Inventory & Analysis
Of existing qualifications
For inclusion in the NQF

Republic of Serbia

Final Report

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Acknowledgements

With the establishment of the NQF Working Group at the end of 2014, the Ministry of Education, Science and Technological Development of Serbia has committed to develop and implement an inclusive, unified NQFS and reference the NQFS to the EQF. The unified NQFS will be an instrument that classifies relevant qualifications to improve transparency and trust in qualifications among end-users. The NQF WG prepares proposals, which will be submitted for consultation to stakeholders and the wider public. Among others, decisions have to be made about which qualifications should be included in the NQFS and how to align qualifications to NQFS levels. This requires a good overview of the qualifications that currently exist in Serbia and an insight in the quality of these qualifications.

ETF has supported the work of the NQF WG by providing expertise through workshops for the members of the NQF WG. The inventory and analyses of existing qualifications[1] in Serbia is part of the ETF support to the NQF WG.

This report describes the results of the inventory & analysis of existing qualifications in Serbia. The inventory presents a comprehensive set of data of active qualifications in secondary VET, Post-secondary VET, Higher Education and non-formal qualifications. The resulting excel worksheet is an integral part of this report. The analysis has two parts. The first part concerns a comparison of learning outcomes of a selected sample of qualifications with NQFS level descriptors to find whether there is an objective basis for allocation of qualifications to NQFS levels. The second part is an analysis of main features related to the quality of qualifications (relevance of the qualification for the labour market, involvement of labour market actors in different stages of the qualification process and institutional setting).

The comprehensive inventory of qualifications and the analysis of a selected sample of qualifications required substantial efforts to gather and analyse the necessary documentation. ETF expresses sincere gratitude to the national institutions for their cooperation at the study, in particular the Ministry of Education, Science and Technological Development and the members of the NQF WG.

ETF is particularly grateful to Daniela Jadrijevic Mladar, the expert who carried out this study, completed this report and the annexes. The inventory and analysis of existing qualifications in Serbia could be completed thanks to her commitment and relentless efforts to encounter and clarify all practical and conceptual issues. We thank Daniela for the valuable work done in analysing the vast collected documentation.

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[1] ETF developed and tested the methodology and tools for the inventory and analyses first in the former Yugoslav Republic of Macedonia, in 2014, in the process of referencing its NQF to the European Qualifications Framework (EQF). Early 2016 FYROM's referencing report was approved by the EQF Advisory Group.

Executive Summary

The inventory & analysis of existing qualifications in Serbia was executed to support the work of the NQF Working Group. The inventory provides an extensive set of data on 1557 active qualifications, in secondary VET, Post-secondary VET, Higher Education and non-formal qualifications. An in-depth analysis of the content and of the quality of qualifications was executed for a selected sample of 28 qualifications.

The inventory & analysis was executed by extensive desk research - collecting and analysing a broad set of legal documents[2].- supplemented with meetings with relevant stakeholders. The methodology and tools for both inventory & analysis were provided by the European Training Foundation (ETF).

The inventory includes 1558 active[3] qualifications, 277 secondary VET, 197 post-secondary VET, 895 HE titles/qualifications and 189 non-formal qualifications. For the purpose of this inventory and analysis, a more detailed classification of qualifications was made defining 13 different groups: 1. VET level 3; 2. VET LO 3; 3. VET level 4; 4. VET LO 4; 5. Post-secondary VET; 6. Non-formal; 7. HE Bachelor BAS; 8. HE Bachelor BPS; 9. HE Bachelor with Honours; 10. HE BPS + Specialisation; 11. HE Master; 12. HE Master + Specialisation; 13. HE PHD.

The inventory is a comprehensive and analytical tool, structured in 26 categories (columns). The categories include the 14 proposed elements for the Qualification Standard (QS). All categories are explained in chapter 1 of this report under methodology and tools. According to the data in the inventory, only 68 qualifications meet all elements of the qualification standard[4]; 23 of these are reformed VET 3 qualifications, 45 are reformed VET 4 qualifications. These reformed VET qualifications are based on learning outcomes.

Not all categories could be filled in for all qualifications. Some categories of data are not yet available such as the qualification code and the qualification sector. These will be defined with the adoption of the NQF and related legislation. A complicating factor is that data are scattered across different institutions, are often not publicly accessible, and the methodology for the collection of data differs. The inventory uses a classification of qualification per economic sector based on Unique Nomenclature of Occupation. The Nomenclature classifies all occupations in 19 economic sectors. The data on the link between qualifications and ISCO code can be added when the National Classification of Occupations and related documents have been adopted.

The issue of qualification title/name is settled in secondary VET but in HE it needs to be discussed and agreed. What constitutes the qualification in HE and its name (title of diploma or name of the accredited study programme) needs to be decided and agreed with all relevant stakeholders. The NQF WG discussed the issue and concluded that the title of the HE qualification is the title on the diploma, but with some additional information that can describe the qualification more closely.

Learning outcomes are a core feature of the NQFS and of the Qualification Standard. They show what a learner has achieved at the end of a learning process in terms of knowledge, skills, abilities & attitudes. The qualification content analysis shows for the selected 27 qualifications, whether the learning outcomes can be compared with the NQFS level descriptors and if so, which NQFS level is appropriate for the qualification. The content analysis shows that ¼[5] of VET qualifications are based on LO expressed as Knowledge, Skills, Abilities and Attitudes (KSAA), in line with NQFS level descriptors. HE qualifications have LO (general and subject specific competencies) but they are not expressed in terms of KSAA. This prevented proper analyses of HE qualifications' LO and their assessment against the NQFS level descriptors. In the selected sample of non-formal qualification different approaches can be observed (key

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[2] See Annex 2

[3] Qualifications that can be obtained in education system in Serbia

[4] Except for the qualification code and the qualification sector which have yet to be defined.

[5] 26% of all secondary VET qualification

competencies, programme outcomes). Post-secondary qualifications are not based on LO but rather on the goals and objectives of the programme, so it was not possible to perform a proper analysis.

The Qualification standard is the standard for the quality of qualifications in the NQFS. The qualification quality analysis provides additional information to the inventory about five elements of the qualification cycle: Relevance of the qualification for the labour market, Standards on which the qualification is based, Learning process, Assessment and Certification. The quality analysis shows that participation of labour market actors in the qualification cycle is on ad hoc basis and that the absence of a National Classification of Occupations and occupations standards are hampering factors to assess the relevance of qualifications. Only reformed VET qualifications are based on a Qualification Standard. These qualifications have a work description and a reference to the occupations that are accessible for the holders of a qualification. Most of the analysed qualifications have educational standards, some also have assessment standard but what is widely missing are occupational standards. Labour market actors (enterprises, employers, instructors) are involved in the education process mostly through realisation of practical teaching and professional practice, but the degree of their involvement varies from level to level (secondary, higher education) and from type to type of education (vocational, professional, academic). In VET they are also involved in the assessment process as members of Final exam and VET Matura assessment commission. The assessment method is usually part of regulation while the assessment types applied differ between levels and types of education. Certification is regulated by laws and by laws. Many aspect of the qualification (education) system are regulated by laws and by-laws which in theory should provide transparency of the system. However the transparency is lost in the forest of different regulations. Basic information on the qualifications are scattered in different documents and finding them is time consuming.

It is evident that different levels and types of the qualification (education) system in Serbia have been developed with different pace and based on different approaches. Lack of cooperation and coordination has influenced relevance, transparency and flexibility of the system. Some NQFS elements are already present in the system, to a different degree, but what is missing is an overall approach, clear objectives and the will to pursue and achieve these. The NQFS could be that framework that will channel efforts of all stakeholders with the aim to get transparency, flexibility, quality and relevance of qualifications.

Based on the results of the inventory & analysis, 15 recommendations are formulated.

1. NQF and related Law and by-laws need to be adopted in order to solve issues of qualification standard, code, title, levels, and sectors and of the registry of qualifications. The NQF will give incentives for further development of qualifications based on LO, and provide common understanding of qualifications and LO. Application of different approaches, methodologies and understanding of key elements such as LO, QS and work description makes qualification system in Serbia ambiguous. As a consequence for some qualifications comparison of qualifications' LO with NQF level descriptors is not possible. The NQF will introduce common understanding on competencies and LO that should be used throughout qualification system in Serbia.
2. Adoption of NQF should be followed by development of instruments and processes that would enable its proper implementation. Apart from the Law, related by-laws should be adopted that would support uniform implementation of NQF on all levels and types of education. Adoption of the Law will require changes in accreditation standards in HE.
3. Qualification standard should be the bases for including the qualification into the NQF and consequently in the registry. Elements of QS need to be reconsidered when developing the registry and integrated into the structure. Introduction of Qualification standard in education system as whole and making it publicly available will support transparency of the system making it more understandable for the wider public and easier to navigate. According to the data in the inventory, only 68 qualifications meet all elements of the qualification standard[6]; 23 of these are reformed LO based VET 3 qualifications, 45 are reformed LO based VET 4 qualifications.
4. In the secondary Vocational Education and Training, reform process based on Qualification standards and Learning Outcomes should continue. The selected sample of qualifications confirm

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[6] Except for the qualification code and the qualification sector which have yet to be defined.

the right approach in reforming the qualifications, so this should rollout to the rest of qualification that have not yet been reformed. The qualification content analysis shows that Learning Outcomes of 68 VET 3 and VET 4 qualifications in the inventory are in line with the respective NQFS level descriptors (NQFS level 3 and level 4).

5. Higher Education qualifications need to be aligned with NQF requirements. This implies changes in standards, accreditation criteria and procedures. This process need to be organised and planned to enable transition from current practice to HE qualifications relevant for the labour market, based on Qualification Standards and Learning Outcomes (knowledge, skills, abilities and attitudes).

6. In non-formal education different practice and approaches were present so introduction of NQF will support unified practice when it comes to including non-formal qualification into NQF. The works on development of adult education (non-formal education) as well as on RPL need to continue. Since this work is carried out in parallel with development of NQF coordination and synergy need to be secured.

7. The inventory presents a good analytical tool but should also be used as starting point for developing the national registry of qualifications. The inventory presents a comprehensive and complete list of active qualifications in formal education in Serbia.

8. Regarding the needed statistical data it is necessary to include requirements deriving from the qualification registry and NQF into overall education, labour and employment statistical data collected. Also, methodological approach in collecting data needs to be harmonized. This refers mostly to the data on students that have been collected in the National Statistical Office. Statistical data collected by different institutions and by different methodologies need to be aligned.

9. There is a need to build systemic regulated approach to social partnership and their involvement in the qualification cycle. A model of social partnership needs to be developed and implemented, not only in identification of qualifications and related qualification standards, but also in developing curriculum and including social partners in implementation of educational programmes and assessment. On national level Sector Skill Councils need to be established and secure relevance of qualification.

10. National Classification of Occupations and related occupational standards need to be adopted and mechanisms for further development need to be designed and linked to the NQF. Within the framework of social partnership, the Ministry responsible for education and the Ministry responsible for labour and employment need to find an institutional arrangement to house, maintain and develop the National Classification of Occupations and occupation standards as well as NQF.

11. The relevance of qualifications needs to be assessed, especially for qualifications that are not based on work descriptions. On the system level this requires establishment of SSC that can assess the relevancy of individual qualifications for the sector. It is necessary to develop instruments, methodologies, processes and institutional setting for development of occupational standards. In Serbia there is no systemic approach to the analyses of demand side, economy and labour market needs. This presents a gap in the qualification system that need to be closed with the adoption of the NQF. Although selected secondary VET qualifications have work descriptions, the analysis of work was done for individual qualifications and ad hoc.

12. National registry/catalogue of qualification should be made available to the public and institutional arrangements and responsibilities in developing and maintaining the registry need to be defined.

13. Although revision of qualifications is not foreseen on the system level it needs to be introduced and carried out in organised and planned manner. Planning the revision of qualification would enable more systemic overview at the need for change the qualifications.

14. Assessment standard need to be firmly linked to LO. The LO are defining aspect in devising assessment standards and assessment types.

15. The qualification system need to be made more transparent and user friendly, making basic set of qualification data available for the wider public.

The report concludes with conclusions for referencing the NQFS to the EQF, based on EF referencing criteria. On the issue of including individual qualifications into the NQF, it is common understanding among NQF WG members that only qualifications in compliance with defined criteria and that undergo an accreditation procedure can be included into the NQF. Minimum criteria are that a qualification is based on a QS and has defined LO as knowledge, skills, abilities and attitudes. Procedures for inclusion of

qualification into NQF will need to be developed, having in mind all levels and types of education. At this moment only secondary formal VET qualifications that have been reformed are fulfilling the criteria, and can be considered for inclusion into NQF.

Contents

List of Abbreviations

AQEC	Accreditation and Quality Evaluation Commission
BAS	Basic Academic Studies
BPS	Basic Professional Studies
CARDS	Community Assistance for Reconstruction, Development and Stabilisation Programme
CVAE	Council for Vocational and Adult Education
DACUM	Developing A CurriculUM
ECTS	European Credit Transfer System
ECVET	European credit system for vocational education and training
ETF	European Training Foundation
HE	Higher Education
IIE	Institute for Improvement of Education
ISCO	International Standard Classification of Occupations
KSAA	Knowledge, Skills and Abilities and Attitudes; domains of the level descriptors of the NQF in Serbia
LO	Learning outcomes
MoESTD	Ministry of Education, Science and Technological Development
NCHE	National Council for Higher Education
NES	National Employment Service
NQF	National Qualification Framework
NQF WG	National Qualification Framework Working Group
NQFS	National Qualification Framework in Serbia
QS	Qualification Standard
RPL	Recognition of Prior Learning
SSC	Sector Skill Councils
TPP	Teaching Plan and Programme
VET	Vocational Education and Training

Introduction

The establishment of the National Qualifications Framework for lifelong learning in Serbia (NQFS) supports the reform towards a modern, relevant and flexible system of education and training in Serbia; an education and training system that is responsive to the needs of the economy and the society and facilitates the mobility and progression of students throughout the education and training system. The development of the National Qualifications Framework in Serbia followed two different routes. In 2008, the National Council of Higher Education (NCHE) developed an NQF for Higher Education (levels VI-VIII) in the frame of the Bologna process. In 2013, the Council for Vocational and Adult Education (CVAE) approved an NQF document for secondary vocational education, both formal and non-formal (levels I to V). At the end of 2013 the Ministry of Education, Science and Technological Development (MoEST) decided to develop one integrated National Qualifications Framework, which would include qualifications of all levels and all types. In 2014, MoEST established the National Qualification Framework Working Group to develop the unified NQFS. The NQF WG developed the document "Levels and descriptors in the National Qualifications Framework in Serbia and classification of qualification by NQF levels in Serbia[7]" that was adopted by CVAE and NCHE in 2016.

The NQF WG is preparing proposals to decide which qualifications are to be included into the NQF. This requires a good overview of the qualifications that currently exist in Serbia. Therefore, the inventory & analysis of qualifications was carried out in parallel with the work of the NQF WG, with MoEST and the NQF WG as beneficiaries.

The Inventory & Analysis has three parts:
- The *inventory* gives a comprehensive and systematic overview of currently existing qualifications in Serbia
- The *Qualification content analysis* compares learning outcomes of qualifications with NQF level descriptors.
- The *Qualification Quality analysis* examines main features related to the quality of qualifications.

Objectives of the Inventory and Analyses

The Inventory and Analysis has two main objectives:

1. **Provide evidence for decisions about inclusion of qualifications in the NQFS Registry and allocating qualifications to NQF levels.**
   The inventory & analysis gives insight into the qualification landscape in Serbia. It has ignited discussions within the NQG WG and the outcomes of the I&A support proposals of the NQF WG about:
   - What are qualifications in Serbia?
   - Which qualifications can be included into the NQF Registry because they meet the quality assurance elements prescribed by the NQF (the qualification standard).

   The *NQFS Registry* is an integral part of the NQFS. The Registry will list those qualifications that are included in the NQFS. The establishment of the Registry will be regulated by the NQF law. The Law will prescribe obligatory elements of the Registry and requirements for qualification to be included into the NQFS Registry. Further elaboration on operational details and maintenance of the Registry will be regulated in by-laws.

2. **Provide evidence for referencing the NQFS to the European Qualification Framework**
   Referencing the NQFS to the EQF is based on 10 referencing criteria[8.] The inventory & analysis provides evidence for two of them.

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[7] Adopted by Council for Vocational and Adult Education, Decision No. 611 – 00 – 000052/13/2016 – 03 from 05.04.2016 and National Council for Higher education, Decision No. 15/2016 – 06 from 26.02.2016

[8] http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetailDoc&id=10973&no=2

- EQF referencing criterion 3: The NQF and its qualifications are based on the principle and objective of learning outcomes
- EQF referencing criterion 4: The procedures for inclusion of qualifications in the national qualifications framework are transparent.

Structure of the report

Chapter 1 - *Methodology* describes the scope of the Inventory & Analysis, the methodology and tools used for the three parts of the I&A, the selection of a sample of qualifications for the Analysis and the process of gathering data.

Chapter 2 – *Inventory* describes the content of the inventory; a classification of qualifications in qualification groups and in economic sectors, which qualifications meet the Qualification Standard and pending issues

Chapter 3 - *Analysis of the content of qualifications* describes the outcomes of the content analysis.

Chapter 4 - *Analysis of quality of qualifications* describes the outcomes of the quality analysis.

Chapter 5 – *Recommendations* formulates 15 recommendations based on the outcomes of the inventory & analysis.

Chapter 6 – *Conclusions for EQF Referencing* draws some conclusions related to the criteria 3 and 4 for the Referencing process of the NQFS to the EQF.

The annexes to the report provide sources of information, a list of institutions and stakeholders consulted and the completed templates and questionnaires for the analysis.

1. Methodology and process

Scope of the inventory

The scope of the Inventory & Analysis of existing qualifications in Serbia was discussed and agreed in the NQF WG and with MoESTD. It was decided that the Inventory will encompasses formal qualifications from the secondary and post-secondary vocational education system and the higher education system and non-formal qualifications from the adult education system. It was also decided to include in the inventory only active qualifications that are currently obtainable in the education and training system. For the non-formal qualifications, it was decided to include those qualifications that have been accredited by MoESTD and NES. The inventory does not include a qualification obtained after completion of primary education or qualifications obtained after completion of secondary general education.

The inventory includes qualifications that can lead to regulated professions. The Law on regulated professions is currently in public discussion and is expected to be adopted in 2017.

The inventory does not include professional qualifications for which a special licence to practice or for approval is needed, such as attorney at law. The approach to the issue of professional qualifications will be defined in the NQFS so for the time being it was decided not to include these qualifications in inventory.

The Law[9] allows for master craftsmen education and foresees the master craftsmen exam for acquiring the master craftsmen qualification. Master craftsmen qualifications belong to post-secondary vocational education and are designated at fifth (5) level of NQF. Currently there are no active master craftsmen qualifications in the system.

Groups of qualifications

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[9] Law on Foundation of Education, Official Gazette of RS, no. 72/2009, 52/2011, 55/2013

In total the Inventory includes 1557 qualifications. For the purpose of this Inventory & Analysis the qualifications are divided into education subsectors and groups of qualifications.

Secondary VET

The inventory distinguishes four groups of secondary VET qualifications:

- VET level 3
- VET level 4
- VET LO* level 3
- VET LO* level 4

*The marking "LO" is used to indicate qualifications that started as a pilot and most of them are based on a Qualification Standard and on learning outcomes[10]. So far 59 qualifications that started as a pilot have been mainstreamed into the formal VET system.

The inventory covers qualifications in all (15) education sectors in formal secondary vocational education[11].

Post-secondary VET

Post-secondary qualifications are so-called specialisations. They are included in the inventory as VET 5 qualifications.

Non-formal qualifications

The inventory distinguishes non-formal qualifications developed by different institutions and programmes/projects:

- NES: Accredited adult training programmes and training programmes provided by the National Employment Service (NES).
- CARDS: Qualifications developed for Regional Training Centres for Adult Education within a CARDS project
- Second chance: Qualifications developed in the Second Chance project
- Functional Elementary Educations for Adult Roma.

MoESTD has accredited last three groups of qualifications and they have been published in Official Education Gazette.

Higher education

The inventory includes seven groups of HE qualifications:

- Bachelor degree on Basic Academic Studies (BAS) (180 ECTS);
- Bachelor degree on Basic Professional Studies (BPS) (180 ECTS);
- Bachelor with Honours on Basic Academic Studies (240 ECTS);
- Master degree Academic Studies (180 + 120 or 240 + 60 ECTS)
- Professional Study Specialisation degree (180 + 60 ECTS)
- Academic Study Specialisation (300 + 60 ECTS)
- PHD – Doctoral Degree (300 + 180 ECTS).

All HE qualifications in the inventory are obtained after successful completion of accredited study programmes at professional colleges and faculties (universities).

There was a dilemma what constitutes the qualification in HE, titles or study programmes. It is within the remits of National Council for Higher Education (NCHE) to "compile and issue a list of professional, academic and scientific titles indicating the degree at a level of study in a field and abbreviations for these professional, academic and scientific titles[12]". The Accreditation and Quality Evaluation Commission (AQEC), a separate body of NCHE, is responsible for the accreditation of study programmes. Currently

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[10] Out of 74 qualifications that started as Pilot, 71 have defined LO.

[11] The education sectors are defined in Regulation from 1992

[12] Law on Higher Education, Official Gazette of RS, no.76/2005, 100 /2007, 97/2008, 44/ 2010, 93/2012, 89/2013, 99/2014

there are 2641 accredited programmes in HE[13]. After deliberation and consultation, the NQF WG concluded that qualifications in HE are titles, since the same title can be obtained through successful completion of different accredited programmes. Therefore, the inventory includes 895 HE titles. However the dilemma remains since Higher Education Institutes add additional information to the academic titles (title of the programme, module) that defines a qualification more precise. (See also chapter 2 of this report under pending issues)

The inventory covers HE qualifications in all (5) education – science and education – art fields[14] and related 46 areas[15].

The main work on the inventory was completed in August 2015. Changes after that date are not yet part of the inventory. This is mostly related to the introduction of Master degree Professional Studies by amendments to the Law on HE[16] and the Rule book on the list of professional, academic and scientific names[17] that contains list of HE qualifications.

Scope of the analysis; sample of qualifications

From the 1558 qualifications included in the inventory, a sample[18] of qualifications was selected for an in-depth analysis of the qualification. A balanced selection of qualifications for the sample was most important. In consultation with the beneficiaries, the following selection criteria were adopted. The selected qualifications should enable:

1. Vertical diagnostic of the qualification in education system – Analyses will encompass sample qualifications found on all levels of education in one economic sector.

2. Horizontal diagnostic of qualifications in the education system – In HE there are different groups of qualifications belonging to the same level, so the analyses will encompass sample of both qualifications. Also, there are qualifications in non-formal and formal education system at the same level.

3. Regarding the Economic sector the emphasis is put on the Agriculture, food production and food processing sector as one of priority economy sectors of the Republic of Serbia. So the sample includes qualifications for this sector at all levels. This analysis should provide data into developmental character of learning outcomes for qualifications in agriculture sector on all levels of education.

4. Apart from Agriculture, food production and food processing sector, the sample includes qualifications for secondary VET and non-formal educations in the economy sectors Electrical engineering, Machine engineering and metal processing, Economy, law and administration, Geodesy and construction and Forestry and wood processing. This should provide insight into relations of formal and non-formal qualifications.

Based on these criteria 27 qualifications were selected. Disbursement of qualifications per level and economic sector is as follows:

1. Secondary VET – 11 qualifications belonging to 6 different economic sectors (Agriculture, food production and food processing sector, Electrical engineering – including ICT, Machine engineering and metal processing, Economy, law and administration, Geodesy and construction, Forestry and wood processing);
2. Post-secondary VET – 2 qualifications belonging to Agriculture sector, food production and food processing;

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[13] AQEC, Guide through accredited study programmes in high education in the RS, 14th October 2016.

[14] Regulated by the Law on Higher Education

[15] Regulation on a scientific, artistic or professional areas, within the educational-scientific or educational artistic fields, Official Gazette of RS, no. 30/2007, 112/08, 72/09

[16] Official Gazette of RS, no. 68/2015

[17] Official Gazette of RS, no. 100/2015

[18] ''Sample'' is used here in the sense of ''cases'', rather than in the statistical sense.

3. HE – 7 qualifications belonging to Agriculture sector, food production and food processing covering all groups and levels of qualification in HE; and

4. Non formal – 7 qualifications belonging to 6 economic sectors.

For the VET qualifications, two qualifications are selected from each of economic sector, one on level 3 and one on level 4. In the Economy, law and administration sector only a level 4 qualification was selected because in that sector there are no qualification at level 3. It was decided in consultation with beneficiaries to select only qualifications based on Learning Outcomes for the sample.

For the qualifications quality analyses one additional secondary VET qualification was added from the ICT sector.

The list of qualifications and analyses is presented in the Annex 3 – Sample (Cases) of VET, HE and Non-Formal Qualifications used for Qualifications Analyses.

Methodology and tools

The methodology and tools for this inventory & analysis have been designed by the ETF. They were first developed and tested in the Former Yugoslav Republic of Macedonia in 2014/2015, where the inventory and analyses was executed to support the EQF referencing process. In the preparation phase, the tools were adapted to the Serbian context.

Inventory

The inventory is an excel sheet with 26 data categories. The categories were adjusted to the Serbian context by aligning them with proposed elements of a qualification standard[19] (QS).Preliminary research made evident that some columns had to be left empty because either data were missing or first decisions needed to be made by the NQF WG. However, it was decided to keep all categories of data (columns) in the inventory and complete the missing data in a later stage.

The inventory is bilingual; all data categories are entered in both English and Serbian.

The box below provides an explanation of the 26 data categories in the inventory. The numbers refer to the numbers of the inventory. The addition QS[20] indicates that this category is part of the Qualification Standard.

Data categories in the inventory

1. Qualification Code NQF Registry (QS2)[21] which is the unique code for the qualification based on classification within the NQF. Currently there is no regulation defining the qualification classification code. The draft NQFS document (October 2016) provides a proposal for the composition of the qualification code. The qualification code will be defined in the NQF Law.

2. Qualification title (Serbian with English translation) (QS1) is the title written on the diploma or certificate. A qualification title represents a lexical expression that provides concise information on the qualification, sufficient for its basic recognition.

3. Type of qualification document: diploma, certificate, other (QS13). A qualification is a formal recognition of acquired competences. An individual obtains the qualification when the authorised body determines that they have achieved the learning outcomes prescribed by the Qualification Standard, the

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[19] A Qualification Standard represents the content of a specific qualification defined according to the (14) elements. It includes information on the identification and classification of a qualification, prerequisites and qualification mobility, description of work and learning outcomes, elements of quality assurance. (Draft NQFS document, Belgrade October 2016)

[20] The 14th element of the Qualification Standard is not included in the inventory. The draft NQFS document (October 2016) formulates it as ''qualification reference data – the body responsible for the approval, the date of approval, the qualification audit date, the date of entry in the Registry. Decisions about these arrangements have not yet been made.

[21] QS1 indicates the qualification standard element

fact acknowledged by issuing a public document (diploma or certificate). To distinguish between qualifications based on learning outcomes (LO) and those that are not, following categories were used: (i) diploma for qualifications that are not based on LO, (ii) diploma + certificate of passed exams[22] within programme for educational profiles in secondary VET education, (iii) diploma + diploma supplement in higher education for qualifications that are based on LO, certificate (*uverenje*) for non-formal qualifications.

4. Qualification type refers to the agreed classification of qualifications. (QS5) The draft NQFS document (October 2016) proposes four types of qualifications: Vocational (Стручна), General (Општа), Academic (Академска) and Professional/Applied (Струковна). For the inventory and analysis, the division was made into "groups" of qualifications that can be acquired in the education and training system in Serbia, on different levels and education sectors (see under Groups of qualifications above).

5. Sector of qualification is a classification of qualifications based on their relation to the economic sector (QS6). This column is left empty because there is not yet an agreement about a classification of qualification sectors. The current classification in education sectors differs, in VET it is outdated and based on regulation developed in nineties. Fields and areas which are in use in HE make it difficult to link qualifications to economic sectors. The draft NQFS document (October 2016) includes a proposal of classification of qualifications within the National Qualifications Framework in Serbia. The Law on Adult Education[23] introduced Sector (Skill) Councils (SSC) as bodies of the Council for Vocational and Adult Education (CVAE). Sector Skill Councils are currently being established. They will have responsibilities for qualifications for their sectors.

6. Economic sector (QS3) according to the Unique Nomenclature of Occupations[24]. The Unique Nomenclature of Occupation was developed in the nineteen eighties and adopted in the beginning of the nineties, which make it more than 20 years old. The Nomenclature is outdated and is not compatible with the International Standard Classification of Occupations (ISCO), but it is still used to link qualifications to economic sectors. Qualifications in secondary VET have a code reference to an occupation in the Nomenclature. Qualifications in HE do not have such a formal code. For the inventory occupational codes were used that NES, for its internal needs, allocated to each HE title/qualification. These codes were later used to identify the economic sector to which these qualifications belong.

7. Connection with ISCO code. This column is left empty because the National Classification of Occupation is not yet adopted. With the support of IPA 11 a project proposal for Alignment of National Classification of Occupations with the ISCO-08 standard was developed but the document was never officially adopted.

8. Name of the awarding body (QS13). The awarding body is authorised to issue the certificate/diploma. In Serbia awarding bodies are secondary (vocational) schools, faculties, universities and professional colleges. The system for accreditation of non-formal education providers is in its early stage of development. The legal base for accreditation of these providers is the Law on Adult education and just recently relevant by-laws were adopted.

9. Status of the awarding body can be public or private. Inventory includes qualifications that are obtained both on public or private educational institutions provided that they are verified (for secondary VET schools) by the Ministry or accredited by AQEC.

10. Is the qualification based on learning outcomes (QS11)? Yes / No. Learning outcomes are explicit statements on a learning result. LO (knowledge, skills and competence/abilities and attitudes) are a significant feature of qualifications not only because the NQFS support the comparability of qualifications

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[22] Rule book on public documents issued by secondary schools, Official Gazette of RS, no. 31/2006, 51/2006, 44/2013 i 43/2015

[23] Law on Adult Education, Official Gazette no. 55/2013

[24] Unique Nomenclature of Occupations, Savremena administracija, Belgrade, 1990. A horizontal classification of occupations

at national level in terms of level of learning outcomes achieved, but also to provide the basis for comparison of national qualifications at European level.

11. Comment on Learning Outcomes – are learning outcomes formulated as Knowledge, Skills and Abilities and Attitudes (KSAA) or in some other way? (QS11).

12. Way of testing the achievement of learning outcomes (QS12). The Laws regulating different levels of education proscribe the ways of assessment. In secondary VET, after completion of the 3 year teaching programme there is a Final Exam. Since there is ongoing VET reform some of the qualifications (so called pilots) are based on QS and LO while others are not and have only learning objectives defined. For the qualifications that are based on LO summative assessment methods are National Final Exam (three years programmes) and National VET Matura (four years programmes) that are the same for all students, quality assurance mechanisms are built in the process, exams are assessing achievements of LO and social partners are participating in the examination process. The Law on Foundation of Education stipulates that the programme for National Final Exam in VET will be adopted by the end of 2016/2017 school year and programme for National General, Artistic and VET Matura by the end of 2017/2018 school year. In order to distinguish qualifications that are achieved through assessment of LO four categories were introduces: National Final exam, Final exam, National Matura and Matura. As for HE, the Law on HE proscribes that programmes of basic studies and specialisation can include a Final paper, while for Master studies, (both academic and professional) it is obligatory. Therefore, it is up to the individual study programmes to define whether the Final paper is included as assessment method. Doctoral dissertation is an integral final part of Doctoral studies.

13. The way of acquisition (QS5) indicates the pathways of acquiring a qualification. In Serbia it can be through formal or non-formal education or through RPL. The RPL system is in an early phase of development.

14. Duration of the education/training programme for acquiring the qualification (QS10) is defined in time and/or in credit points. Duration of non-formal training programme is expressed in class - hours. Secondary VET programmes last either three (Level 3 qualifications) or four years (Level 4 qualifications). Programmes for acquiring qualifications at Level 5 (master, i.e. specialist education) last either one or two years. In HE the duration of study programmes is expressed in credits, European Credit Transfer System (ECTS).

15. Prerequisites for the qualification (QS8) define the entry requirements for a learning program leading to the qualification. In Serbia preconditions can be: Elementary education for enrolment into secondary education; Secondary education - 3 years or 4 years for enrolment into HE; Secondary education + work experience for acquiring qualification at Level 5; Bachelor degree for acquiring qualifications on the Level 7 (Master) and Master degree as prerequisite for Doctoral studies.

16. Further mobility in the qualifications system (QS9). This column contains data on access to the next qualification level, and if yes to which level.

17. Work description (QS7) states whether a work description for a qualification is available and if yes, in which document. Work descriptions are the basis for development of LO and are expressed as duties (professional competencies) and corresponding tasks (unit of competencies). In Serbia they are called working competencies.

18. Existing accreditation procedure states whether an accreditation procedure for the qualification exist and if yes, who is responsible. Accreditation of a qualification is a crucial element in systematic and transparent processes of quality assurance. As expected the procedures and responsible bodies are different depending on the level of qualifications, i.e. qualifications belonging to pre-university education and HE qualifications. Also the data in this column shows development of the quality assurance system in Serbia. Until the VET Council was introduced by the Law[25] the responsibility for accreditation (approval)

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[25] Law on foundation of education, 2009

of qualifications in pre-university education where in the remits of MoESTD. In the area of HE, AQAC is responsible for accreditation of institutions and study programmes.

19. NQFS Level of the qualification (QS4)[26]. The level of the qualification based on the type. The draft NQFS document (October 2016) includes a proposal for eighth NQFS levels in Serbia and types of qualifications at each level.

20. Current level of the qualification.

21. Institution / body that developed the qualification. Before the IIE[27] was established MoESTD was responsible for development of pre-university qualifications (curriculum/programmes). In HE, faculties, professional colleges and universities (for integrated study programmes) are responsible for development of study programmes.

22. Year of first issue of qualification

23. Revision of the qualification should contain data is the qualification likely to be revised or discontinued in next 1-2 years. This column is left empty since there is no plan for revision of qualifications.

24. Statistical data on graduates should indicate the number of graduates for this qualification. This column is left empty since data on students per qualification do not exist.

25. Relevant documentation for the qualification. Most relevant documents for VET qualifications are teaching plan and programme that are published in Educational Gazette, but relevant data can also be found in Matura and Final exam manuals. For HE study programmes relevant data are found in application documents for accreditation of study programmes and in AQAC decisions.

26. Key documents composing qualification. This column lists the key documents for the qualifications that are selected for the in-depth analysis. The data also show development in VET and transition from education objectives to QS and LO.

The comprehensive collection of data for the inventory was finalised in August 2015. Since then some changes may have occurred that are not introduced into the inventory. The work of the NQF WG is not finished, and at the time this report was prepared only a draft NQFS document is available.

Qualification content analysis

The purpose of the qualification content analysis is to provide supporting evidence for allocation of qualifications to NQFS levels. To achieve this, expressions of learning outcomes of a qualification were compared with NQFS level descriptors for the indicated level. The qualification content analysis was executed for a sample of 27 qualifications (see annex 3).

The tools for the qualification content analysis consist of a template, an example and instructions. The template was completed for all 27 sample qualifications, following 5 steps for each qualification:

1. Identify the (most) relevant document(s) of a qualification in which expressions of learning outcomes can be found.
2. Insert basic info about the qualification in the template (title, indicated NQFS level, is the qualification based on Learning Outcomes?, document used for the analysis, date of development of the qualification, institute that developed the qualification).

3. Assess the relation between expression of learning outcomes and NQFS level descriptors and the gaps between expressions of learning outcomes NQFS level descriptors. Include this info in the template.

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[26] NQF levels in the inventory are based on available information at the time the inventory was compiled.
[27] Government Decision on the establishment of the Institute was published in the Official Gazette of the Republic of Serbia number 73/04, June 2004

4. Compare learning outcomes with NQFS level descriptors, using the template (for those qualifications with an expression of learning outcomes with a more or less direct relation with the NQFS level descriptors).

5. Describe differences between identified expressions of learning outcomes and NQFS level descriptors. (For qualifications that have no relation with NQFS level descriptors). These descriptions can later be used for a deeper analysis of the content of such qualifications in view of allocating them to NQFS levels.

Annex 4 includes the completed templates of all 27 qualifications in the sample.

Qualification quality analysis

The NQFS is the instrument for a quality system of qualifications. The purpose of the qualification quality analysis is to provide additional information to the inventory about five elements of the qualification cycle[28].
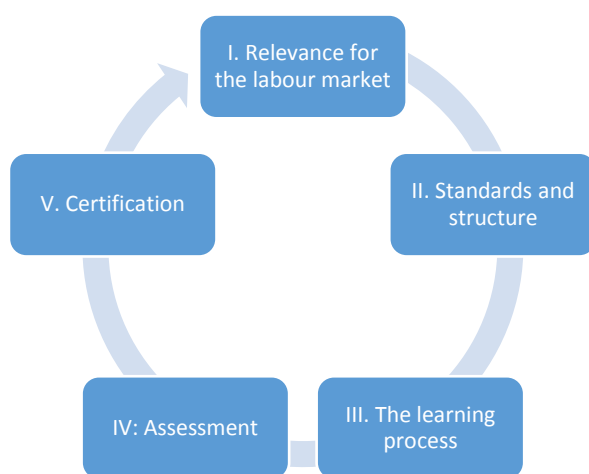
The tool for the qualification quality analysis is a questionnaire. The questions are grouped into the five blocks of the qualification cycle:

I.   Relevance for the labour market – is assessed through questions about involvement of social partners in determining the need for a qualification and the link to occupation(s).

II. Standards and structure– is assessed through questions about different standards that are the foundation for the qualification and their interconnection, involvement of social partners in defining the standards, periodical modification and structure (full or partial- structure in units) of a qualification.

III. Learning process – is assessed through questions about target group, practical training, duration, entry requirements, providers and accreditation, statistical data on enrolments and graduates, and involvement of social partners in learning process.

IV. Assessment – is assessed through questions about responsibility for assessment, assessors, bases for assessment and types of assessment and in particular practical assessment. The block on assessment is referring to summative assessment that someone has to pass to receive a diploma or certificate.

V.   Certification – is assessed through questions about awarding body, recognition of qualification, transparency and quality assurance confirmation.

The questionnaire was completed for 28 sample qualifications[29]. Annex 5 includes the completed questionnaires for all 28 sample qualifications.

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[28] The focus of the qualification cycle is on VET qualifications and relevance for the labour market. We need to keep in mind that quality and relevance are linked to the purpose of a qualification, and that is not always employment or labour market needs.

[29] For the quality analysis, one additional secondary VET qualification was added from the ICT sector.

Gathering data

Information and documents for the inventory & analysis were gathered mostly through desk research. Some data were available on the internet while for some older data (before 2000), the main beneficiary MoESTD provided documents. Consultations were carried out with representatives of MoESTD, IIE – VET Centre, NES and members of NQF WG. A detailed list of institutions and stakeholders contacted is given in the Annex 1 – *Institutions and NQF stakeholders contacted.*

The primary source of information for the inventory & analysis are legal documents, Laws, Regulations, By-laws and Decisions.

For secondary VET qualifications, the Learning Outcomes are part of the Teaching Plan and Programme that are published in Official Education Gazette. Due to the fact that most of the qualifications have been changed successively, the regulation on TPP has numerus amendments.

Most of the post-secondary VET qualifications were developed in 1997. Finding legal documents was a challenge. The MoESTD provided relevant documents.

For the non-formal qualifications the situation depends on the institution that has developed the qualifications. Qualifications that were developed by CARDS and were accredited by MoESTD, have a Teaching Plan and Programme published in the Official Education Gazette. NES qualifications are part of an Annual Training Programme which is an internal document. NES is only procuring the service of

For HE qualifications documentation for accreditation of study programme were consulted and Reports on self-evaluation and quality assessment of higher education institutions (Standards 1-14). Regarding the content analyses, Learning Outcomes for HE qualifications are specified in Standard 4 - *Competence of graduates for the accreditation of the study programmes*. For the HE qualification quality analyses, Accreditation document and annexes for Standard 5 – Curriculum, Standard 7 - Admission of students, Standard 8 - Evaluation and promotion of students were consulted together with the Self-Assessment report of the HE institutions. Some data were available on the internet. The website of AQEC has no submitted accreditation documents, only decisions on accreditation. For some of the selected HE qualifications accreditation documents were available on the site of HE institutions but for others MoESTD provided the documents.

The list of sources of information used for the inventory & analysis is presented in Annex 2 – *Sources of information consulted.*

During the work on the inventory and the analysis, the national expert communicated with ETF about adjustments and improvements of the tools and clarification of practical and conceptual issues. During the work on the inventory & analysis collected data and findings were presented and discussed with the NQF WG. The overall results of the inventory and both analyses were presented to a wider group of stakeholders in a meeting in October 2016.

Based on the outcomes of the inventory & analysis, pending issues were formulated, see chapter 2 of this report.
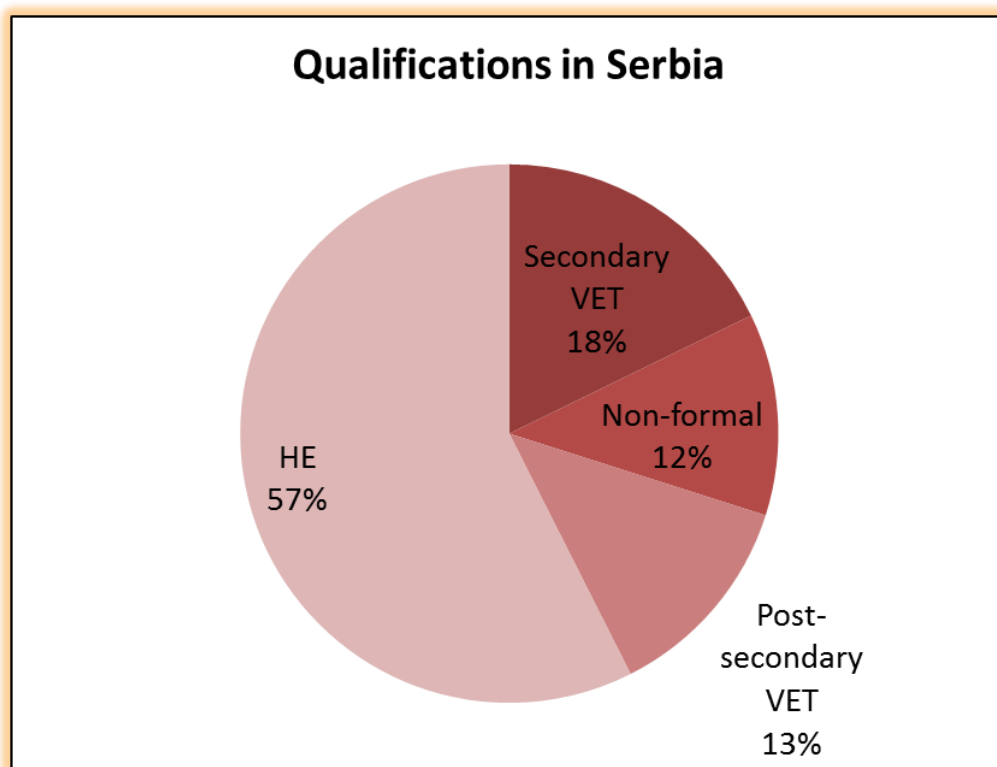
2.   Inventory of Qualifications

This chapter describes the content of the inventory. To explain which qualifications are included in the inventory a classification of qualifications in qualification groups and in economic sectors is used. The data in the inventory show which qualifications meet the Qualification Standard and which do not or only partly. The chapter includes with some pending issues.

Content

In total, the inventory includes 1558 active[30] qualifications. Out of the total number of qualifications, 277 are secondary VET, 197 are post-secondary VET, 895 titles/qualifications belong to HE and 189 are non-formal qualifications.

Chart 1 illustrates the distribution of qualifications in Serbia, distinguishing secondary and post-secondary VET, higher education and non-formal education.

Chart 1 - Distribution of qualifications among education sectors (in %)

For the purpose of this inventory and analysis, a more detailed classification of qualifications was made defining 13 different groups: 1. VET level 3; 2. VET LO 3; 3. VET level 4; 4. VET LO 4; 5. Post-secondary VET; 6. Non-formal; 7. HE Bachelor BAS; 8. HE Bachelor BPS; 9. HE Bachelor with Honours; 10. HE BPS + Specialisation; 11. HE Master; 12. HE Master + Specialisation; 13. HE PHD. Chart 2 shows the distribution of qualifications among these 13 groups.

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[30] Qualifications that can be obtained in education system in Serbia

Qualifications in Serbia
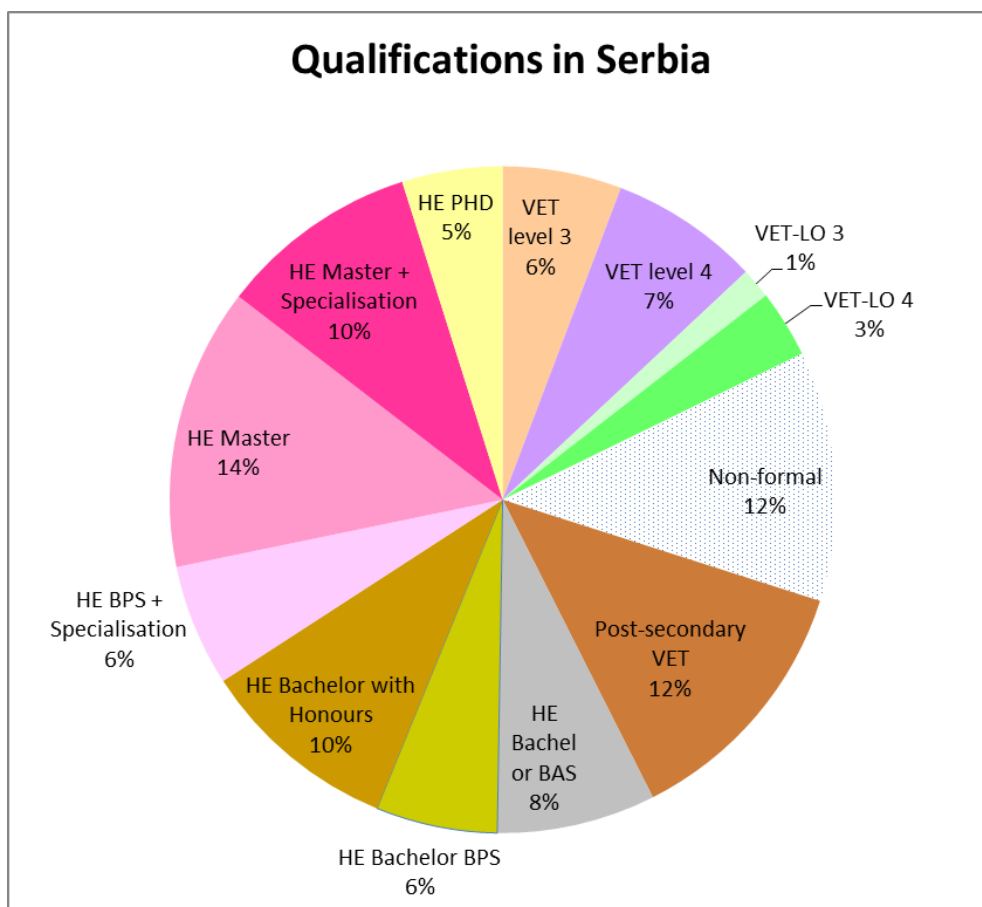
Chart 2 - Distribution of qualifications among 13 qualification groups (in %)

Higher education

More than half of the qualifications (57%) in the inventory belong to HE. The share of HE qualifications would have been much larger if accredited study programmes would have been included in the inventory instead of titles. The inventory includes 895 HE titles/qualifications. There were 2223 accredited programmes in HE in 2015[31] and in 2016 there are more than 2500 accredited programmes[32]. The draft NQFS document (October 2016) states that '*'the term qualification replaces so far used terms: a degree, a profession, a professional title, an educational profile. Examples of qualifications are: ...Bachelor Biologist (a bachelor of Art in Biology), Master Lawyer (a Master of laws) etc.''*. For the Inventory & Analysis of qualifications in Serbia, the choice was made to include HE titles, in line with this definition.

In HE there are numerus "types" of qualifications due to the diversity of HE. Chart 3 illustrates the distribution of HE qualifications into seven groups of qualifications. Two main groups are Academic studies and Professional studies. In Academic studies there are: HE Bachelor BAS (180 ECTS), HE Bachelor with Honours (240 ECTS), HE Master, HE Master + Specialisation, HE PHD. In Professional Studies there are HE Bachelor BPS and HE BPS + Specialisation. Amendments of the Law on HE[33] provides for the introduction of Professional Master Studies but so far no study programme leading to this type of qualification was accredited.

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[31] According to the Guide through accredited study programs in the institutions of higher education in Serbia
[32] 2641
[33] Law on HE, Official Gazette RS, no. 76/2005, 100/2007, 97/2008, 44/2010, 93/2012, 89/2013, 99/2014, 45/2015, 68/2015

Qualifications in HE
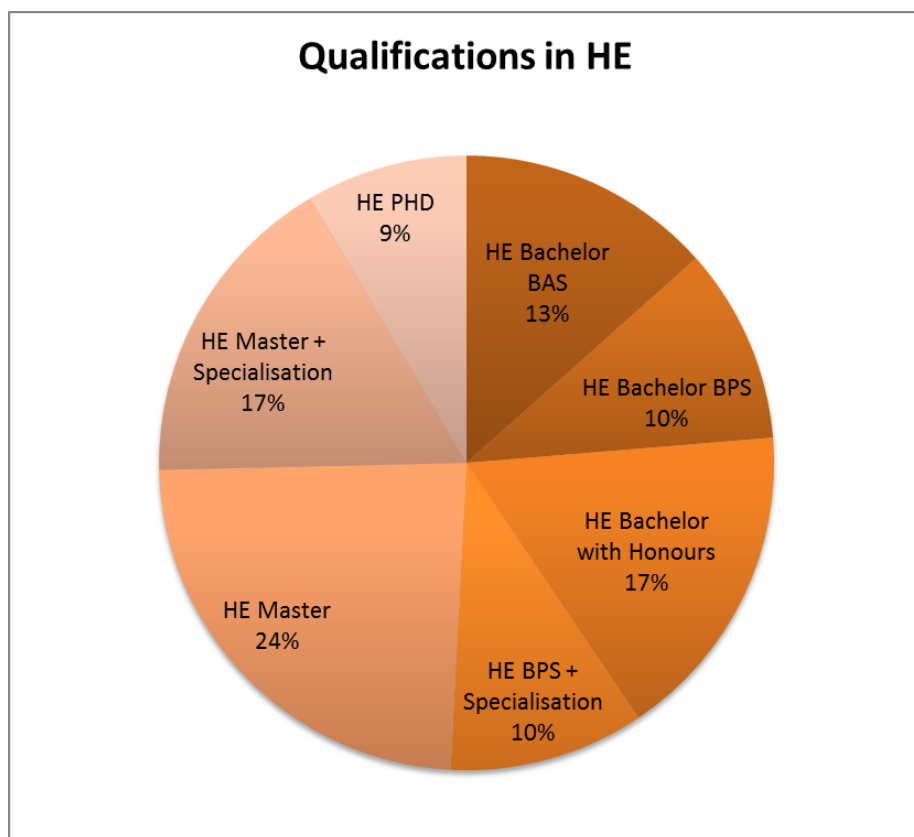
Chart 3 - Distribution of HE qualifications among 7 qualification groups (in %)

Secondary VET

The inventory includes 277 secondary VET qualifications (18%). 74 of these are reformed qualifications that are based on learning outcomes. 203 VET qualifications are not reformed and not based on learning outcomes.

59% (164) of all VET qualifications are VET 4 qualifications; 51 of these are LO based qualifications and 113 are non LO based.

41% (113) of all VET qualifications are VET 3 qualifications; 23 of these are LO based while 90 are non LO based qualifications.

Charts 4 and 5 illustrate the distribution between LO based and Non LO based VET 3 and VET 4 qualifications.
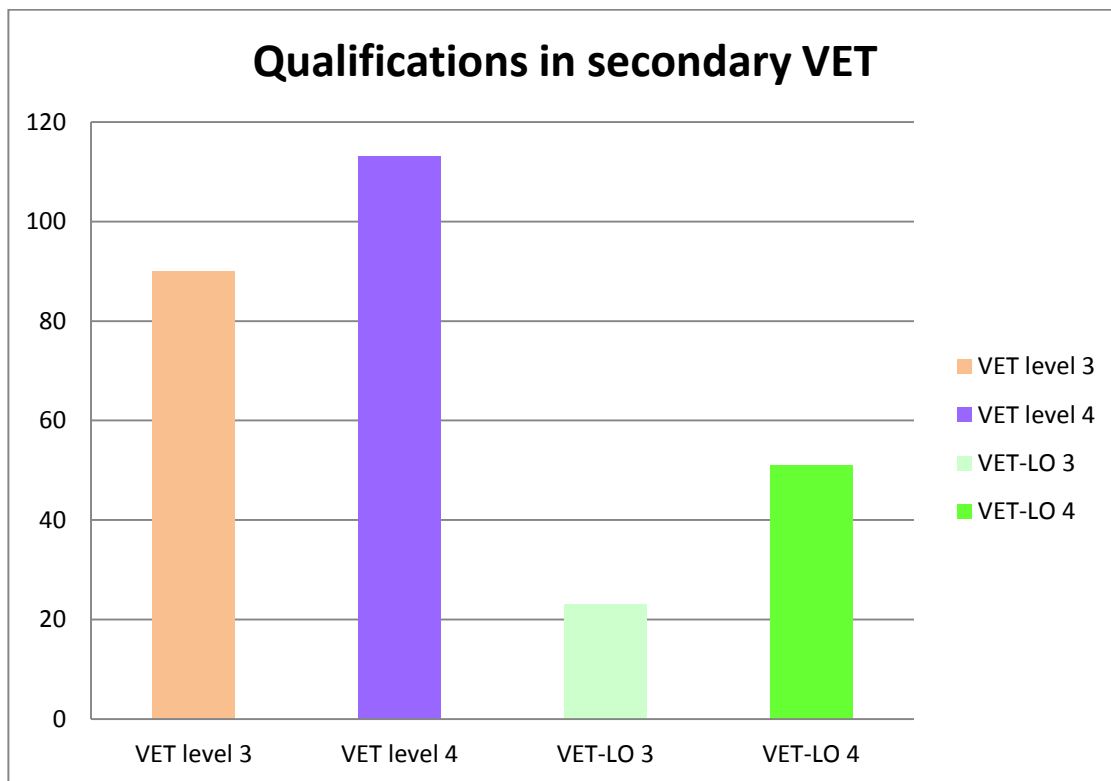
Chart 4 - Distribution between LO based and Non LO based VET 3 and VET 4 qualifications (in numbers).
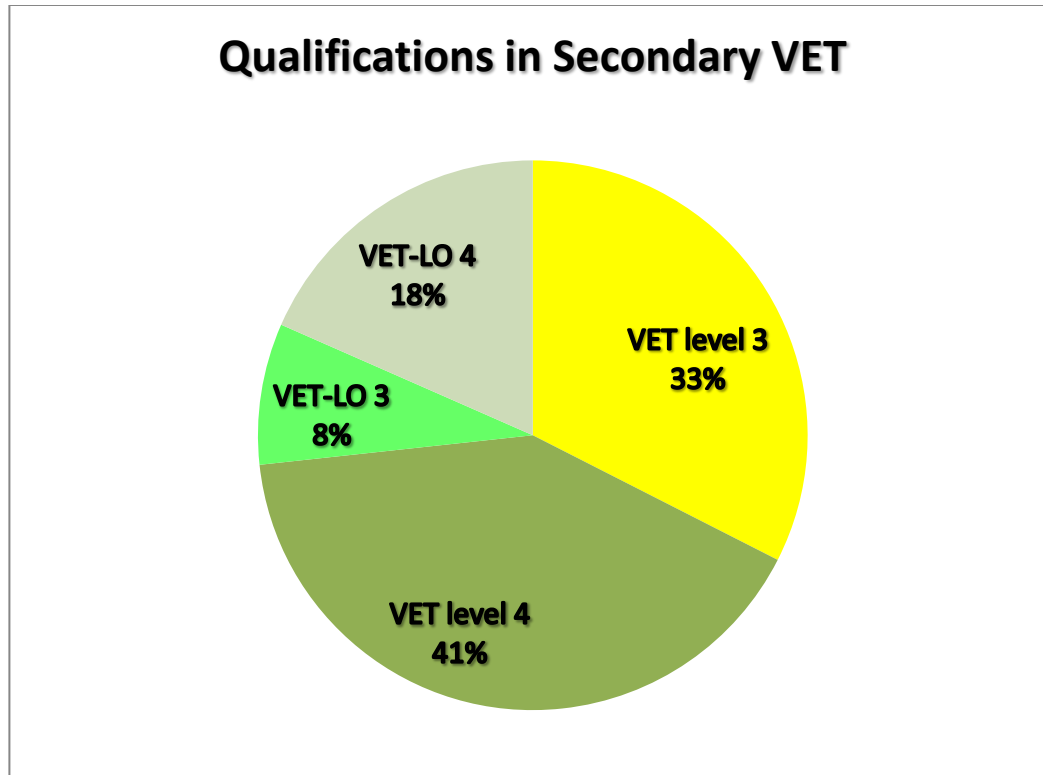
Chart 5 - Distribution between LO based and Non LO based VET 3 and VET 4 qualifications (in %).

Non-formal education

The 12% non-formal qualifications include 99 qualifications developed by NES and all 90 non-formal qualifications that have been accredited by MoESTD. MoESTD has accredited three groups of non-formal qualifications: 40 qualifications developed by the CARDS project in 2009; 15 Elementary education programmes for Adult Roma developed by project Functional primary education for adult Roma in 2006 and 35 developed by Secondary Chance project in 2011.

These are not all the non-formal qualifications that exist in Serbia. Since the adoption of the Law on Adult Education[34] in 2013, MoESTD has issued by-laws that regulate non formal adult education and participation of institutions and other organizations in the implementation of adult education. These by-laws will contribute not only to regulating (setting standards) to adult education but also to increase the number of non-formal qualifications.

Post-secondary VET

The inventory includes 197 post-secondary VET qualifications. All qualifications in the inventory belonging to post-secondary education are so-called specialisations. The Law recognises post-secondary VET qualifications as specialisation and master-craftsmen education, but master-craftsmen education is not developed. This number is sizable compared to the number of secondary VET qualifications. Without data on graduated students, it is not possible to assess whether these post-secondary VET qualifications are active and relevant. The majority of these qualifications were developed in the nineties, and they have not been revised since. These post-secondary specialisations are implemented on the request of enterprises; they are not part of regular annual enrolment in VET schools that is managed by the MoESTD. The entry requirements for these qualifications are obtained qualifications on the level 3 and 4 and work experience.

Qualifications per economic sector

The inventory includes a classification of qualifications per economic sector based on the Unique Nomenclature of Occupation[35]. The Nomenclature classifies occupations in 19 economic sectors: (i) Agriculture, food production, food processing; (ii) Chemistry, non-metals and graphic industry; (iii) Culture, art and public information; (iv) Economy, law and administration; (v) Education and upbringing; (vi) Electrical engineering; (vii) Forestry and wood processing; (viii) Geodesy and construction; (ix) Geology, mining and metallurgy; (x) Health care, pharmacy and social protection; (xi) Machine engineering and metal processing; (xii) Natural science and mathematics; (xiii) Physical education and sports; (xiv) Social and humanistic area; (xv) Textile and leather; (xvi) Trade, hospitality and tourism; (xvii) Traffic; (xviii) Utility, upholstery and painting services; (xix) Other.

56 of the 1558 qualifications in the inventory do not have a reference to the Nomenclature; the corresponding field was left blank because an economic sector related to the qualification has not been assigned. These 56 are all non-formal qualifications. HE qualifications also do not have a reference to the Nomenclature classification. Data from a NES internal document were used to allocate HE qualifications to an economic sector. Chart 6 illustrates allocation of qualifications in Serbia per economic sector.

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[34] Regulations on the conditions for the programme, staff, space, equipment and teaching aids for acquiring the status of a public recognized organizers of the adult education activities, Official Gazette no.89/15, Regulations on the type, name and content of forms and methods of record keeping and the title, content and appearance of the forms of public documents and certificates in adult education, Official Gazette no.89/15.

[35] Unique Nomenclature of Occupations, Savremena administracija, Belgrade, 1990. A horizontal classification of occupations
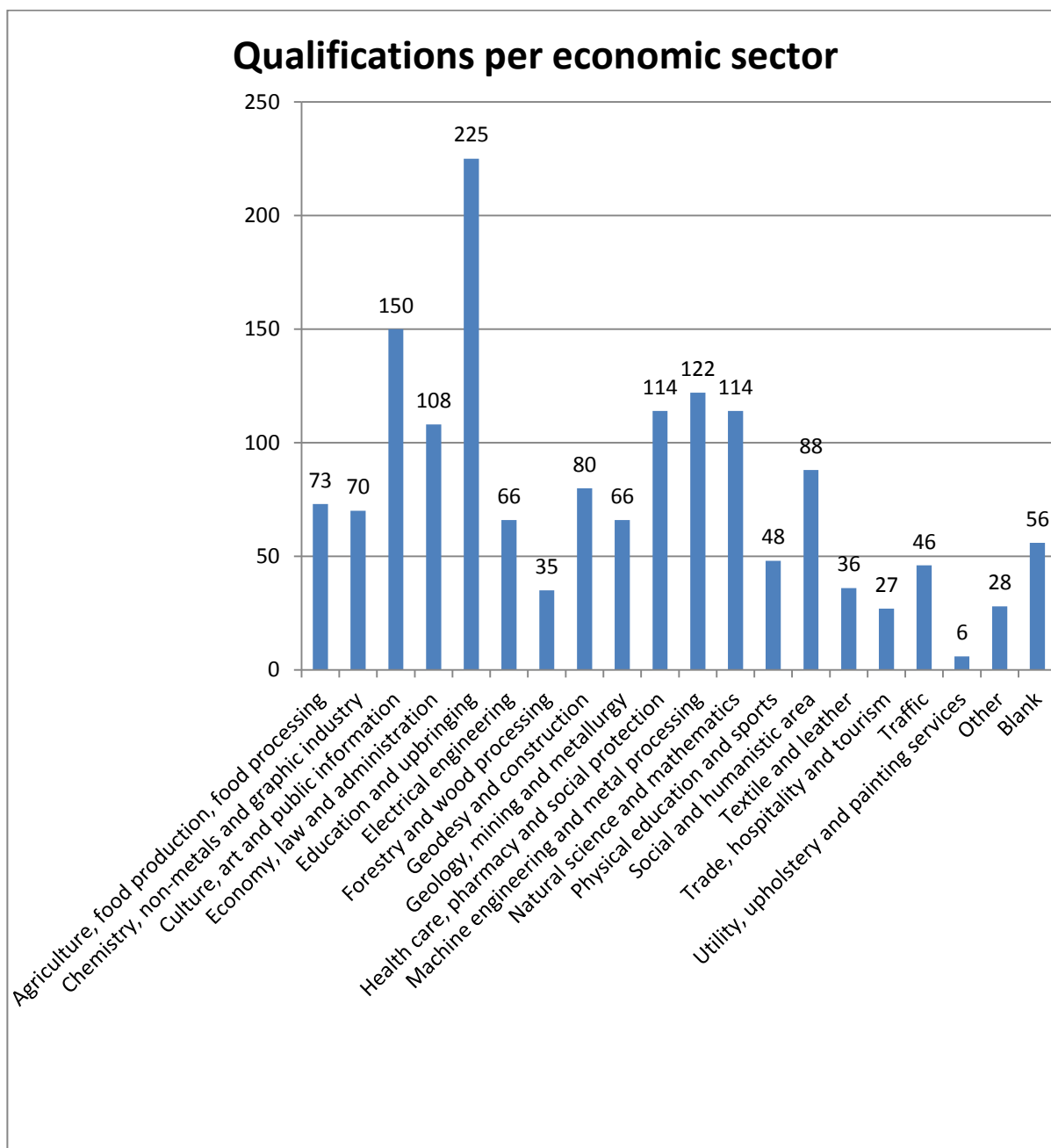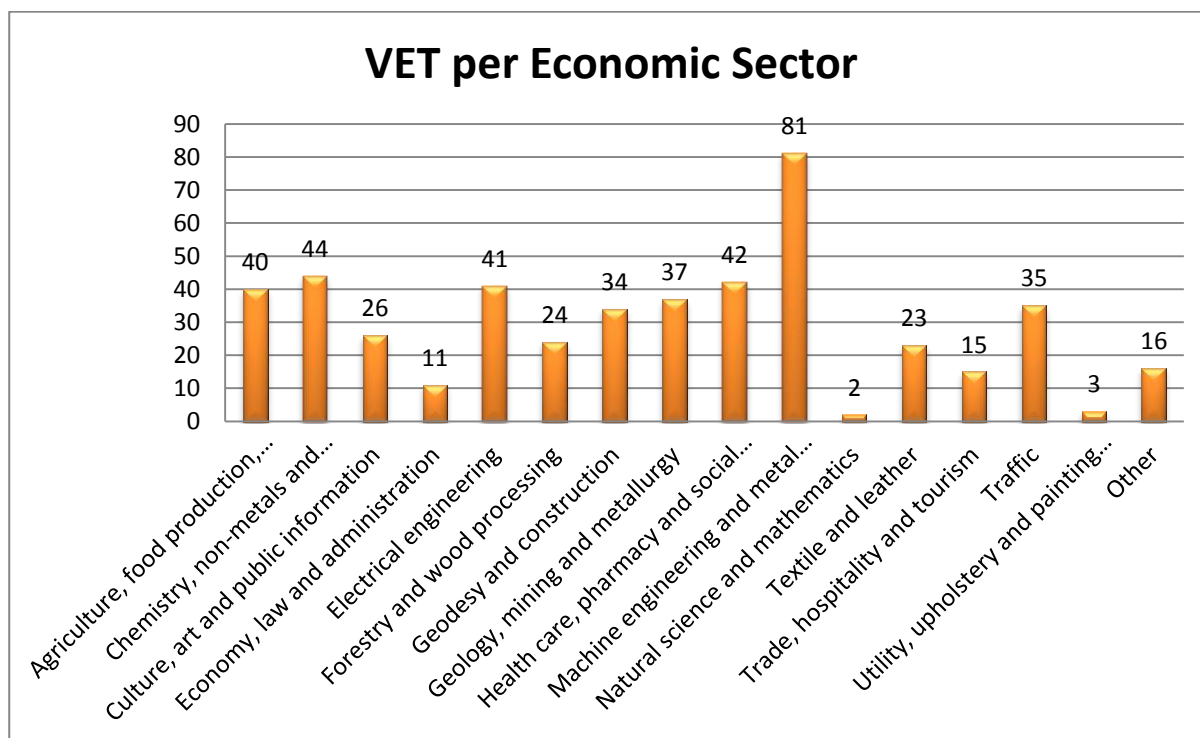
Qualifications per economic sector

Chart 6 - Distribution of qualifications in economic sectors (in numbers).

It is noticeable that the biggest number of qualifications is in the sector Education and upbringing (225 qualifications), followed by 150 qualifications in the Culture, art and public information sector. Other sectors that have over 100 qualifications are Economy, law and administration; Health care, pharmacy and social protection; Machine engineering and metal processing and Natural science and mathematics. The qualifications in Education and upbringing sector are all produced in HE, and the number is the result of teachers of different languages, combination of two major subjects within study programme and variety and types of education in HE. It would be interesting to see how allocation of qualification per economic sector corresponds to economic developmental objectives. The qualifications allocated to the category Blank have no allocation to an economic sector.

VET per Economic Sector

Chart shows the following values by sector:
- Agriculture, food production,...: 40
- Chemistry, non-metals and...: 44
- Culture, art and public information: 26
- Economy, law and administration: 11
- Electrical engineering: 41
- Forestry and wood processing: 24
- Geodesy and construction: 34
- Geology, mining and metallurgy: 37
- Health care, pharmacy and social...: 42
- Machine engineering and metal...: 81
- Natural science and mathematics: 2
- Textile and leather: 23
- Trade, hospitality and tourism: 15
- Traffic: 35
- Utility, upholstery and painting...: 3
- Other: 16

Chart 7 - Distribution of VET qualifications in economic sectors (in numbers).

The inventory allows analyses of qualifications per individual economic sector and per education "sector". This kind of analyses will be useful when planning the development or revision of qualification in the sector. A few examples are shown in charts 7 and 8 that illustrate the distribution of qualifications in the Agriculture, food production and food processing sector

Qualifications in Agriculture, food production and food processing

Chart shows the following values:
- VET level 3: 5
- VET level 4: 4
- VET-LO 3: 4
- VET-LO 4: 4
- Non-formal: 21
- Post-Secondary VET: 23
- HEBachelor BAS: 1
- HEBachelor BPS: 2
- HE Bachelor with Honours: 1
- HE BPS + Specialisation: 2
- HE Master: 2
- HE Master + Specialisation: 2
- HE PHD: 2
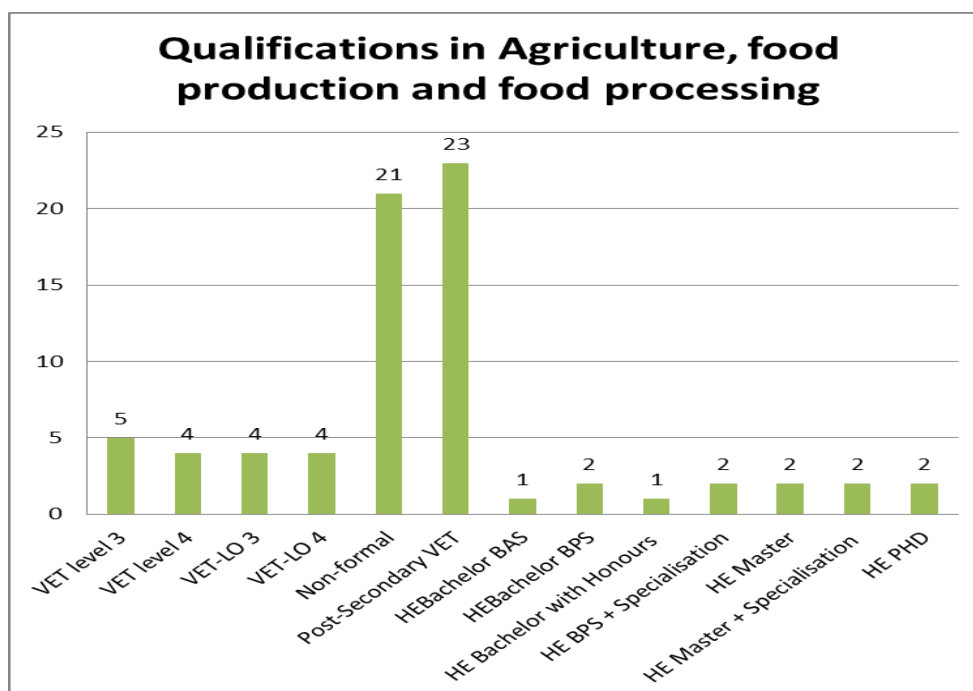
Chart 8 - Distribution of qualifications in the Agriculture, food production and food processing sector (in numbers).
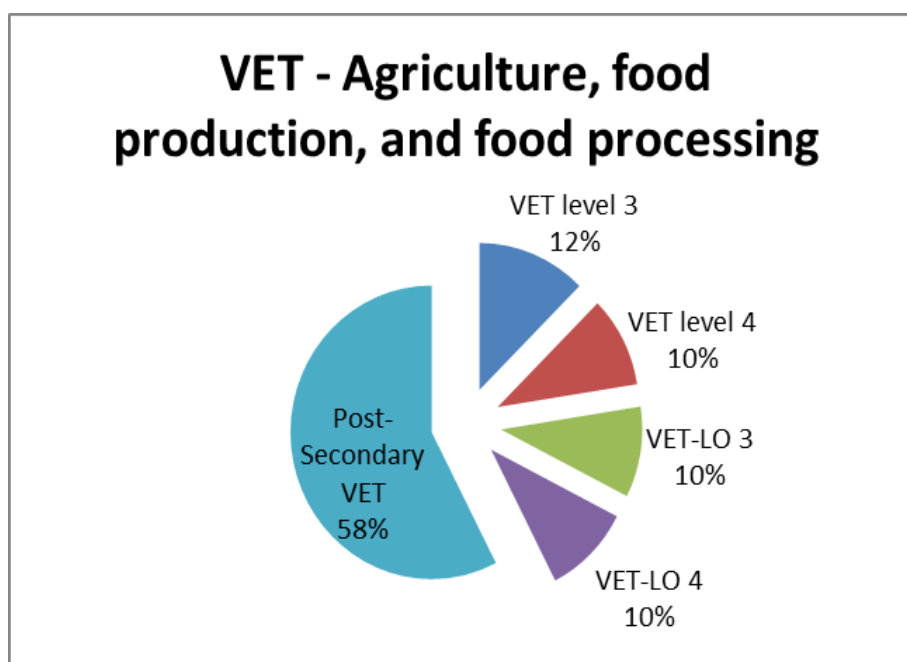
Chart 9 - Distribution of VET qualifications in Agriculture, food production and food processing sector (in %).

Chart 7 and 8 show that a significant portion of qualifications in the Agriculture, food production and food processing sector non-formal qualifications and post-secondary VET qualifications. The number of non-formal qualifications in this sector indicates that there is a need for these qualifications on the labour market. For the post-secondary qualifications however, although they are active qualifications, it is not possible to assess their relevance without data about the number of students.

Data

The inventory is a comprehensive and analytical tool, structured in 26 categories (columns). The categories include the proposed elements for the Qualification Standard (QS). All categories are explained in chapter 1 of this report under methodology and tools.

Not all categories could be filled in for all qualifications. Some categories of data are not yet available such as the qualification code and the qualification sector. These will be defined with the adoption of the NQF and related legislation. A complicating factor is that data are scattered across different institutions, are often not publicly accessible, and the methodology for the collection of data differs.

Qualification standard

The inventory categories include 14 elements of the Qualification Standard (QS). The inventory shows qualifications that meet elements of the Qualification Standard. Data are lacking for the following elements of the Qualification Standard:

- The qualification code (QS2) and qualification sector (QS 6) are not yet defined, therefore these categories have left blank for all qualifications
- The economic sector (QS 3) is allocated to all qualifications except for 55 non-formal qualifications mostly due to the NES internal documents.
- Learning outcomes (QS 11); 71 reformed VET LO 3 and VET LO 4 qualifications, some non-formal qualifications and all HE qualifications are based on learning outcomes. 418 qualifications in the inventory are not based on LOs. These are all VET 3 and VET 4 qualifications that are not reformed, some non-formal qualifications and all post-secondary VET qualifications. Only 68 qualifications have learning outcomes expressed in Knowledge, Skills and Competence, these are reformed LO based VET 3 and VET 4 qualifications.

- Way of testing achievements of learning outcomes (QS12); no data for this category have been found for 712 qualifications. These are all 99 non-formal NES qualifications and 613 HE qualifications. In HE the Law prescribe obligatory method of assessment for the end of Master (final work – paper) and PhD (doctoral dissertation) education. For other types of HE it is optional so it is up to the individual study programme to define method of assessment.
- Further mobility in the qualification system (QS9); 706 qualifications allow no mobility in the qualification system. These are all non-formal qualifications, level 5 (specialisation), the HE Specialisation qualifications (both academic and professional/applied) and PhD (there is no further education). With introduction of NQFS the issue of mobility will become transparent.
- Work description (QS7); 305 qualifications in the inventory have a work description. These are 68 reformed VET LO 3 and VET LO 4 qualifications, 40 non-formal qualifications developed by CARDS and all post-secondary qualifications

NQFS level (QS 4); for the 134 non-formal qualifications, NQF level is not indicated in the documents. CARDS qualifications have code that links them to the Nomenclature occupations, sector and level of education. According to the data in the inventory, only 68 qualifications meet all elements of the qualification standard[36]; 23 of these are reformed LO based VET 3 qualifications, 45 are reformed LO based VET 4 qualifications.

Pending issues

Availability of data

The process of gathering data was time consuming and challenging, due to the fragmentation of data sources and their availability. Different methodologies are used to collect data, for example: the National Statistical Office has annual data on graduated HE students but not overall data on graduated students per titles. Currently there is no database linking titles and related accredited programmes in HE. Such data for secondary qualifications are also fragmented, available at school level and collected on annual bases. Coordination and cooperation between different institutions is required. Information is not available for some of data categories in the inventory, such as statistical data about graduates. The existing fragmentation, different methodologies and missing data makes it difficult for the wider public to access relevant information about qualifications. This makes a national registry of qualification even more important and necessary.

Specific issues related to availability of data:

- Some of the missing data will be available as soon as NQFS and related legislation is adopted. This refers to data on qualification code, qualification sector and level.
- Data on the link with ISCO will be possible to obtain as soon as the National Classification of Occupations is adopted.
- Regarding LO in secondary VET, the information was published in several documents in the pilot phase but with mainstreaming pilots into the system the QS is published within the Teaching plan and programme for a qualification.
- HE qualifications have LO but they are expressed as general and subject related competencies and not as KSAA.
- Testing the achievements of LO is prescribed by Law and is an integral part of the teaching plan and programme in secondary education while for HE minimum requirements are prescribed by the Law and the rest is defined in the accredited study programmes.
- A work description exists in reformed secondary VET LO qualifications and post-secondary VET qualifications. HE qualifications are not based on work description or QS.
- Regular revision of qualifications in VET is not regulated and does not exist at system level nor is it practiced on a regular basis.

Classification of qualifications

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[36] Except for the qualification code and the qualification sector which have yet to be defined.

At the time when this inventory was produced, the NQF WG was still working on the classification of qualifications. So, the inventory uses a classification of qualification per economic sector based on Unique Nomenclature of Occupation. The Nomenclature classifies all occupations in 19 economic sectors. The data on the link between qualifications and ISCO code can be added when the National Classification of Occupations and related documents have been adopted. In August 2016 the Swiss Agency for Development and Cooperation within the project "Support to the Implementation of the Employment and Social Reform Programme in Serbia focusing on Youth Employment and Employability Policies" supported development of the study "Classification of qualifications in the National Qualifications Framework in Serbia, Identifying sector council" that will present information bases for NQF WG decision making.

Types of qualifications

At the time this report is written the NQF WG is still working on the NQFS. However, the preliminary decision was made to distinguish four categories of qualifications: general, vocational, academic and professional.

Title / name of qualifications

The issue of qualification title/name is settled in secondary VET but in HE it needs to be discussed and agreed. What constitutes the qualification in HE and its name (title of diploma or name of the accredited study programme) needs to be decided and agreed with all relevant stakeholders. The NQF WG discussed the issue of what a qualification and the title of a qualification title is in HE. The NQF WG concluded that the title of the HE qualification is the title on the diploma, but with some additional information that can describe the qualification more closely. The current solution where the National Council of Higher Education decides on the list of titles (professional title) in the form of regulation is not practical for a number of reasons. It occurs that two different HE programmes from same faculty have the same title on the diplomas. For example, Basic Academic Study – Agriculture programmes: Zoo - technique and Plant production have the same title on diploma - Bachelor with Honours agricultural engineer/ Дипломирани инжењер пољопривреде. Another case is that within one study programme there are modules indicating more than one qualification. For example the study programme Plant production has four different modules, Farming and Vegetable production, Fruit Growing and Viticulture, Horticulture and Phytomedicine, with separate 4 year teaching plans for each module.

3.   Analysis of Content of Qualifications

The Analysis of the content of qualifications compares learning outcomes of qualifications with NQF level descriptors for 27 qualifications selected for the sample. 25 of the 27 qualifications in the sample are based on learning outcomes; 2 post-secondary VET qualifications in the sample are not based on learning outcomes. (See chapter 1 Methodology).
Learning outcomes are a core feature of the NQFS and of the Qualification Standard. They show what a learner has achieved at the end of a learning process in terms of knowledge, skills, abilities & attitudes. The qualification content analysis shows for the selected 27 qualifications, whether the learning outcomes can be compared with the NQFS level descriptors and if so, which NQFS level is appropriate for the qualification.

Some common features have been identified for the different groups of qualifications; therefore, the findings of the analysis are presented here for the identified groups of qualifications. The analysis of the individual qualifications is presented in Annex 4 - Qualification Content Analyses on the Sample qualifications.

Secondary VET - Formal 3 and 4 level VET LO qualifications

LOs of five VET 3 qualifications were compared with NQFS level 3 and six VET 4 qualifications were compared with NQFS level 4[37]. <u>The analysis shows that LOs of these qualifications can be compared with NQFS level descriptors. It also shows that the LOs of VET 3 qualifications are in line with NQFS level 3 descriptors and that LOs of VET 4 qualifications are in line with the NQFS level 4 descriptors.</u> No significant gaps were identified between the NQF descriptors and LO. However, a general observation can be made that ''abilities and attitudes'' are the weakest parts of the learning outcomes of VET 3 and VET 4 qualifications.

The inventory shows that 71 VET qualifications are based on learning outcomes. The Learning outcomes of 11 of these were analysed and compared with NQFS level descriptors.

The methodology for development of these qualifications is clear and coherent. The LO are formulated in consistent manner and are expressed as knowledge, skills, abilities and attitudes. The qualifications are based on work competencies (work descriptions), but these work descriptions are result of functional analyses or DACUM method. There are no adopted and/or approved occupation standards in Serbia. All selected qualifications are based on Qualification standards that are integral part of Teaching plan and programme. Regarding the descriptor related to ability to "perform work activities independently" it is not expressed per se in LO but is implied and it can be deduced from the formulation in Serbian language. Also, some 3 - year qualifications do not have LO related to the "Entrepreneurial spirit in work" while others have formulations that are implying this attitude such as "initiative and resourcefulness in carrying out the work".

<u>It can be concluded that the LOs of 59 VET 3 and VET 4 qualifications in the inventory are in line with the respective NQFS level descriptors (3 and 4). VET education is dynamic system and over the time as a part of the reform process 74 VET qualifications have started as Pilot. 71 VET qualifications have defined LO out of which during 2014 - 2016 VET Council have mainstreamed 59 pilot qualifications based on the QS</u>

Post-secondary VET - Formal 5 – level post – secondary VET qualifications

The sample includes 2 post-secondary VET qualifications. <u>The analysis shows that these qualifications are not based on learning outcomes. Comparison with NQFS level descriptors is therefore not possible.</u> The majority of qualifications were developed in 1997 and since then they have not been updated. The TPP contains objectives and tasks of the subjects as well as topics within each subject. Under the title "Group of work activities and tasks" work competencies (work description) are very well and elaborately defined. Since LO are not defined, for the purpose of analyses identification of knowledge, skills, abilities and attitudes was done based on statement within "Objectives and tasks" of educational subjects. Comparison of given statements (objectives and tasks) and NQF level descriptors could not be done properly, however it was noticeable that there are no statements on "Abilities and attitudes". Revision of these qualification and development of LO is needed.

Higher education - HE qualifications, levels 6, 7 and 8

The sample includes seven HE qualifications. <u>The analysis shows that HE qualifications have statements of LO, formulated as competencies.</u> The HE qualifications are not based on qualification standards and work description. The competencies are divided into general and subject-specific competencies, but are not stated as knowledge, skills, abilities and attitudes. Currently HE has no common methodological approach, neither to LO or to competencies, that relates to levels (cycles) and types of HE qualifications. Also, it seems that there is no common understanding or definition of competencies, statement like „competences i.e. skills" can be found. The competencies are defined in such way that in a single sentences both knowledge and skills are listed such as "Demonstrate the knowledge of and the skills". The standards for accreditation of study programmes include one standard (Standard/Criteria 4 "Competences of graduate students"4) that is related to competences, but this is one standard for all levels in higher education. The analysis shows that the statements of competencies are formulated rather generally with little qualifications' specific elements. This is particularly true for the qualification on the level 8. The content of Standard/Criteria 4 differs from programme to programme. Work

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[37] Annex 4 contains all completed templates for the content analysis

competencies (work description) are not defined instead list of economic entities where student can work is given. <u>The analysis shows that, comparison of HE LOs with NQFS level descriptors is not possible.</u>

Non formal education - Non-formal qualification

The sample includes 7 non-formal qualifications, 3 developed in the CARDS project and 4 developed by NES. In the group of analysed non-formal qualifications there is an obvious difference between qualifications developed within NES and those developed under CARDS project.

CARD qualifications have structured curriculum, same methodology is applied, work description is stated, level of qualification indicated and based on learning outcomes, named "programme outcomes". The "Programme outcomes" are formulated as LO but not classified as Knowledge, Skills and Abilities and Attitudes. <u>CARD qualifications have expressions of LO that are in line with NQFS level descriptors, the only gap identified is regarding the LOs related to abilities and attitudes.</u> Level of qualification is indicated in assigned Nomenclature code as well as a qualification sector to which qualification belongs. Work competencies (work description) are defined but LO are not directly assigned (linked) to work competencies.

For NES qualifications available information is rather poor. NES only provides outlines of training programmes with key competencies, leaving it to the training providers to define LO. NES does not state the level of the qualification. <u>The only available information is that of entry requirements. This makes a comparison of NES qualifications with NQFS level descriptors unreliable.</u>

Legislation on Learning Outcomes

The origin of different approaches and understanding of Learning Outcomes may be in the legal framework: the Law on foundation of education is regulating "General outcomes and educational standards" and student achievements[38]. The Law on Adult education is defining competencies, key and professional[39] and qualifications, the Law on HE is mentioning learning outcomes[40] and the Regulation on standards and procedures for accreditation of higher education institutions and study programs specifies in Standard 4 - Student competencies that competencies are general and subject specific.

4.   Analysis of Quality of Qualification

The Qualification standard is the standard for the quality of qualifications in the NQFS. The qualification quality analysis provides additional information to the inventory about five elements of the qualification cycle: Relevance of the qualification for the labour market, Standards on which the qualification is based, Learning process, Assessment and Certification[41]. Here we describe main outcomes. The completed questionnaires for all selected qualifications are included in annex 5.

Relevance of the qualification for the labour market

In Serbia there is no systemic approach to the analysis of the demand side - needs of economy and labour market. The link to labour market and employment is in an early phase of development and practice varies on different levels of the education system.

The lack of a National Classification of Occupations and related standards of occupations presents a serious hampering gap in respect of qualification relevance. Development of occupation standards is an ad hoc activity (in the part of the system where it exists) that needs to be regulated and mainstreamed into the system. The sector skills councils, once established, will have a major role.

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[38] Article 5 of the Law, paragraph 3, bullet point 1 ""General and special knowledge, skills and value standards of children and students (hereinafter referred to as the general and special achievement standards)".
[39] Article 5 of the Law
[40] Article 28, Content of Study programme
[41] Annex 5 contains all completed questionnaires

In VET, to bridge the gap of missing occupational standards, different methods were used to include labour market actors, such as Functional analyses, DACUM method and Qualification research. In HE labour market actors are not participating in the qualification cycle. Standards for self-evaluation and Quality assessment of higher education institutions[42] regulates in the Standard 4 – Quality of Study programmes that "The higher education institution regularly collects feedback from employers, representatives of the National Employment Service and other relevant organizations on the quality of the study and their study programs". The survey of employers is done as a part of Self evaluation process in HE institution and findings from this survey are not evidently incorporated into Standards for accreditation of study programmes.

In VET practice varies from qualification to qualification, some have listed occupations that are accessible for the holders of qualification some don't. In HE link between occupations and qualifications is not specified. In some cases types of enterprises where graduate student can work are listed.

Standards on which the qualification is based

Looking at the standards behind the qualifications, occupational standards are widely missing. Development of occupation standards is an ad hoc activity (in the part of the system where it exists) that needs to be regulated and mainstreamed into system. Education and Assessment standards are developed in most parts of the system, but different methodologies, understanding and approaches are used.

Periodical modification of VET qualifications is not foreseen or regulated. During the piloting phase when new qualification is tested, revision and changes are common but this stopes once the qualification is mainstreamed into system. Modification of HE qualifications may happen at least every 5 years, which is accreditation cycle. Modification can be initiated by the HE itself or by NCHE.

All qualifications are structured in units, mostly in subjects but lot of them have modules as well.

Learning process

Involvement of social partners (labour market actors) in learning process, practical training is limited. Data and especially statistical data on new learners and graduates are not available or it is hard to find.

Social partners (labour market actors) are involved in professional practice (practical training) part of learning process.

Identification of the % of practical training in curricula is difficult for several reasons. In VET there are different types of classes: theory, exercises, practical teaching and block realisation of practice. The curriculum and syllabus for a three-year secondary vocational education typically consist of 30% of general and 65% of vocational educational content while a four year secondary vocational and arts education typically consist of at least 40% of general and 55% of vocational or arts-related educational content[43].Practical teaching occurs mostly during practical teaching and block but it may happen during the exercises and it depends on how the curriculum is structured. This refers to vocational part of teaching programme (curriculum). Teaching plan for general subjects is published separately. In HE standard 5 – Curriculum contains a list and structure of compulsory and elective courses and modules and their description. Method of teaching is part of annexes to this standard and it is in curriculum plan and programme for individual subjects.

Statistical data on new learners and graduates was hard to find and in some cases not available.

Assessment

The assessments block refers to summative one, which someone has to pass to receive a certificate. The assessment is integral part of Quality Assurance System and is corner stone in building trust in qualifications. Stage of development of assessment standards and quality assurance system differs and depends on the education level and type.

In VET different tasks regarding the assessment are performed by different actors while in HE all tasks are performed by HE institutions. VET qualifications that are based on LO have National Final Exam or

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[42] Official Gazette PS, no. 106/06

[43] Article 72, Law on foundation of education

Matura at the end of education process. The examination commissions are mixed comprising of teachers and external professionals that are assessing student competencies.

The types of assessment are mostly proscribed by the regulations. In VET it is Final Exam and VET Matura and in HE it is final work or PhD dissertations[44]. The types of assessment used are also part of regulations.

Certification

Awarding of the diplomas/certificate is regulated by the Law. It is usually provider that issues the diploma or certificate for the qualifications. Many aspect of qualification (education) system are regulated by laws and published in Education Gazette which in theory should provide transparency of the system. However in attempt to regulate the system, the transparency is lost in the forest of different regulations. Basic information on the qualifications are scattered in different documents and finding them is time consuming.

5.   Recommendations

Based on aforementioned findings, the following recommendations are formulated.

1. NQF and related Law and by-laws need to be adopted in order to solve issues of qualification standard, code, title, levels, and sectors and of the registry of qualifications. The NQF will give incentives for further development of qualifications based on LO, and provide common understanding of qualifications and LO. Application of different approaches, methodologies and understanding of key elements such as LO, QS and work description makes qualification system in Serbia ambiguous. As a consequence for some qualifications comparison of qualifications' LO with NQF level descriptors is not possible. The NQF will introduce common understanding on competencies and LO that should be used throughout qualification system in Serbia.

2. Adoption of NQF should be followed by development of instruments and processes that would enable its proper implementation. Apart from the Law, related by-laws should be adopted that would support uniform implementation of NQF on all levels and types of education. Adoption of the Law will require changes in accreditation standards in HE.

3. Qualification standard should be the bases for including the qualification into the NQF and consequently in the registry. Elements of QS need to be reconsidered when developing the registry and integrated into the structure. Introduction of Qualification standard in education system as whole and making it publicly available will support transparency of the system making it more understandable for the wider public and easier to navigate. According to the data in the inventory, only 33 qualifications meet all elements of the qualification standard[45]; 14 of these are reformed LO based VET 3 qualifications, 19 are reformed LO based VET 4 qualifications.

4. In the secondary Vocational Education and Training, reform process based on Qualification standards and Learning Outcomes should continue. The selected sample of qualifications confirm the right approach in reforming the qualifications, so this should rollout to the rest of qualification that have not yet been reformed. The qualification content analysis shows that Learning Outcomes of 58 VET 3 and VET 4 qualifications in the inventory are in line with the respective NQFS level descriptors (NQFS level 3 and level 4).

5. Higher Education qualifications need to be aligned with NQF requirements. This implies changes in standards, accreditation criteria and procedures. This process need to be organised and planned to enable transition from current practice to HE qualifications relevant for the labour market, based on Qualification Standards and Learning Outcomes (knowledge, skills, abilities and attitudes).

6. In non-formal education different practice and approaches were present so introduction of NQF will support unified practice when it comes to including non-formal qualification into NQF. The

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[44] Article 20, Law on HE

[45] Except for the qualification code and the qualification sector which have yet to be defined.

works on development of adult education (non-formal education) as well as on RPL need to continue. Since this work is carried out in parallel with development of NQF coordination and synergy need to be secured.

7. The inventory presents a good analytical tool but should also be used as starting point for developing the national registry of qualifications. The inventory presents a comprehensive and complete list of active qualifications in formal education in Serbia.

8. Regarding the needed statistical data it is necessary to include requirements deriving from the qualification registry and NQF into overall education, labour and employment statistical data collected. Also, methodological approach in collecting data needs to be harmonized. This refers mostly to the data on students that have been collected in the National Statistical Office. Statistical data collected by different institutions and by different methodologies need to be aligned.

9. There is a need to build systemic regulated approach to social partnership and their involvement in the qualification cycle. A model of social partnership needs to be developed and implemented, not only in identification of qualifications and related qualification standards, but also in developing curriculum and including social partners in implementation of educational programmes and assessment. On national level Sector Skill Councils need to be established and secure relevance of qualification.

10. National Classification of Occupations and related occupational standards need to be adopted and mechanisms for further development need to be designed and linked to the NQF. Within the framework of social partnership, the Ministry responsible for education and the Ministry responsible for labour and employment need to find an institutional arrangement to house, maintain and develop the National Classification of Occupations and occupation standards as well as NQF.

11. The relevance of qualifications needs to be assessed, especially for qualifications that are not based on work descriptions. On the system level this requires establishment of SSC that can assess the relevancy of individual qualifications for the sector. It is necessary to develop instruments, methodologies, processes and institutional setting for development of occupational standards. In Serbia there is no systemic approach to the analyses of demand side, economy and labour market needs. This presents a gap in the qualification system that need to be closed with the adoption of the NQF. Although selected secondary VET qualifications have work descriptions, the analysis of work was done for individual qualifications and ad hoc.

12. National registry/catalogue of qualification should be made available to the public and institutional arrangements and responsibilities in developing and maintaining the registry need to be defined.

13. Although revision of qualifications is not foreseen on the system level it needs to be introduced and carried out in organised and planned manner. Planning the revision of qualification would enable more systemic overview at the need for change the qualifications.

14. Assessment standard need to be firmly linked to LO. The LO are defining aspect in devising assessment standards and assessment types.

15. The qualification system need to be made more transparent and user friendly, making basic set of qualification data available for the wider public.

6. Conclusions for EQF Referencing

EQF Referencing is the process that results in the establishment of a relationship between the levels of national qualifications, usually defined in terms of a national qualifications framework, and the levels of the EQF[46]. The successful referencing to EQF depends on fulfilment of 10 Criteria[47]. Out of 10 Criteria

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[46] Referencing National Qualifications Levels to the EQF Update 2013, European Qualifications Framework, Series: Note 5

[47] "Criteria and procedures for referencing national qualifications levels to the EQF", at:
http://ec.europa.eu/ploteus/sites/eac-eqf/files/criteria_en.pdf

two have been selected for closer consideration. Based on the above-mentioned findings closer examination will be done related to the Criteria 3 and 4.

Criteria 3 - The national qualifications framework or system and its qualifications are based on the principle and objective of learning outcomes and linked to arrangements for validation of non-formal and informal learning and, where these exist, to credit systems.

Adoption of NQF and related Law will set a benchmark for composition and formulation of LO. Although some qualifications are already based on LO and are in line with proposed draft NQFS, the work on aligning remaining VET qualification and HE is ahead. The draft NQFS provides for inclusion of non-formal qualification into NQF as well as for acquiring qualifications through RPL. Based on the Law on Adult education, preparations for accreditation of non-formal providers and programmes are on its way. Also in February 2015 draft Concept for RPL was developed and sent to the MoESTD. Following the adoption of NQFS the work needs to focus on building infrastructure for its functioning. This will encompass creating methodologies for development of QS, and LO based curriculums, establishing social partnership between labour market/economy and education, developing procedures and institutional framework for inclusion of qualifications into NQF and related registry, overall for functioning of NQF.

The situation regarding credit system differs HE and for VET. In HE the system of European Credit Transfer System (ECTS) was introduced with the Bologna process, so the qualifications in HE have assigned credits. For VET a qualification, the European credit system for vocational education and training (ECVET) has not been introduced yet, however it is planned that ECVET will be introduced by 2020.

Criteria 4 - The procedures for inclusion of qualifications in the national qualifications framework or for describing the place of qualifications in the national qualification system are transparent.

The adoption of the NQFS and related Law and by-laws will provide the foundations for implementing the NQF, including populating the NQF with qualifications. Implementation requires an institutional framework for strategic guidance and coordination of the NQF, procedures for inclusion of qualifications into NQF, criteria and procedures to make decisions on the inclusion and the level of individual qualifications, methodologies for the analysis of the relationship of a qualification with an NQF level, etc.

On the issue of including individual qualifications into the NQF, it is common understanding among NQF WG members that only qualifications in compliance with defined criteria and that undergo an accreditation procedure can be included into the NQF. Minimum criteria are that a qualification is based on a QS and has defined LO as knowledge, skills, abilities and attitudes. Procedures for inclusion of qualification into NQF will need to be developed, having in mind all levels and types of education.

At this moment only secondary formal VET qualifications that have been reformed are fulfilling the criteria, and can be considered for inclusion into NQF.