	
S	Art. 6 defines scope, period and work-based learning very precisely.
W	
O	The implementation phase will show if this approach will work. It is highly recommended to evaluate feasibility of Art. 6.
T	
<i>Defining VET programmes, learning locations and responsibilities</i>	
S	Art. 5-7 are covering those aspects. During the legislation process a lot of progresses were made.

W	It is not clear if industry organizations (or sectoral committees) agree with that as we do not know if the CCIS with its sector organization will be part of any consultation process and how they are involved in the up-dating process of the qualification standards.
O	The more industry organizations (as member organization of CCIS) stand behind the new law the easier will the implementation process be.
T	Not involving the implementer from the beginning of developing a new law can produce obstacles in the implementation process as companies may resist to some regulations. See also Art. 9, paragraph 3: “the employer shall be responsible for systematic and high quality performance of WBL in compliance with the qualification standards and the curriculum.”
<b>National qualification procedures (exams, tests, assessments)</b>	
S	Art. 32 defines who is defining qualification procedures. Implementation of final and graduation exam shall be defined by the curriculum on a national level.
W	According to Art. 5 it is not clear, how the CCIS will be involved in this duty. CCIS should have a single article which clarifies their role, duties and rights within the whole dual education. The law is still fragmented with regard to the role of CCIS.
O	Procedures regarding Art. 5 and Art. 32 should be consistent. If the roles and responsibilities of all institutions and involved bodies could be defined this would facilitate a consistency check. This point should be checked by the “Commission” (Art. 40).
T	Not clarifying those roles and responsibilities can lead to an exit of some partners.
<b>Defining the appropriate credential (certificate, diploma...)</b>	
S	Art. 32 mention that a “public document” will be issued after graduation.
W	
O	In accordance with principle 3, 4, 6 in Art. 3 the public document should <ul style="list-style-type: none"> <li>• be part of the education system and embedded in the framework of all the other credentials</li> <li>• give a signal to further/higher education (it should be mentioned to what higher level of education this credential allows free access or at least mention what kind of requirements must be fulfilled in order to progress to the next higher level of education</li> </ul>
T	Not having an attractive credential, which acts as a signal for entering the labour market and/or leads to progression routes in higher education no one will take those courses.
<b>Defining language policy for VET programmes</b>	
S	
W	The following article of the Serbian Constitution is not addressed in the law: <b>Constitution of Serbia; Article 10: Language and script</b> Serbian language and Cyrillic script shall be in official use in the Republic of Serbia. Official use of other languages and scripts shall be <b>regulated by the law</b> based on the Constitution. It should be clarified if at least for some occupations English should be mandatory or not.
O	Defining the language policy facilitates the development of curricula
T	Some of the occupational profile require English (e.g. IT, STEM-occupation, commercial /hospitality sector). If this is not regulated those occupation may not be very attractive for young adults.
<b>Quality control and accreditation of institutions and/or programmes</b>	
S	<ul style="list-style-type: none"> <li>• Art. 3 mentions “quality assurance” as a principle and that it should be implemented in all activities of dual education.</li> <li>• A lot of “coordination” shall be fulfilled by school “Work-based Learning (WBL) Coordinators (see Art. 2, paragraph 5, see also Art. 8, Art. 31).</li> </ul>
W	<ul style="list-style-type: none"> <li>• Some activities are operationalized by this law (see example in the strengths). However, the draft is not coherent with regard to the regulation density (why are only some activities describes and others not). This is not easy to understand from the employer point of view.</li> <li>• Quality of WBL coordinators is controlled (very detailed description). However, the law is not addressing how the quality of WBL coordinators is controlled</li> </ul>

	and if schools are quality controlled too. If this is regulated in another law it should be referenced to it.
O	Serbia should discuss whether an independent agency is responsible for quality control and accreditation as this is the standard in other countries.
T	Furthermore, it is not clear so far if companies accept that “coordinators from schools can check quality”. In contrary, so companies will not accept the dominant role of schools.
<b>Monitoring of apprenticeship market</b>	
S	
W	Art. 7 addresses to some extent how students can enrol in a programme. However, the article is kind of contradictory with regard to paragraph 1 and 2. The dual education system is basically based on an apprenticeship market, where students apply for a job as an apprentice. Apprenticeship offers by company are in line with their needs.
O	If Serbia would like to establish a dual VET system in line with the needs of the labour market and the preferences of the young adults it should consider to establish an apprenticeship market. This aspect should be analysed during the implementation phase. It is highly recommended to establish an apprenticeship market because that would give employers the right to choose apprentices.
T	
<b>Training of professionals in the VET sector</b>	
S	Art. 29 defines that “Instructors” (within a company) need to have a license which requires an education and an exam. Art. 29 defines minimal requirements for instructors, which is very good. It is also very good that CCIS defines the licence for instructors as this will be a pre-condition for the eligibility of training companies.
W	<ul style="list-style-type: none"> <li>• However, some parts may be regulated in a by-law because the density of this article is very high compared to others.</li> <li>• Besides “instructors” there are other “professionals” such as teachers at schools for theoretical and practical subjects, exam experts, career guidance and counsellors, school principals, and WBL coordinators at schools, who need to be prepared for their new role. The law is <i>not addressing minimal standards</i> for those professionals; nor does it define who will educate those professionals (which institution?).</li> </ul>
O	The law gives an opportunity to define all specific roles of the professionals within dual education and to define minimal standards. During the implementation process all aspects regarding the “professionals” should be analysed.
T	Not having minimal standards for ALL professionals produces the risk that employer will reject it because their instructors are the only ones who have to adapt themselves to the new regime.
<b>Collecting and maintaining national statistics</b>	
S	Art. 27 mentions that CCIS will establish a register of contracts on dual education.
W	<ul style="list-style-type: none"> <li>• However, there are other information which should be collected. There is no systematic information about the relevance of some data to control the dual education system.</li> <li>• Nothing is mention about collection data for monitoring purposes on a national level.</li> </ul>
O	During the implementation phase, the “Commission (Art. 39)” should analyse what aspect should be regulated in the law and what in by-laws. Furthermore, the Commission should elaborate a monitoring concept.
T	
<b>Permeability and progression routes within the whole education system</b>	
<b>Permeability throughout the education system</b>	
S	Art. 3 defines the principle of “equal conditions for access to dual education” or “mobility – access to various fields of work at the same level of education or towards higher level of education. Art. 32 defines that students can enter the next level of education in accordance with the law.



W	Such principles will not be applied if no further article clarifies how this principle could be realized and who is responsible for what.
O	“Mobility” and “equal access” are very important for the attractiveness of the dual education. These principles have to be defined clearly and the detailed information should be easily accessible. During the implementation phase this aspect should be clarified either with amendments of the law and/or in by-laws or within a publication for all citizen in Serbia.
T	
<b>Transparent access conditions and exit standards</b>	
S	Art. 3, paragraph 9 informs about the idea that permeability should be established.
W	See previous remarks. It is not clear to what higher level the “public document” leads. What kind of access conditions does the final exam regulate?
O	
T	
<b>Functional differentiation of programme offerings</b>	
S	
W	The law does not state anything about this function.
O	
T	
<b>Recognition of prior learning (RPL)</b>	
S	The law regulates the qualification standard and curriculum on a national level, which is a very good foundation to develop procedures of RPL.
W	The law does not state anything about this function.
O	Qualification standards would allow to account for RPL, when adults should be re-trained, or want to change their career ladder.
T	Serbia will miss the chance to improve access of adults to formal degree through RPL if the procedure and the responsibilities on the different political level are not clarified.
<b>System development and improvement</b>	
<b>Monitoring and research for VET</b>	
S	
W	The law does not state anything about this function.
O	Evidence-based approach would allow to develop the dual education system towards an efficient and effective one. The “Commission” in Art. 40 should analyse this aspect and make propositions for amendments.
T	Not having any research results about “What works and what does not work” produces exposure to opinion leaders.
<b>Support for disadvantaged groups and areas</b>	
S	Art. 7 is regulating that appropriate measures have to be applied to include disadvantaged groups.
W	
O	By-laws should regulate what measures are necessary in order to attain that goal.
T	
<b>Public campaigns to strengthen VET</b>	
S	
W	The law does not state anything about this function.
O	



T	
<b>Financing VET</b>	
<i>Direct financing and contributions to lower-level financing</i>	
S	
W	The whole chapter about who is financing what is missing in this law.
O	The “commission” (Art. 40) should analyse the financial flows and incentives carefully. It should launch a cost-benefit analysis for training and non-training companies to identify what works.
T	Without transparent incentives for companies it will be difficult to up-scale the dual VET in Serbia. Cost-benefit simulation could help to find the appropriate solution.

**Table 6:** SWOT analysis of the Serbian VET system and the new Law of Dual Education for the regional level

<b>Regional Governance</b>	
<i>Relevant coordination partners</i>	
S	
W	The partners on the regional level are not clearly defined by the law.
O	
T	
<b>Organizing and Maintaining Infrastructure and VET schools</b>	
<i>Coordinate VET school infrastructure vertically with local level</i>	
S	Art. 7 indicates that the school administration organizes a draft for student enrolment. This allows to concentrate VET programme types to villages according to comparative advantages
W	However, it remains unclear whether companies/employers will be willing to participate in such a plan. It is not clear how companies can select apprentices/students.
O	It would be an opportunity to rethink the process during the implementation phase. If the need of companies stands in the centre of the dual education initiative, then companies should have the right to choose the student (application process). That would require to install an apprenticeship market.
T	Due to high costs of certain VET school/training centres (e.g. in manufacturing) a concentration of VET schools in districts is required.
<i>Define languages for VET programmes in provincial VET Schools</i>	
S	According to Art. 29, instructors have to know the language of the national minority in which the curriculum and teaching program is realized.
W	
O	
T	
<i>Accreditation of local/regional VET schools and/or programmes</i>	
S	
W	The law does not state anything about this function.
O	
T	
<i>Career guidance and counselling agencies</i>	

S	Art. 8 is very good and describes career guidance.
W	Some new institutions are mentioned such as “professional associations”. It is not clear how they are related to CCIS.
O	
T	
<b>Implementing qualification standards, procedures and exams</b>	
S	
W	The law does not state anything about this function.
O	
T	
<b>Collecting and maintaining province-level statistics</b>	
S	
W	The law does not state anything about this function.
O	
T	
<b>Educational processes from acquisition of students to issuing certificates</b>	
<b>Career guidance and counselling offers through provincial agencies</b>	
S	
W	The law does not state anything about this function.
O	
T	
<b>Implementing preparation programmes (bridge courses)</b>	
S	
W	The law does not state anything about this function.
O	
T	
<b>Recognizing apprenticeship contracts</b>	
S	CCIS will approve certified companies.
W	However, it is not clear on which political / regional level this should happen. In order to improve partnerships between education authority and companies on a local level, the submission of the request should be done on a decentralized level. However, CCIS on a national level could approve the control activity of a regional unit.
O	During the implementation phase, the “Commission” (Art. 40 could clarify who is doing what and make a proposition for amendments of the dual education law or for the by-laws.
T	Art. 16: “when selecting the employers, a school is obliged to be governed by the best interest of students”. This is somewhat unilateral. It should be also on the “best interest of companies”.
<b>Supervision of apprenticeship training and VET schools</b>	
S	
W	It is not clear who is supervising schools and how this is related to quality assurance.
O	
T	

<i>Regional qualification procedures (exams, tests, assessments)</i>	
S	
W	It is not clear who is doing what.
O	
T	
<i>Issuing certificates</i>	
S	
W	It is not clear who is doing what.
O	
T	
<b>Promoting VET programmes</b>	
<i>Innovation and development projects in coordination with VET Schools</i>	
S	
W	The law does not state anything about this function.
O	
T	
<i>Public advertisement campaign</i>	
S	
W	The law does not state anything about this function.
O	
T	
<b>Financing VET</b>	
<i>VET school infrastructure</i>	
S	
W	See remarks above regarding the financial system.
O	
T	

**Table 7:** SWOT analysis of the Serbian VET system and the new Law of Dual Education for the local level

<b>Local Governance</b>	
<i>Relevant coordination partners</i>	
S	<ul style="list-style-type: none"> <li>Art. 11/12 describes the conditions for being a “certified employer”. Some of the terms are not defined (e.g. rulebook, safety measure, health at workplace). There is a high density of regulations, which are not coherent to the other article. Maybe this can be regulated in by-laws or in other laws with a link to this law.</li> <li>Art. 12 describes the verification process of a certified company, led by CCIS. However, it is not clear on which governance level (national, regional, local) this verification process takes place.</li> </ul>
W	To get a good relationship to companies on the local level, local governments need to take actions. It is not self-evident that companies want to train.

O	To strengthen the dual education system, it is very important that the local government/authorities are well connected vertically (e.g. with regional and national institutions). During the implementation process this should be analysed.
T	Without a clear governance (partnership) on a local level it will be difficult to convince companies to train.
<b>VET programme implementation process</b>	
<i>VET schools</i>	
S	
W	The law does not state anything about this function.
O	
T	
<i>VET programmes implementation (incl. work-based training)</i>	
S	Art. 9 makes clear who is doing what and that the “contract” regulates the relationship. It is very important and very good to refer to the national curriculum and qualification standard.
W	<ul style="list-style-type: none"> <li>• However, Art. 7/8 let it open, if the student has to pay something or if dual education is free of charge.</li> <li>• Art. 13-26 regulates in a very high density relationships on a local level. Please reflect if this could be done in a by-law.</li> <li>• Art. 34 explains what the financial support could be. → Again: without having clarity about the entire financial system it is very difficult to judge the appropriateness of this regulation.</li> </ul>
O	As the implementation of the dual VET programme is one of the most important activities, weaknesses should be overcome through a profound analysis during the implementation and through propositions for amendments.
T	
<b>Infrastructure in each village, city, municipality</b>	
<i>Data collection</i>	
S	Art. 12 stipulates that CCIS will establish and maintain a register with certified companies.
W	Nothing is mentioned about who should collect what kind of data and how it is transferred to the national authority.
O	
T	
<i>Career guidance and counselling in lower secondary education</i>	
S	Art. 8 defines career guidance and counselling and states that schools shall establish a career guidance and counselling team.
W	It is not clear why schools and not independent agencies should fulfil this task. Career guidance for dual VET needs a lot of knowledge about occupations and companies.
O	During the implementation phase the “Commission” should create a concept for career guidance and counselling.
T	
<b>Financing VET</b>	
<i>VET schools and RPL procedures and tests</i>	
S	
W	See remarks above about financing the system.
O	
T	

## 5. Limitations of the analysis

This short analysis did not allow to dive into some important topics such as financial flows, governance type and mode of the VET system, or cost-benefit of companies from training apprentices, as such analyses would require other investigations and involvement of different stakeholders.

Concerning **finance** the Serbian government should address the following questions:

- How is the finance of dual VET organized today?
- Shall the financing system be changed?
- What kind of governance (input- versus output-orientated approach) would Serbia like to establish?

Information on the Education-Employment-Linkage as well as on **cost-benefit of companies** would help Serbia to build and expand the dual VET system. The companies in particular must be convinced that it is worthwhile for them to train apprentices. Therefore, to identify the appropriate training approach in which companies have an incentive to train, so-called simulation studies with companies of different industry sectors could be performed before introducing new occupations/qualification profiles.

## 6. Conclusion and recommendations

Serbia is working very fast to introduce a dual vocational training system, supported by various development organizations and international experts. Individual pilot projects as well as the draft of the new Dual Education Act (version July 2017) are proof of this activities.

Based on the current information, the analysis of the Serbian education system and the Dual Education Act we have worked out short-term recommendations and long-term recommendations. The short-term measures are connected with the implementation of the law after the treatment in the Parliament and thought for the first three years of the implementation phase. The long-term measures are for the improvement of the entire dual VET system in Serbia.

### 6.1. Short-term recommendations

The Serbian government wants to introduce as soon as possible an attractive dual VET system in order to give the young generation a better perspective on the labour market while at the same time stimulating the national economy. However, as a matter of fact, experience shows that it takes decades to achieve such an ambitious goal. In most countries, expertise on managing the complex systemic context lacks. Furthermore, there are few experienced local experts available, who could lead the way in a reform for all stakeholders (including business sector). That is why each country has to start at an individual point to evaluate what works in the country and what needs to be improved while implementing the new approach.

The Serbian government has decided to start with a new law on dual education and thus to establish the legal framework within which dual VET programmes are to be established in cooperation with the business sector. Such an approach has the advantage that there are clear and uniform framework conditions for all stakeholders. The drawback is that there is still little experience on what works and what does not work in the Serbian context. Therefore, the transitional articles in the new law is of high importance, since it mandates a Commission to accompany and evaluate the implementation and to report on the progress realized within three years. The following recommendations relate in particular to these short-term tasks.

## Recommendation to the Ministry of Education in Serbia

- The Commission (Art. 40) of the law:
  - o should prepare by-laws and clarify processes, roles, rules and responsibilities of all relevant partners for the implementation
  - o should check the SWOT analysis of this report for insights regarding the development of by-laws, implementation goals and evaluation.
  - o should gather information about the power sharing between actors of the education and employment system along the educational process (e.g. Education-Employment-Linkage Index). A survey with experts is thus advisable, so that the Commission gets knowledge on how to support the implementation with additional information, dialogue and measures.
- Since the substantial commitment of companies is important, a cost-benefit simulation with selected companies prior to the introduction of new programmes should be done in close co-operation or under the CCIS lead. The advantage of having the CCIS in the lead is that they have the institutional contacts with the companies.
- Regular information campaigns from the Serbian government should inform the beneficiaries and stakeholders about the newest developments in the introduction of the new law, to receive systematic feedback from them, and to show them what the plans for the coming years are.

## Recommendation to the CCIS

- As the present report shows, there is still no full clarity on the role of CCIS in the implementation of the new law. Therefore, CCIS should make every effort to become a member of the Commission defined in Art. 40 of the law. One of the main points to clarify is the relation between CCIS industry associations and the sector councils (NVQF).
- After having clarified the role of CCIS on the national, regional and local levels and for the work in the Commission, the CCIS should assess which costs (personnel and other costs) are going to arise for the introduction of the law. Who will cover these costs?
- CCIS is closely connected with its member companies. Therefore, it is in its interest to take the lead for implementing a cost-benefit simulation study for their training companies. This is best done in close collaboration with a research institute.

## 6.2. Long-term recommendation for all stakeholders

During the first three years, the Commission (Article 40) will be very concerned with the operational implementation of the new business and with improvement processes. Nevertheless, it is advisable to think ahead into the future. Therefore, we recommend the stakeholders to establish a long-term strategy for the development of VET in Serbia already at an early stage. The following questions can be a guide (see also Section 3: Vision for a dual VET system in Serbia):

- How many apprentices should graduate by 2040 from the dual VET system?
- How can the system be improved through functional differentiation of the VET programmes from other programmes for those who fail?
- What are pre-defined progression routes that make the dual VET system attractive?
- In most countries, it is not enough to develop university programs at tertiary level. An economy (especially SME economy) also needs practical-oriented programs for those

who will not pursue an academic career. Such programmes are important to improve the attractiveness of dual VET programmes. In the existing systems, such programmes are always developed by industrial associations. The question therefore arises, whether Serbia – like Germany, Austria and Switzerland – would like to introduce a higher level of professional education and training (PET, this is a non-university tertiary level)?

- Does Serbia want to introduce an apprenticeship market in the medium term to create a sustainable dual VET system? Such a market guarantees that the supply and demand for well-educated apprentices is in line with each other. It also increases the efficiency of the system.
- How should the research on and monitoring of the VET system look like? How are appropriate programmes that contribute to an evidence-based development of the system launched?

## Reference list

- Barker, R., & Longman, C. (1992). *Case Method: Function and Process Modelling*. Addison Wesley.
- Clematide, B., Dahl, A., Vind, A., & Helms Joergensen, C. (28. February 2005). *Challenges for the Danish VET-System - on the path towards a future model*. Von Berufs- und Wirtschaftspädagogik: [http://www.bwpat.de/7eu/clematide\\_etal\\_dk\\_bwpat7.shtml](http://www.bwpat.de/7eu/clematide_etal_dk_bwpat7.shtml) abgerufen
- Eichmann, R. (1989). *Diskurs gesellschaftlicher Teilsysteme*. Wiesbaden: DUV.
- EP Nuffic. (2016). *Education system Serbia: Description of the Serbian education system and comparison with the Dutch system*. 1st edition, December 2016.
- EQAVET. (2016). *European Quality Assurance Reference Framework for VET*. Von <http://www.eqavet.eu/gns/policy-context/european-quality-assurance-reference-framework.aspx> (November 1, 2016). abgerufen
- ETF. (2013). *Mapping of VET educational policies and practices for social inclusion and social cohesion in the Western Balkans, Turkey and Israel. Country report: Serbia*. Torino.
- ETF. (2015). *Torino Process 2014: Serbia*. Torino.
- Eurydice. (2016). *Serbia: Overview*. Retrieved from <https://webgate.ec.europa.eu/fpfis/mwikis/eurydice/index.php/Serbia:Redirect> (August 19, 2016).
- GIZ. (2015). *Dual Vocational Education and Training in Serbia: Feasibility Study*. Belgrade.
- Klieme, E., Avenarius, H., Baethge, M., Döbert, H., Hetmeier, H.-W., Meister-Scheufelen, G., . . . Wolter, A. (2006). Grundkonzeption der Bildungsberichterstattung in Deutschland. *Zeitschrift für Erziehungswissenschaft. Bildungs- und Sozialberichterstattung*, 129-145.
- KOF Swiss Economic Institute. (2017). *KOF Education System Factbook Serbia*. Zurich: ETH Zurich.
- Luhmann, N. (1994). *Soziologische Aufklärung 4. Beiträge zur funktionalen Differenzierung der Gesellschaft*. (2. Ausg.). Opladen: Westdt. Verlag.
- NEC. (2009a). *About Us*. Von <http://www.nps.gov.rs/en/nps/o-nama/> (October 12, 2016). abgerufen
- NEC. (2009b). *Members*. Von <http://www.nps.gov.rs/en/nps/clanovi/> (October 12, 2016). abgerufen
- Rauner, F., & Wittig, W. (2009). *Steuerung der beruflichen Bildung im internationalen Vergleich*. Gütersloh: Verlag Bertelsmann Stiftung.
- Renold, U. (2016). Verschiedene Gesichter eines Begriffs. In I. Swietlik, *2016 Almanach Entwicklungspolitik. Mit Berufsbildung gegen Armut* (S. 39-56). Luzern: Caritas Schweiz.
- Renold, U., & Caves, K. (2017). *Constitutional Reform and its Impact on TVET Governance in Nepal. A report in support of developing understanding and finding the way forward for federalizing the TVET sector in Nepal*. Zurich: KOF Studies 89.



- Renold, U., Bolli, T., Caves, K., Bürgi, J., Egg, M., Kemper, J., & Rageth, L. (2016). *Feasibility Study for a Curriculum Comparison in Vocational Education and Training. Intermediary Report II: Education-Employment Linkage Index*. Zurich: ETH Zurich.
- Renold, U., Bolli, T., Caves, K., Rageth, L., Agarwal, V., & Pusterla, F. (2015). *Feasibility Study for a Curriculum Comparison in Vocational Education and Training*. Zurich: KOF Studies 70.
- Renold, U., Bolli, T., Egg, M., & Pusterla, F. (2014). *On the Multiple Dimensions of Youth Labour Markets*. Zurich: ETH Zurich.
- Robinsohn, S. B. (1967). *Bildungsreform als Revision des Curriculum*. Stuttgart.
- UNESCO. (2011). *World Data on Education: Serbia*.

### Final Version of Serbian Law on Dual Education as of October 2017

#### LAW ON DUAL EDUCATION

##### I BASIC PROVISIONS

###### Scope of the Law

###### Article 1

The present Law shall govern the content and modality of dual education delivery, mutual rights and obligations of students, parents or other legal representatives, schools and employers, in-kind and financial support to students, as well as other matters of relevance to dual education.

The provisions of this Law shall apply to secondary vocational education, for qualification profiles with a duration of three or four years, and specialist education in conformity with the law.

The terms used herein in the masculine grammatical gender shall denote both male and female persons referred to.

###### Definitions of terms

###### Article 2

For the purposes of this Law, the terms used herein shall have the following meanings:

1) “dual education” is a vocational secondary education system delivery model, in which knowledge, skills, capabilities and attitudes (hereinafter: competences) are acquired, enhanced and developed through school-based theoretical instruction and practical exercises and work-based learning at an employer, in accordance with qualification standards and curricula;

2) “employer” is a legal entity or natural person fulfilling the prescribed requirements to organise work-based learning for students under the dual education system, and whose field of economic activity enables the delivery of the contents specified in the relevant curriculum;

3) “work-based learning” is an organised process in which students acquire the competences for performing a specific occupation or a group of occupations, under the guidance and supervision of instructors and coordinator of work-based learning in a real-life work environment at an employer;

4) “instructor” is a person employed with an employer, responsible for ensuring that students acquire competences prescribed by the qualification standard and the curriculum through work-based learning;

5) “work-based learning coordinator” is a person employed with a secondary vocational school, or a teacher of practical instruction, whose responsibility is to plan, monitor, organise and evaluate the delivery of work-based learning at an employer, in collaboration with the instructor;

6) “work-based learning delivery plan” provides a description of the activities, location and timetable of work-based learning delivery and it is developed and adopted through cooperation between a school and an employer.

## **Dual education principles**

### Article 3

Dual education shall be based on the obligation of all stakeholders to be governed by the best interest of students, in accordance with the following principles:

- 1) school and employer partnership – collaboration and clear division of responsibilities in the delivery of a high-quality work-based learning process;
- 2) establishment of social partnership at the local level – involvement of all stakeholders in the process of planning, delivering and monitoring the effects of dual education through the set institutional framework;
- 3) professionalism – creation of legal relations between students, employers and schools in the education process;
- 4) ethics – respecting the personality and dignity of students and pursuing the goals of education;
- 5) quality assurance – coordination and setting of standards at all levels and monitoring of dual education efficiency;
- 6) career guidance and employability – development of career management skills and ensuring better employment opportunities;
- 7) accessibility – high-quality access to dual education for all on equal terms;
- 8) relevance – consistency with the needs of employers and the labour market;
- 9) permeability – access to various work sectors at the same education level, as well as to higher education levels;
- 10) lifelong learning – enabling education and development throughout a person's life in all aspects of life and work;
- 11) right to choice – the freedom to choose one's occupation and qualification profile within the specified criteria;
- 12) equal opportunities – ensuring equal conditions for receiving education with no discrimination on the grounds of sex, racial, national, cultural, ethnic and religious background, language, sexual orientation, place of residence, economic status, disability and other personal characteristics.

Institutional partnership and cooperation between the ministry competent for education (hereinafter referred to as Ministry), Chamber of Commerce and Industry of Serbia and Institute for Improvement of Education is established in order to implement dual education on a national level.

## **Dual education aims**

### Article 4

Dual education shall aim to:

- 1) provide the conditions for acquiring, upgrading and developing one's competences in accordance with the labour market needs;
- 2) contribute to enhancing the competitiveness of the Serbian economy;
- 3) ensure the conditions for employment after finishing education;
- 4) provide the conditions for further education and lifelong learning;
- 5) develop entrepreneurship, innovativeness, creativity, professional and career advancement of every individual;
- 6) provide the conditions for personal, economic and overall social development;

- 7) develop teamwork ability and a sense of personal accountability at work;
- 8) raise awareness of the significance of health and safety, including occupational health and safety;
- 9) develop the ability of self-evaluation and expression of one's opinion, as well as of independent decision-making;
- 10) respecting mutual rights and obligations of students and employers.

## II DELIVERY OF DUAL EDUCATION

### Dual education curricula

#### Article 5

The basis for developing dual education curricula shall be qualification standards, which shall be prescribed by a sector council for a specific work sector, in compliance with the law governing the national qualifications framework.

Based on the qualification standard referred to in para. 1 of this Article, the Institute for the Improvement of Education shall create a proposal for a dual education curriculum, and shall submit it to the Ministry.

A dual education curriculum shall include the qualification standard, compulsory general-education subjects, compulsory vocational subjects and elective subjects.

The compulsory vocational subjects shall include subjects delivered in the form of work-based learning.

Learning outcomes stipulated for the subjects delivered in the form of work-based learning shall be the basis for developing the work-based learning delivery plan and shall form part of the school programme.

After having obtained the opinion of the National Education Council and the Council for Vocational and Adult Education, the Minister competent for education affairs (hereinafter: the Minister) shall adopt the dual education curriculum.

Standard of qualifications and curricula shall be updated at least every 5 years or earlier if it is required by the needs of economy and technological development.

### Scope, period and location of work-based learning

#### Article 6

Work-based learning shall account for at least 20%, but no more than 80% of the total number of vocational subjects classes, in compliance with the relevant curriculum.

Work-based learning shall be organised during the school year in keeping with the school calendar, between 8am and 8pm, with a maximum duration of six hours per day, or 30 hours per week, in compliance with the curriculum.

Work-based learning shall be organised entirely at one or more employers, in compliance with the curriculum.

By way of derogation from para. 3 of this Article, part of work-based learning may be organised at a school where this is provided for in the curriculum, or if work-based learning cannot be delivered in its entirety at an employer.

The number of work-based learning classes organised at schools shall not exceed 25% of the total number of work-based learning classes envisaged in the curriculum.

## **Student enrolment**

### **Article 7**

The breakdown of secondary vocational school student enrolment quotas by sectors and qualification profiles in dual education shall be determined in accordance with the needs of the economy and students' further education possibilities.

In cooperation with the competent body of the autonomous province, school administrations shall develop municipal- or city-level proposals, as appropriate, for secondary school student enrolment plans.

In the development of the plans referred to in para. 2 of this Article, conditions for inclusion of students with developmental disabilities and from vulnerable groups shall be provided.

The proposals for enrolment plans referred to in para. 2 of this Article shall be developed with the involvement of employers, the organisation competent for employment affairs in the respective local government units, the Chamber of Commerce and Industry of Serbia and other stakeholders, in conformity with the law.

During the enrolment of students in secondary schools, students shall be assigned to work-based learning through cooperation between schools, employers and students. The manner of assigning students to work-based learning shall be prescribed by the minister in cooperation with the Chamber.

## **Career guidance and counselling of students in dual education**

### **Article 8**

Schools shall stimulate and monitor students' career development.

With a view to enhancing career management skills and making prudent and responsible decisions about one's professional development, a school shall establish a career guidance and counselling team (hereinafter: the team).

The team may include representatives of school staff, professional associations, local government units and employers, without any compensation. The meetings may attend representatives of student parliament, parents or other legal representatives.

The team shall cooperate with primary schools, especially in the process of planning students' secondary school enrolment.

Detailed conditions on operation, activities and composition of the team shall be prescribed by the Minister.

## **Responsibilities of students, schools and employers**

### **Article 9**

In dual education, students shall attend class at schools and pursue work-based learning at employers, in accordance with qualification standards and curricula.

Schools shall be responsible for delivering of curriculum, in its entirety.

Schools shall deliver the part of the dual education curriculum that refers to theoretical instruction and practical exercises and shall monitor, in the cooperation with employers the delivery of the part of the curriculum that refers to work-based learning.

Employers shall deliver the part of the dual education curriculum that refers to work-based learning.

Employers shall be responsible for systematic and high-quality delivery of work-based learning in accordance with qualification standards and curricula.

Mutual relations between schools and employers shall be regulated by contract, in conformity herewith.

### **Protection of students' rights**

#### Article 10

The protection of students' rights in dual education shall be provided in conformity with the law governing the foundations of the education system, the law governing secondary education, the law governing labour and occupational safety and other specific laws.

During work-based learning at employers, discrimination of students is prohibited, physical, psychological, social, sexual, digital and any other violence, abuse and neglect of pupils, in accordance with the law governing the basics of the education system and other laws.

### **Employer eligibility requirements for delivery of work-based learning**

#### Article 11

To be eligible for the delivery of work-based learning, employers shall:

1) be engaged in economic activities that enable the delivery of work-based learning content specified in the relevant curriculum;

2) have adequate space, equipment and instruments for work, in accordance with the rule-book specifying the detailed requirements in terms of space, equipment and teaching aids for the qualification profile concerned;

3) have a sufficient number of licensed instructors, in accordance with the curriculum;

4) ensure the implementation of occupational safety and health measures, in compliance with the law;

5) not be the subject of bankruptcy proceedings or winding-up;

6) fulfil the condition that their responsible officers and instructors have not been finally convicted of crimes for which they received an unconditional sentence of at least three months of imprisonment, or of crimes of domestic violence, abduction of minors, neglect and abuse of minors or incest, giving or accepting bribe; crimes from the group of crimes against sexual freedom, against legal transactions, and against humanity and other values protected by international law, irrespective of the imposed penalty; misdemeanours in the field of labour relations in the past five years; or found to have committed discriminatory conduct, in compliance with the law.

7) not be finally convicted of crimes prescribed by law regulating prevention of workplace abuse.

### **Verification of eligibility for the delivery of work-based learning**

#### Article 12

The procedure for verifying the fulfilment of the requirements stipulated in Article 11 hereof

shall be conducted by the Chamber of Commerce and Industry of Serbia.

The Chamber of Commerce and Industry of Serbia shall establish the Committee for Verification of Fulfilment of Requirements for Delivery of Work-Based Learning (hereinafter: the Committee) for the relevant qualification profile or group of qualification profiles.

The Committee consisting of an uneven number of members shall include, apart from an expert in specific field of work, a secondary vocational school teacher, a labour inspector and a representative of the Ministry.

The Committee members shall have no compensation for their work.

Employers shall submit applications for verification of the fulfilment of requirements specified in Article 11 hereof (hereinafter: Application) to the Chamber of Commerce and Industry of Serbia not later than 30 September of the calendar year preceding the school year in which they are to commence the delivery of work-based learning.

At the Committee's proposal, the Chamber of Commerce and Industry of Serbia shall issue the Certificate of Fulfilled Requirements for Delivering Work-Based Learning (hereinafter: the Certificate) to an employer that fulfils all stipulated requirements within 15 days of the date of the Committee's proposal receipt.

The Chamber of Commerce and Industry of Serbia shall issue the Decision verifying that employers do not fulfil requirements for delivery of work-based learning.

At the Committee's proposal, the Certificate shall be revoked if the Chamber of Commerce and Industry of Serbia establishes, by a control procedure, that the employer concerned no longer fulfils the requirements stipulated in Article 11 hereof.

The Chamber of Commerce and Industry of Serbia shall maintain and regularly update the registry of employers to which the Certificates has been issued and whose Certificates have been revoked.

The registry stipulated in para. 9 hereof shall be maintained as a single electronic database, and the data from the registry shall be published on the official website of the Chamber of Commerce and Industry of Serbia.

The registry stipulated in para. 9 hereof shall include following data: reference number of the Certificate, employers' name and identification number, first name, family name and function of the person in charge, including number of and date of the Decision on the termination of fulfilling the requirements for delivery of work-based learning;

The costs incurred for issuing the Certificate, maintaining and entry in the registry stipulated in para. 9 hereof shall be covered by the Chamber of Commerce and Industry of Serbia.

The organisation, composition and operation of the Committee shall be regulated in detail by a legal instrument of the Chamber of Commerce and Industry of Serbia.

The assignments to validate fulfillment of requirements for delivery of work-based learning, issue documents stipulated in Articles 6 and 7 hereof, and maintain the registry stipulated in para. 9 hereof, the Chamber of Commerce and Industry of Serbia shall perform as delegated assignments.

### III

## CONTRACTS IN DUAL EDUCATION

### Article 13

Mutual relations of schools, employers and students, or parents or other legal representatives of students, as appropriate, in dual education shall be regulated by contracts.

Mutual relations between schools and employers shall be regulated by dual education contracts, whereas mutual relations between employers and students, or parents or other legal representatives of students, as appropriate, shall be regulated by work-based learning contracts.

## **1. DUAL EDUCATION CONTRACT**

### **Contract form**

#### Article 14

A dual education contract shall be concluded by and between a school and an employer, in writing, for a minimum period of three or four years, as appropriate, in accordance with the relevant curriculum.

### **Contract contents**

#### Article 15

Dual education contracts shall include the following mandatory elements:

- 1) employer identification data, including the reference number of the Certificate referred to in Article 12 hereof;
- 2) school identification data;
- 3) qualification profile that is the subject of the contract;
- 4) employer's obligation to deliver work-based learning at its own cost and responsibility;
- 5) school's obligation regarding the delivery of work-based learning;
- 6) employer's obligation regarding the delivery of work-based learning
- 7) work-based learning delivery plan and programme;
- 8) location and timetable of work-based learning delivery;
- 9) maximum number of students referred by the school to work-based learning;
- 10) number of licensed instructors provided by the employer for these purposes;
- 11) term of validity of the contract;
- 12) grounds for contract expiry and termination;
- 13) dispute settlement modality;
- 14) date and signatures of the contracting parties.

### **Conclusion of dual education contracts**

#### Article 16

A school may conclude a dual education contract with one or more employers holding the Certificate, with a view to ensuring the conditions for the delivery of all work-based learning contents specified in the relevant curriculum.

When selecting the employers, a school is obliged to be governed by the best interest of students.

An employer, fulfilling the requirements stipulated in Article 11 hereof, may conclude a dual education contract with one or more schools, subject to the requirements stipulated in Article 11 hereof.

Schools shall notify the Ministry of the concluded contracts referred to in para.1 of this Article within eight days of contract conclusion.



## **Publication on the official website**

### Article 17

Within 15 days of dual education contract conclusion, the school and the Chamber of Commerce and Industry of Serbia shall publish basic information about the curriculum other information of relevance to the delivery of work-based learning.

## **Contract termination by employer**

### Article 18

An employer shall terminate the dual education contract in the following cases:

- 1) if the school's operation is banned or if it is closed down in conformity with the law;
- 2) if the school no longer fulfils the prescribed requirements for the qualification profile in which the employer delivers work-based learning;
- 3) if the school fails to perform the obligations under the dual education contract;
- 4) in the event of unforeseen technological, economic or organisational changes at employer's preventing, hampering or seriously altering the conduct of their economic activity.

## **Contract termination by school**

### Article 19

A school shall terminate the dual education contract in the following cases:

- 1) if the employer's Certificate referred to in Article 12 hereof is revoked;
- 2) if the employer fails to perform the obligations under the dual education contract.
- 3) the employer violates the prohibition referred to in Article 10 of this Law;
- 4) The employer violates the rights of pupils prescribed by law.

The school is obliged to inform the Ministry of termination and reasons for termination of the contract on dual education without delay.

## **Consequences of contract termination**

### Article 20

If a dual education contract is terminated on the grounds specified in Article 18, para. 1, points 1), 2) and 3) hereof, the continuation of education shall be provided by another school designated by the Ministry in agreement with the employer.

If a dual education contract is terminated on the grounds specified in Article 18, para. 1, point 4) hereof, work-based learning shall be provided for the students by the school at another employer with which it has concluded a dual education contract.

If a dual education contract is terminated on the grounds specified in Article 19 hereof, the school, with the support of the Ministry, the local government unit and the Chamber of Commerce and Industry of Serbia, shall arrange for work-based learning to be delivered at another employer with which the school shall conclude a dual education contract.

## **2. WORK-BASED LEARNING CONTRACT**

### **Contract form**

#### Article 21

A work-based learning contract shall be concluded by and between an employer and a parent or other legal representative of the student, in writing.

The work-based learning contract shall be concluded at the latest by the beginning of the school year in which work-based learning delivery is to start.

The employer is obliged to keep the records of concluded contracts stipulated in para. 1 hereof, in accordance with the law.

### **Contract contents**

#### Article 22

Work-based learning contracts shall include the following mandatory elements:

- 1) employer identification data;
- 2) first name, family name and home address of the student;
- 3) first name, family name and home address of the parent or other legal representative of the student;
- 4) identification data of the school attended by the student;
- 5) title of the qualification profile;
- 6) proof of fulfilment of the health requirements prescribed for the occupation concerned;
- 7) employer's obligation to organise and deliver work-based learning for the student in accordance with the curriculum;
- 8) time and location of work-based learning delivery;
- 9) student's obligation to attend work-based learning regularly;
- 10) student's obligation to adhere to employer's internal instruments ~~and work discipline~~; regarding the time a student is obliged to spend in the company, learning process, and student's security;
- 11) in-kind support to the student, in conformity with Article 33 hereof;
- 12) financial support to the student, in conformity with Article 34 hereof ;
- 13) term of validity of the contract;
- 14) grounds for contract expiry and termination;
- 15) the way of resolving possible disputes
- 16) date and signatures of contracting parties.

The work-based learning delivery plan shall form an integral part of the contract.

## Article 23

A student, or a parent or other legal representative may conclude a work-based learning contract with multiple employers with which the school has concluded dual education contracts, if this is necessary for the delivery of the curriculum.

### **Contract termination by employer**

## Article 24

An employer shall terminate the work-based learning contract if the student concerned:

- 1) loses the status of a student;
- 2) breaches the obligations under the work-based learning contract;
- 3) permanently loses the health capacity to perform the occupation in which he/she is receiving training.

### **Contract termination by parent or other legal representative**

## Article 25

A parent or other legal representative of a student may terminate the work-based learning contract if:

- 1) the student loses the status of a student in the school or decides to change the qualification profile in which he/she is receiving training;
- 2) the student permanently loses the health capacity to perform the occupation in which he/she is receiving training;
- 3) the employer fails to fulfil the obligations under the work-based learning contract;
- 4) the employer's Certificate referred to in Article 12 para. 8 hereof is revoked.
- 5) the employer violates the prohibition referred to in Article 10 of this Law;
- 6) The employer violates the rights of pupils prescribed by law.

### **Consequences of contract termination**

## Article 26

If a work-based learning contract is terminated on the grounds specified in Article 25, para. 1, point 3), the school shall arrange work-based learning for the student in the same qualification profile at another employer with which the school has concluded a dual education contract.

After contract termination referred to in para. 1 of this Article, the student, or a parent or other legal representative of the student, and the employer shall conclude a contract on work-based learning at another employer with which the school has concluded a dual education contract.

The school and the employer shall notify the Ministry and the Chamber of Commerce and Industry of Serbia, respectively, of contract termination referred to in para. 1 of this Article and of the concluded contracts referred to in para. 2 of this Article, no later than eight days of contract conclusion.

If the school has not concluded a dual education contract with another employer referred to in para. 2 of this Article, the school shall provide the conditions for continuation of work-based

learning in the relevant qualification profile within 15 days, in collaboration with the Ministry and the Chamber of Commerce and Industry of Serbia.

#### IV REGISTRY OF CONTRACTS

##### **Contract registry establishment and maintenance**

##### Article 27

The registry of dual education contracts shall be established and maintained by the Chamber of Commerce and Industry of Serbia,

The following data shall be entered in the registry referred to in para. 1 of this Article:

- 1) contract reference number;
- 2) name and address of the school;
- 3) name and address of the employer;
- 4) number of students for whom the employer is to organise work-based learning;
- 5) address of the location where work-based learning is delivered;
- 6) date and time of contract conclusion;
- 7) work-based learning start date.

The registry referred to in para. 1 of this Article shall be maintained as a single electronic database.

The data referred to in para 2 of this Article shall be publicly available and published on the official website of the Chamber of Commerce and Industry of Serbia.

##### **Entry in the registry**

##### Article 28

The copy of the contract referred to in para. 1 hereof. An employer shall submit the dual education contract to the Chamber of Commerce and Industry of Serbia within eight days of contract conclusion in order to apply for entry in the registry referred to in Article 27 para. 1 hereof.

The copy of the contract referred to in para. 1 hereof, an employer may submit in writing or electronically.

#### V INSTRUCTOR

##### **Instructor**

##### Article 29

An instructor shall be a person who:

- 1) is employed with the employer, or conducts economic activity in a self-employed capacity;

- 2) has at least three years' work experience in the relevant occupation or group of occupations in which the student is receiving training in dual education;
- 3) has at least the same education attainment level as the qualification profile pursued by the student;
- 4) knows the language of the national minority in which the curriculum and teaching program is realized;
- 5) has completed instructor training and holds a certificate of having passed the instructor licence examination (hereinafter: licence).

Exempt from the para 1. of this Article instructor is a person with basic pedagogical and didactic knowledge and skills and holds a valid licence issued by national or international regulatory bodies in the same field.

Instructors, in cooperation with work-based learning coordinators, shall deliver, guide and supervise work-based learning, under the conditions and in the manner ensuring occupational safety and health, in conformity with the law.

In the process of work-based learning assessment, instructors shall cooperate with work-based learning coordinators.

The number of students which are in responsibility of one instructor is regulated by curriculum for each occupation.

### **Instructor training and licence**

#### Article 30

Instructor training shall be delivered by the Chamber of Commerce and Industry of Serbia.

The training referred to in para. 1 of this Article shall last for 40 hours and shall include the basics of didactic teaching knowledge and skills.

Following the completion of the training referred to in para. 1 of this Article, the person concerned shall take the instructor examination.

The Chamber of Commerce and Industry of Serbia shall establish the Examination Board and organise instructor examinations.

The Board referred to in para 5 hereof shall include apart from an expert in the specific field at least one representative proposed by the Ministry and ~~one representative~~ of the Institute for the Improvement of Education.

The Board members referred to in para 6 hereof shall receive no compensation for their work.

The licence and registry of issued licences shall include: reference number of a licence, first name, second name and occupation of the person who has passed the instructor examination, and the name of the employer where the instructor is employed.

The costs of issuing the licence and maintaining the registry of issued licences shall be covered by the Chamber of Commerce and Industry of Serbia.

The level of costs of training and taking the instructor examination shall be regulated by a legal instrument of the Chamber of Commerce and Industry of Serbia. .

The costs of of training and taking the instructor examination shall be covered by an employer.

The assignments to organise the examination, issue the licence and keep records of issued instructor the Chamber of Commerce and Industry of Serbia shall perform as delegated assignments.

The training programme, detailed conditions and other matters relevant to taking the instructor examination shall be prescribed by the Minister, at the proposal of the Institute for the Improvement of Education.

## VI

### DUAL EDUCATION ASSESSMENT AND EXAMINATIONS

#### Student assessment

##### Article 31

Instructors shall continually monitor students' progress and, in cooperation with work-based learning coordinators, with a view to acquire competences prescribed by qualification standard.

The assessment of students shall be done assess students' achievement of the prescribed outcomes, in accordance with the curriculum, the law and the rulebook regulating student assessment in secondary education in more detail.

#### Final and school-leaving examinations

##### Article 32

The content of the final or school-leaving examinations shall be stipulated in the curriculum.

The final or school-leaving examinations shall also verify the acquired competences in accordance with the qualification standard.

In the verification of competences acquired through work-based learning, the participation of employers' qualified representatives nominated by the Chamber of Commerce and Industry of Serbia is mandatory without any compensation.

The employers' representatives referred to in para 3 of this Article shall be nominated by the Chamber of Commerce and Industry of Serbia.

Upon passing the final or school-leaving examination, a student shall receive an official document, in conformity with the law.

Student can enter the next level of education in accordance with the law.

A diploma supplement issued to a student who has passed the final or school-leaving examination shall contain the data on the scope of completed work-based learning and the list of employers where work-based learning was delivered.

## VII

### IN-KIND AND FINANCIAL SUPPORT TO STUDENTS

#### In-kind support to students

##### Article 33

Employers shall provide the following support to students pursuing work-based learning:

- 1) personal occupational protective means and equipment;
- 2) reimbursement of the actual cost of transportation between the school and the location of work-based learning and vice versa, up to the amount of the public transport fare, unless the employer has made its own transportation arrangements;
- 3) reimbursement of the cost of meals, in conformity with the employer's internal instrument;
- 4) insurance against injury during work-based learning at the employer.

Employers may also cover the costs of students' accommodation and meals at a hall of residence.

### **Financial support to students**

#### Article 34

Students pursuing work-based learning shall be entitled to a compensation for work-based learning.

Compensation for work-based learning shall be paid once per month, at the latest by the end of the current month for the preceding month, per hour spent in work-based learning, in the net amount not lower than 70% of the minimum wage set in conformity with the law.

The compensation referred to in para. 2 of this Article shall be borne by employers.

## **VIII OVERSIGHT**

### **Inspections**

#### Article 35

The oversight of the enforcement of this Law shall be conducted by the Ministry.

The inspection oversight shall be conducted by the Ministry through education inspection.

The oversight concerning working conditions and occupational safety at the employer—shall be conducted by the ministry competent for labour affairs through the agency of the labour inspectorate.

The oversight of the assignments delegated by this law to the Chamber of Commerce and Industry of Serbia shall be conducted by the Ministry.

## **IX PENALTY PROVISIONS**

#### Article 36

A school shall be fined between RSD 50,000 and RSD 100,000 for an infraction if it fails to notify the Ministry of contract termination referred to in Article 26, para. 1 hereof, within the time limit specified in Article 26, para. 3 hereof.

For the infraction specified in this Article, a fine of RSD 5,000 to RSD 50,000 shall also be levied on the principal or responsible officer of the school.

#### Article 37

An employer shall be fined between RSD 50,000 and RSD 100,000 for an infraction if:

1) delivers work-based learning contrary to Article 6 para. 2 hereof;

- 2) does not provide personal occupational protective means and equipment as referred in Article 33 Item 1) hereof;
- 3) does not reimburse the actual cost of transportation between the school and the location of work-based learning and vice versa, as referred in Article 33 Item 2) hereof;
- 4) does not reimburse the cost of meals, as referred in Article 33 Item 3) hereof;
- 5) does not provide insurance as referred in Article 33 Item 4) hereof;
- 6) does not provide compensation for work-based learning as referred in Article 34 para 2 hereof.

For the infraction specified in this Article, a fine of RSD 5,000 to RSD 50,000 shall also be levied on the responsible officer of the employer.

## **X TRANSITIONAL AND FINAL PROVISIONS**

### Article 38

The bylaws for the implementation of this Law shall be adopted by the Minister within six months of the entry of this Law into force.

The act referred to in Article 12 para 13 and Article 30 para 11 hereof the Chamber of Commerce and Industry of Serbia shall adopt within three months upon the entry of this Law into force.

Until the law governing the national qualifications framework becomes applicable, the qualification standards shall be set in conformity with the law governing the foundations of the education system except from the part which refers to description of work prescribed by the Chamber.

### Article 39

A person that is employed with the employer or conducts economic activity in a self-employed capacity, and who has participated until the entry of this Law into force in the delivery of practical teaching in secondary vocational education in accordance with the relevant curricula is entitled to apply for the instructor licence issued by the Chamber of Commerce and Industry of Serbia

### Article 40

The Government shall establish the Commission for the development and implementation of dual education within 60 days of the entry of this Law into force, with the aim to implement and improve dual education and evaluate results achieved in a three-year period.

### Article 41

This Law shall enter into force on the eighth day following its publication in the *Official Gazette of the Republic of Serbia*, and shall become applicable as of the school year 2019/2020.



#### Article 42

The Government shall establish the Commission for the development and implementation of dual education within 60 days of the entry of this Law into force, with the aim to implement and improve dual education and evaluate results achieved in a three-year period.

#### Article 43

This Law shall enter into force on the eighth day following its publication in the *Official Gazette of the Republic of Serbia*, and shall become applicable as of the school year 2019/2020.