



The European Union's IPA programme  
for Bosnia and Herzegovina

# EU support to vocational education and training in Bosnia and Herzegovina IV

EuropeAid/128398/C/SER/BA

Handbook:  
Development of occupational standards

December 2012



This project is funded by  
The European Union

**AARHUS  
TECH**

A project implemented by  
AARHUS TECH

# **EU Support to vocational education and training in Bosnia and Herzegovina IV**

EuropeAid/128398/C/SER/BA

**Contract No 2010/253-346**

Implemented by:

AARHUS TECH (lead partner)  
PEM GmbH  
CAPITA International Development



## **Preface**

The main purpose of this handbook is to explain the methodology, adopted by the VET Department of the Agency for Pre-primary, Primary and Secondary Education BiH and the 'EU Support to Vocational Education and Training in BiH IV' (EU VET 4) project, for the procedures that were used to develop occupational standards in the occupational family 'Agriculture and Food Processing' during 2012.

An additional purpose is also to record the 'lessons learned' from carrying out this activity.

As all relevant stakeholders, such as VET and technical schools and relevant institutions in the field of education and labour in BiH, have had no experience in dealing with occupational standards, the activity had to start with a decision on which methodology should be used. Then, the activity continued with testing of the selected methodology and consequently obtaining experiences, based on which the decision on mechanisms for development of occupational standards was made.

These organizational settings are described in a road map (separate document), recommending the steps and timeframe towards a fully developed system of occupational standards within the VET system in BiH.

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# 1. BACKGROUND INFORMATION

First a *definition* to make it clear what the term *occupational standards* mean in this handbook:

*Occupational standards* specify 'the main components of a job that people do', describing the professional competences typical for a jobholder who can successfully perform that occupation.

*Occupational standards* answer the question 'what does the learner need to be able to do in employment?'

In general, the development of occupational standards is based on the expectation that by describing employment requirements (occupational standards) on one hand, and training specifications (training standards) on the other hand, it is possible to make clear the relationship between employment and education and to improve the match between demand of the labour market and the provision through education and training.

Hence, occupational standards reflect on-going economic and technical changes in an economy and a society in general. It is important that the occupational standards are kept updated as they create the basis for mirroring the changing skill demands in the labour force.

There are several major methodologies for developing occupational standards used throughout the world, all of which start with analysing what people in a certain occupation do. In spite of this common start, methods differ considerably and so does the design/outlook of occupational standards that result from the analysis.

## 1.1 Brief history

The EU VET 4 project commenced on 17 January 2011 with duration of 24 months. The purpose of the project was:

*'To support institutional and capacity building in vocational education system in Bosnia and Herzegovina in line with the Copenhagen Declaration through the further development of Qualifications Framework in BiH and support in implementation of the Framework Law on Vocational Education and Training in Bosnia and Herzegovina.'*

The project was implemented through 3 components of which *Component 1* had the following aim:

*'Strengthening the vertical and horizontal mobility in education system in Bosnia and Herzegovina in the European education area through the further development of Qualifications Framework in BiH.'*

The results under *Component 1* were interrelated; those were development of Qualifications Framework, development of occupational standards and training standards, harmonisation and piloting of curricula, development of specific descriptors, development of handbook on the development of occupational standards and road map for the development of occupational standards for all occupations.

### Results and related activities in *Component 1*:

- Development of occupational standards
- Development of training standards/learning outcomes
- Updating of curricula for the selected occupations

The project organized its activities associated with developing occupational standards around working groups that were selected from stakeholders in order to ensure involvement from representatives of relevant ministries in BiH (such as Ministry of Civil Affairs of BiH, entity and cantonal ministries of education), the VET Department (a department in the Agency for Pre-primary, Primary and Secondary Education of Bosnia and Herzegovina), pedagogical institutes, VET and technical school directors and teachers, and representatives of chambers of commerce in BiH, etc. These groups participated initially in seminars that informed participants how other countries developed occupational standards, the methodologies that currently exist and which designs other countries had utilised, as well as the training seminars on interview methodology and methodology for development of occupational standards.

Bosnia and Herzegovina (BiH) has already gained some experiences in collecting data for occupational standards within the EU VET 3 project. Representatives from social partners had made interviews with selected companies and given the data to vocational teachers who then used this data for revision of curricula. However, the collected material was not processed to establish occupational standards as such, but only as an additional and supportive input for the revision of specified curricula. It meant that some of the teachers from the pilot schools in the EU VET 4 project were familiar with the questionnaire that had been developed in the EU VET 3 project. A working group for establishing the methodology to develop occupational standards decided to take up again the interview methodology but with an improvement of the questionnaire previously used to collect data.

The intention relating to the application of the interview methodology had an additional purpose — to support the basis for further development of co-operation between the labour market and the VET and technical schools, and other relevant stakeholders, and to produce recommendations for mechanisms to be established for the continuation of the development of occupational standards in other occupational areas.

## 2. THE METHODOLOGY USED FOR COLLECTION OF DATA ABOUT OCCUPATIONS

### 2.1 The interview methodology

As mentioned previously, there are several methodologies that *can be* applied for the collection of information necessary for the development of occupational standards.

One of the most well-known is the DACUM methodology where workshops are held for approximately ten employees or their direct supervisors within the agreed occupation. During the workshop, the occupation (job) is classified according to specific duties and tasks. The DACUM methodology includes, in addition to occupational specific duties and tasks, the separate identification of work enablers: general knowledge and skills, worker behaviour (personal traits and interpersonal skills), and the tools and equipment used.

Example:

Job: Secretary

Duty: Organise meetings (one of the duties)

Task: Distribute the materials for the meeting (one of the tasks related to that duty)

These procedures used in the DACUM methodology were taken into account when establishing the *interview methodology* used within the EU VET 4 project. However, instead of calling in a group of employees or their direct supervisors for a workshop, the interviewers travelled to the companies to conduct the interviews with employees or their direct supervisors. This was of benefit to the companies in that the only time they had to ‘waste’ was that to participate in the interviews. Moreover, this was beneficial to the teachers as well, since they had the opportunity to get familiar with the company’s facilities, i.e. possibilities for students in the case of future cooperation between the school and the company.

As with the DACUM methodology, there are certain phases required to complete the collection of data within the *interview methodology*:

- Preparation and adaption of the questionnaire to the occupation that will be analysed — where some special information might be needed
- Ensuring the interviewers are well prepared
- Logistical organisation of the interviews (e.g. selection of companies, arranging appointments...)
- Conducting the interviews

#### 2.1.1 Preparation and adaption of the questionnaire

Questionnaires to be used for analysing an occupation can look very different, but basically they contain factual data about the company (number of employees, business organisation, main products or services). Besides this information, the focus can differ and be changed according to the target. By analysing the competences of the employees (which is the aim here), the occupation will be broken down into daily duties that are further divided into tasks.

As only the jobholder or his/her direct supervisor can do that in an effective way, it is important to gather data from the jobholder or the direct supervisor and no one else. When it later comes to description of the occupational standards, the competences are extracted from a list of duties and tasks that are performed daily by the jobholder.

The EU VET 4 project team, in collaboration with stakeholders, decided to use the interview method, and the existing questionnaire developed by the EU VET 3 project team. This had to be reworked by changing the boxes where information about major and minor tasks previously had to be filled in for the occupation in question. These boxes were changed to descriptions of duties and an indication of the percentage of time used in the daily work on each of these duties. The interviewed person (jobholder or direct supervisor) was then asked to break down each of the duties into tasks.

In order for the interviewers to understand the meaning of duties an example was provided with percentages included. See Annex A.

### **2.1.2 Preparation of interviewers**

In the EU VET 3 project, the social partners conducted the interviews, but in the EU VET 4 project, the arrangement was to engage teachers from the pilot schools to carry out the interviews. During the Inception period, it was decided to develop occupational standards for the ten occupations from occupational family 1, 'Agriculture and Food Processing'.

As none of the teachers had conducted interviews previously (for the purpose of developing occupational standards), the preparation was focused on training in interview techniques. Therefore, a number of seminars were organised where teachers and representatives of other relevant stakeholders (the VET Department of the Agency for Pre-primary, Primary and Secondary Education of BiH, Ministry of Civil Affairs of BiH, pedagogical institutes, and chambers of commerce in BiH, etc.) were trained. Support materials are shown in Annex B1 and Annex B2.

As the learning of the theoretical materials mainly gives the best results by application of the theory in practice, it can be recommended in the training situation to organise simulated interviews. The best would, of course, be if some real interviews could be conducted in the beginning, as practice, but in their absence, simulations between the participants can also provide good training.

## **2.2 Data collection methodology**

It was agreed that the EU VET 4 project team would generate the list of relevant institutions/companies to be contacted for interviews. The project team conducted a research on relevant institutions/bodies – both their actual number and their contact details – which would provide data on the institutions/companies to be contacted for interviews.

The research showed that there were 14 Chambers of Commerce and 12 Chambers of Crafts in BiH. The project team contacted them by fax, email and/or by phone kindly asking for a list of relevant associations and institutions/companies that, firstly, would be able to provide the relevant information and secondly, would be willing to participate in the interviews.

In addition to contacting the chambers, the project team contacted a number of additional institutions/bodies such as Employment Institutes (FBiH and RS), Association of Employers BiH, Association of Agricultural workers/farmers (Central Bosnia Canton), Union of Associations of Organic Food Producers in FBiH and NGO focused on Organic Food Production – ECON and some cantonal governments and ministries (Government of West Herzegovina Canton and Government of Canton 10, and Ministry of Forestry, Water Management and Agriculture of Central Bosnia Canton, Ministry of Economy of West Herzegovina Canton).

### **2.2.1 Tools used**

- Internet-based research
- Telephone enquiries
- Sending of fax letters and emails to relevant institutions/companies
- Telephone reminders and provision of additional clarification (when necessary)
- Grouping/sorting of the collected data

All the information obtained about the relevant institutions/companies was presented to the teachers of 40 nominated pilot schools from BiH at the first teacher training seminar. On that occasion the teachers were asked to provide information on some additional employers worth visiting, as well as to sign up for the companies which they would like/prefer to interview (preference was based on the vicinity, subject taught, already existing cooperation etc.). The optimal situation was to have approximately ten companies within the same occupation to be interviewed by each teacher.

### **2.2.2 The interviews**

Thirty-one teachers were active in the interview process within the EU VET 4 project — they conducted a total of 85 interviews involving 62 companies. The interviewing teachers made the initial contact and appointment with each of the companies and a letter, prepared by the EU VET 4 project, was then sent to each company to inform it about the purpose of the interview and to explain the general conditions in relation to the overall activity.

### **3. THE METHODOLOGY USED FOR THE PROCESSING OF OCCUPATIONAL DATA FOR THE DEVELOPMENT OF THE OCCUPATIONAL STANDARDS**

#### **3.1 From interview results to Occupational Standards**

For this chapter it is important to refer to Annex C.

The model or design of the Occupational Standards (Annex C) is divided into two parts:

**Part 1** – list of overall competences

**Part 2** – knowledge, skills, and personal competences for each of the overall competences

#### **3.2 Development of Part 1 — list of overall competences**

The key elements of the questionnaire (Annex A) are questions number 12 and 13.

The source to create the list of the overall competences is derived from question number 12:

*‘Duties/responsibilities of the jobholder (providing 6-8 major duty areas). For each of the duties an estimation of the average percentage of time used to perform the duties has to be included. In addition, for each of the duties the interviewer will ask to get a further specification of the duties by listing the tasks that are connected to perform the duties.’*

To use the data obtained from the questionnaire, please do the following:

- Collect all the duty results of the interviews within the occupation in question, keeping in mind the data about the duties that most often lead to the overall competences.

List all the duties to see if there are any similar to each other, e.g. wording that could indicate that the duties are strongly related. If that is the case it is a strong indication that it must be an overall competence. If any of the duties are difficult to understand, take a look at the tasks beneath each of the duties — they may indicate what is meant by the duty. Some of the interviews may show a very specific duty that may not be relevant for other companies. Should this happen, the value of that duty has to be evaluated from a professional point of view.

Normally a job contains approximately 6–10 duties, at least when we are dealing with qualification level 3 (3 years education) and even more when we are dealing with qualification level 4 (4 years education). It is also possible to consider the percentage of time used — it may be useful to split the duty having the highest consumption of time.

Those duties similar to each other are first written down, individual ones are evaluated if they have the value as a duty or are more a task connected to one of the duties.

- Establish the tasks for each of the duties.

A good advice is to wait with the description of the overall competences until you have established the required knowledge, skills and personal competences (Part 2). By considering an overview of the knowledge, skills and personal competences required, you more easily find which verb is best to describe the overall competence in question.

Here is an example following the procedures above, applied for 'Milk Processor' where five interviews were conducted within the EU VET 4 project. All data used here are derived from those five interviews.

The duties are obtained from the questionnaires, listed without any evaluation as to whether it sounds reasonable or not. (Please, note that during the interviews not all duties were marked with a percentage.)

Interview number	Interview results
1.	Preparation and planning of daily production (30%) Supervision of implementation of plan (50%) Supervision of quality of products (10%) Preparation of sale of products (10%)
2.	Chemical examination of milk products (70%) Inspection of the cleanness of machines for milk processing after pasteurization (25%) Inspection of cleanness of transportation means (5%)
3.	Processing of milk (100%)
4.	Purchase of milk (10%) Receiving of milk in dairy (10%) Work on production line of pasteurized milk (40%) Work on production line for production of yoghurt (40%)
5.	Receipt of milk Processing of milk Storing of milk

### 3.2.1 Comments

The results of the first interview, by reading the wording – *planning and supervision* – indicates that something might be wrong here, because *planning* and particularly *supervision* are normally not words that are connected to the job as a *milk processor*. These words are connected to level 4 in the *Baseline of Qualifications Framework in BiH*. The exact problem which from time to time can occur is that the interview here was made with the manager of the dairy and s/he explained about her/his own duties and tasks. This is a good example of what will happen if the interview is not conducted with the jobholder or the direct supervisor. The rest of the interviews (numbers 2-5) were made with milk processors and gave, therefore, the right information.

*Processing of milk* is mentioned a couple of times and in particular one interview indicates that 100% of the time is used on that performance, so it turns out for sure to be one of the overall competences.

When looking at some of the tasks detailing what is inside this duty, *receipt of milk* is also indicated as one of the competences which could make sense.

A couple of times one of the interviews, under the tasks, also mentioned the *purchase of milk*.

### 3.2.2 Conclusion

By comparing the duties and looking at the tasks behind them and observing the indication of percentage of time spent on the duty, the list of competences for the *milk processor operator* might be:

1. Purchase of milk
2. Receipt of milk
3. Processing of milk
4. Production of yoghurt
5. Storing of milk
6. Sale of products
7. Cleanness/hygiene
8. Quality

### 3.3 Development of Part 2 — knowledge, skills, and personal competences for each of the overall competences

Here we start with the list of overall competences that we find above.

Under each of the overall competences you have to list all the tasks related to that competency. Sometimes you will have to evaluate which of the competences you think the task is mainly related to.

Delete those that are duplicated.

Here is the example which is extracted from the results of interviews for 'Milk Processor':

#### 1. **Purchase of milk**

- Taking care of hygiene of purchase place
- Determination of organoleptic properties of milk
- Keeping records on the purchase of milk
- Measure and keeping records on the temperature of milk
- Checking of the repurchase of milk
- Quantities of milk divide according the kind of product
- Supervise physical division of milk
- Check chemical parameters
- Assign instruction to workers in laboratory, production facility and trade (*Comment from the author: looks more to be the supervisor job*)

#### 2. **Receipt of milk**

- Purchase of milk
- Examination of sourness of milk / pH of the cheese

- Examination of whey
- Detection of defective food
- Separation of unusable/usable raw materials/products
- Short description of results of analysis – record results on the analysis of the milk
- Decide if milk is ready for processing
- Taking samples of milk
- Measuring of quality of received milk and measuring of flow
- Organoleptic assessment of milk
- Identify colour of milk depending on percentage of milk fat
- Identify indicators and samples of milk spoilage
- Operating the centrifugal cleaner of milk
- Operating the classifier
- Receipt of milk at receipt ramp
- Weighing of milk

### **3. Processing milk**

- Preparation of pasteurizer
- Pasteurization
- Washing of pasteurizer, milk pipes, cream pipes, tank, receiving milk pipes, plant
- Standardisation of milk
- Work on centrifugal separator
- Monitoring of homogenised milk
- Knowledge and handling the deodorizer
- Monitoring and recording of pasteurisation course
- Carry out proper pasteurisation of milk
- Carry out proper homogenisation of milk

### **4. Production of yoghurt**

- Monitoring of work and temperature of refrigerator
- Maintenance of tanks for storing of milk
- Monitoring of charging tanks
- Monitoring of inoculation of milk
- Identification and use of respective culture
- Monitoring of incubation in duplicator
- Control and achievement of proper acidity
- Prepare starter culture and carry our sowing
- Produce fermented products
- Making yogurt

### **5. Storing of milk**

- Preparation of chamber for storing
- Definition of factor for proper storing
- Sanitation of chambers and storage

### **6. Sale of products**

- Packing for sale
- Filling /packaging
- Inspection of product design

- Packaging and transportation
- Use materials for packaging and work on machine for packaging

### **7. Cleanness/hygiene**

- Inspection of washing of tanks, pressures, basins
- Assessment of washing
- Recommend repetition of washing process
- Record results of inspection
- Carry out analysis of samples (on transport means)
- Maintenance of work place and workspace hygiene
- Knowledge on daily schedule of work and washing of entire line
- Control of hygiene
- Chemical examination
- Maintenance of hygiene of tank for transportation of milk
- Maintenance of CIP system for washing

### **8. Quality**

- Assess quality of maintenance/record results of analysis (transportation means)
- Impact on quality of work
- Visual control
- Inspection of smell and taste
- Checking of chemical analysis result

These tasks that are now listed beneath the competences have to be grouped into knowledge, skills and personal competences.

Then you have to add the listed knowledge, skills and personal competences obtained from question no. 13. Sometimes it is easy to see which duties they relate to, sometimes not — you have to use your professional experience.

Please pay special attention to the list of future requirements — they can be very useful indicators.

The knowledge, skills and personal competences have to be described in such a way that the statement starts with a verb. It is also important that they comply with the required level generic descriptors, as defined in the *Baseline of Qualifications Framework in BiH* (in this case either level 3 or level 4).

In the same way, the overall competences have to be described with adequate verbs.

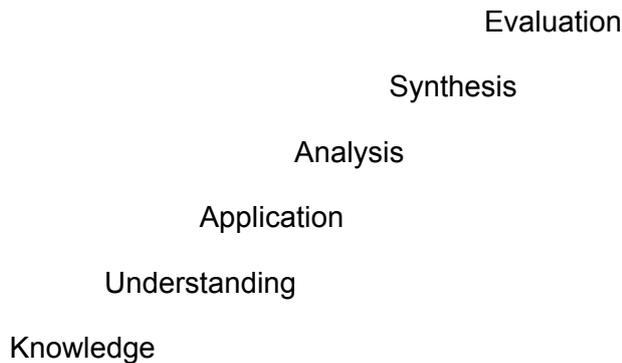
The final version of 'Milk Processor' occupational standards can be found in Annex D.

### 3.4 Taxonomies

The selection of the verb has to be considered carefully to ensure that everybody understands the descriptions in the same way. All statements must be measurable.

With the use of Bloom's<sup>1</sup> taxonomy as the starting point, performance-based descriptions are classified at different levels.

Benjamin Bloom divides the cognitive domain into six levels.



Performance descriptions at the lowest level (i.e. knowledge) require the jobholder to recognise or recall correct facts, data, or information.

Performance descriptions at one level higher in the cognitive domain require jobholders to do more than simply recognise or recall factual information correctly. They also require jobholders to **use** that information in some way. Performance descriptions at the second level of cognitive domain (i.e. understanding), for example, may require jobholders to summarise, interpret, translate, or paraphrase facts, data, or information. Descriptions at higher levels may require application, analysis, synthesis, or evaluation of information.

The core issue is to select the correct verb, because the verb also indicates the difference in levels of application.

If we, for example, compare the verbs 'list' and 'explain', it immediately indicates a difference in levels. For example, if the occupational standards state that the jobholder in a bakery is able to 'list the ingredients in the recipe', it is only a pure repetition from the memory (knowledge level according to Bloom), but if it states that the jobholder is able to 'explain the ingredients in the recipe', it indicates that the jobholder also has to have an understanding as to why the ingredients are there.

Each performance description has to have a similar grammatical structure. The first part is a description of the action or actions required to perform. This is a verb. Then comes the object of the action, using a noun or nouns. Finally, and if necessary, the context of the action — this could be the purpose of the action, to whom the action is directed etc.

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<sup>1</sup> Benjamin S. Bloom, ed. *Taxonomy of Educational Objectives, Handbook 1: Cognitive Domain* (1956)

Here are two examples of performance descriptions.

The action (verbs)	The object of the action (nouns)	The context of the action
serve	food and drinks	to customers
receive and check	the quality of raw materials	for bakery and confectionery production

Verbs typically used to describe how knowledge will be demonstrated include the following:

apply	describe	interpret	recognise
analyse	discuss	justify	relate
calculate	evaluate	label	resolve
classify	explain	list	select
define	formulate	name	solve
derive	identify	prove	state
summarise	tell	underline	write

Verbs typically used to describe the performance of tasks, steps, or skills include the following:

open	check	turn	select
close	locate	calibrate	fill
start	inspect	set	repair
stop	communicate	throttle	assemble
trip	measure	regulate	develop
vent	respond	adjust	select
collect	verify	rotate	replace
conduct	submit	tighten	remove

For an extended list of verbs, please refer to Annex E.

Please note: Experience gained by those people who have been involved in completing this activity, gained over a period measured in decades, indicate that substantial problems occur in practice if either of the verbs '**understand**' or '**know**' are used in performance descriptions.

## **4. EVALUATION OF THE INTERVIEW METHODOLOGY**

In the light of the introduction of occupational standards development as a new element in the reform of VET in BiH, this pilot activity requires evaluation in order to establish the positive and negative experiences and lessons learned. This forms the basis on which the methodology can be further improved and thus to a higher extent serve its purpose.

The evaluation used here focuses on different aspects of the interview methodology:

- 1) Preparation of the interviews
  - a. Contact with companies
  - b. Preparation of teachers (interviewers)
- 2) Experiences from interviews – positive and negative
- 3) Recommendations for the future application of the interview methodology

The data for this evaluation were partly collected by orally asking the interviewers to state three positive and three negative experiences from their interview activity, and partly by having the interviewers complete a questionnaire concerning the interviews.

Thirty one teachers acted as interviewers out of which twenty six participated in the evaluation research.

### **4.1 Contact to companies**

It requires a substantial amount of time to organise interviews in companies, therefore to save time for the teachers, the EU VET 4 project team assumed the responsibility to research the relevant companies that could be contacted for interviews and obtained their contact details.

The project team sent a request to the following bodies in order to obtain lists of relevant companies:

1. Chambers of Commerce (RS, cantonal and BD level)
2. Chambers of Crafts (RS, FBiH, cantonal level)
3. Employment Institutes (FBiH and RS)
4. Association of Employers BiH
5. Association of Agricultural workers/farmers (Central Bosnia Canton)
6. Union of Associations of Organic Food Producers in FBiH
7. NGO focused on Organic Food Production - ECON
8. Government of West Herzegovina Canton
9. Government of Canton 10
10. Ministry of Forestry, Water Management and Agriculture of Central Bosnia Canton
11. Ministry of Economy of West Herzegovina Canton

In total, 23 fax letters and 15 emails were sent out. Both before and after sending the faxes and emails, telephone enquiries were conducted. The reasons for telephone enquiries were manifold: obtaining accurate contact details; checking whether the contacted

institutions/companies received/read the faxes/emails; urging the contacted institutions/companies to reply. Thus, more than 60 phone calls were made in this process.

It was discovered that two cantonal chambers of commerce were almost non-operational anymore. This was the case with the Chamber of Commerce of West Herzegovina Canton and the Chamber of Commerce of Canton 10. Therefore, the inquiries were addressed to the relevant cantonal governments and subsequently, in the former case, to the cantonal ministry of economy.

Finally, out of over 30 contacted institutions, only 11 provided their concrete contributions covering the companies in the Federation of BiH and Republika Srpska. Unfortunately, no information on relevant employers in Brcko District was provided. One cantonal Chamber of Crafts replied that none of their members was interested in being interviewed since they considered it a waste of their valuable time. Two contacted bodies referred the project team to other institutions (cantonal ministry of agriculture or cantonal employment institute). The remainder of the contacted institutions did not provide any reply.

This contacting process might appear complicated and tiring, particularly in the beginning where none of the organisations or companies knew or understood the purpose relating to the collection of information relating to the employees' competences, the process can seem to be impossible and a good deal of patience is required. Nevertheless, 31 teachers participated in the interviewing process — they conducted 85 interviews, involving 62 companies in total.

## **4.2 Preparation of teachers (interviewers)**

The interviewers (teachers) made the initial contact and appointments with the companies. A letter was then sent to each company to inform them about the purpose of the interview and the general information about the overall process.

The teachers had been trained in interview techniques at seminars organised by the EU VET 4 project, and used the Interview Guide developed by the EU VET 4 project team (Annex B1) as a preparation. For many teachers it was the first time they conducted such an activity and they would need further practical training to improve their interviewing skills, should they be required to repeat this activity.

## **4.3 Experiences gained from carrying out the interviews**

The interview should be conducted involving the jobholder (or the direct superior of that jobholder) for the occupation in question and the interviewing teacher (or better still, with two or three teachers). In some of the companies, it was not possible to meet with the jobholder or his/her direct supervisor, so instead the interview involved a manager at a higher level. In practice, it was discovered that this manager did not usually have sufficient knowledge of the worker's real activity. The teachers were conducting the interviews on a voluntary basis and did not have the sufficient time to co-ordinate the interviews in order to ensure that more than one person conducts the interview. This ended in the situation that the same person had to conduct the interview as well as write the notes and complete the further processing of the collected data. It would be recommended that two or three people carry out the interview together. For some of the occupations it was not possible to obtain, say, 10 companies for interviews, but as long as the interviews were regarded as providing a qualitatively high output, it was considered sufficient.

Here is an extract of the results of the **oral questions** asked of the interviewers in terms of their 3 positive and 3 negative experiences in interviewing:

**Positive:**

- Direct contact with producers
- Encounter with the new technologies
- Gaining insight in problems that employers are facing – it is useful for the teachers to be familiar with them
- Cooperativeness
- Employers welcomed the initiative and interest from the side of education in the needs and problems of the labour market
- Insight into organisation of work in a certain company/occupation
- Some companies expressed their interest for cooperation with the school (e.g. through having more students in their company for practical classes, some of those students could also start working there after schooling)
- Readiness for cooperation and provision of information necessary for the teaching process (curriculum)

**Negative:**

- In general, the employers show low interest in the education system, they are more concerned with their problems
- Limited time – most of the companies regarded that an hour will be sufficient for conducting of the interview which sometimes proved insufficient. However, at the end of the interview they offered a possibility of having an additional meeting in a week or two, but the teachers did not have that much time at their disposal
- Coordination of interview time – employers do not have enough time for conducting of interviews
- It proved difficult to be simultaneously asking questions and writing down the answers
- Mistrust on the side of employers who asked why the interviews are being conducted, what the obtained information will be used for, etc. However, after explanation they were cooperative
- Obtained insufficient data on the company

Results of the **written questionnaire** filled in by the interviewers:

26 interviewers answered the questionnaire. They were allowed to tick more boxes under the same question.

1. As a preparation to the interview did you consult the "Interview guide" that was produced by EU VET 4 for this particular event about making interviews?
  - yes -26
  - no

If yes, was the "Interview Guide" ?

  - useful, gave a good Introduction -24
  - not useful
  - very general and therefore not of any help- 2
2. Who made the appointment with the company?
  - yourself - 26
  - a colleague- 2
  - others
3. How many companies did you have to contact before you succeeded to get an appointment?
  - 1 - 10
  - 2 - 5
  - 3 - 3
  - more - 8
4. Regarding the company where you made the interview, was that company totally new to you or a company you had heard about before, even visited before?
  - new to me -1
  - heard about - 10
  - visited before - 1
5. How often do you visit companies for educational purposes, e.g. visit student practice, following a production, etc. ?
  - never - 2
  - once per month - 5
  - other\_\_\_\_\_ 19

6. If you should do interviews another time what would you do differently?

- *Try to visit more companies that are in the same business*
- *I would better prepare all the details. I would take an assistant so the interview would be more useful*
- *I would try to get rid of thinking about our curriculum which I kept in mind when asking questions*
- *I would do it in the same way as it has proven to be effective and the results were useful in developing standards*
- *I would conduct the interview with production workers*
- *Next time we will be 2 persons who can appropriately record the answers*
- *I would additionally conduct the interview with employees at the company who have the freedom of speech*
- *I would insist to meet a particular key profile in the choice of interviewees in the company, otherwise the interview does not provide the precise results*
- *Prepare the questions better*
- *Ask more questions*
- *Visiting the company before the interview*

7. Do you think the interview methodology can be applicable in the future for development of other occupational standards?

- yes- 26  
 no

7. How many hours do you think would be appropriate for the interview to give sufficient results?

\_\_\_\_\_ hours  
*most have suggested an average of 3-4 hours*

8. Do you see a future need for development of occupational standards for other occupations offered by your school?

- yes - 22  
 no - 4

9. If "yes" which one?

*Economist, textile occupational family, mechanical engineering occupations, wood-processing, forest technician, health occupational family.*

Additional comments:

*Most of the interviewers were of the opinion that occupational standards should be developed for all occupations.*

*Besides, majority of them indicated that teachers will, by making interviews, get a much better knowledge about which competences the companies actually need.*

## 5. CONCLUSIONS AND RECOMMENDATIONS FOR THE FUTURE APPLICATION OF THE INTERVIEW METHODOLOGY

Based on the testing of the methodology and the stated evaluation the following conclusions and recommendations can be made:

### Conclusions

- The methodology selected to develop occupational standards (interview methodology) was chosen as it is a cost effective methodology that is appropriate to the context of BiH
- Developing occupational standards is a skill — the more developers practise, the better they get (and consequently, the better is the developed occupational standard)
- As a result of the above point, the development of occupational skills should be seen as a cyclical process, involving review and improving/updating (to also take into account any changes in workplace practice)
- Contacting companies takes time — many telephone calls have to be made and emails or faxes to be sent. Do have patience and tenacity, and you will succeed.
- Developing occupational standards is also an awareness raising activity — it takes time before schools and companies can observe the tangible benefits of such communication
- When processing the collected data, it is important to be careful when describing the competences, taking into account the qualification levels specified in the *Baseline of Qualifications Framework in BiH*.

### Recommendations

- A strategic plan should be established for the systematic development of occupational standards for all occupations in BiH
- Establish a cyclical process, stating when review and updating might take place
- Establish a system where occupational standards are integrated into the development or review of curricula/qualifications
- Establish an effective database of contact information that can be used when contacting organisations and companies.
- Develop a simple yet effective introductory letter for companies. This has to be simple but still informative, fast to read, attract attention immediately, written in a way that it is a win-win situation for both the companies and the schools
- Develop specific materials that give concrete information about the timeframe, the need for a location for the interview, and who should participate
- Try to arrange approximately ten interviews per occupation to gather the required information
- Adapt the questionnaire to the occupations in question, you may need specific information
- Ensure that the interviewers are well trained and well prepared

- Organise the interviews to be made by more than one person – the optimum result can be achieved by having one or two vocational teachers together with a teacher from one of the general subjects – important is that the teachers have agreed in advance which role they take, who is asking the questions, who is making notes and finally who will take care of processing the data – only one or all two or three together
- Ensure you can revisit the company if you would need some issues to be further elaborated
- As interviews normally are made in a limited number of companies, it is recommended to send the draft occupational standards to other companies than those interviewed to verify the standards
- Standards need to be kept updated – establish a review/update cycle.

# Annex A

## QUESTIONNAIRE FOR IDENTIFICATION OF OCCUPATIONAL REQUIREMENTS

Occupational family:

Name of the occupation:

<b>A</b>	<b>IDENTIFICATION OF ENTERPRISE / ORGANIZATION</b>
----------	--

1. Name of Company / Institution:

Region / Canton:

Address:

Phone:

Fax:

E-mail:

Web site:

2. Form of the ownership:

public

private

other

**3. Contact person(s) interviewed:**

First and last name:

Qualifications:

Position:

Phone/mobile:

E-mail:

**4. Sector / main economic activity:**

**5. Number of employees in total:**

**6. Number of employees in relevant occupation:**

**7. Assortment / goods produced or services offered:**


**B****DESCRIPTION OF JOBS IN THE OCCUPATION**

**8. Job Title:**

**9. Division / Department:**

**10. Performance environment:**

(technology, equipment, tools, instruments, materials)

**11. Necessary educational level for this job:**

**12. Duties / Responsibilities of Job holder:**

Please, describe specific job responsibilities/duties, listing the most important first. Use a separate statement for each responsibility. Most jobs can be described in **6-8 major duty areas**.

Combine minor or occasional duties in one last statement. Give a best estimate of average percentage of time each duty takes; however, do not include a duty which occupies 5% or less of the time unless it is an essential part of the job. Each statement should be brief and concise, beginning with an action verb. The box below shows an example.

- Example-

**Secretary**

1. Performs a variety of typing duties including standard letters, reports and forms (25%)
2. Takes and transcribes dictations. Composes letters and memos as directed (25%)
3. Maintains departmental files; ensures that all records are updated and modified as necessary (20%)
4. Answers the telephone and greets visitors (20%)
5. Makes travel arrangements (10%)

In total 100%

**A Duty** \_\_\_\_\_

\_\_\_\_\_

% of time spent performing the duty

Tasks: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**B Duty** \_\_\_\_\_

\_\_\_\_\_

% of time spent performing the duty

Tasks: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**C Duty** \_\_\_\_\_

\_\_\_\_\_

% of time spent performing the duty

Tasks: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**D Duty** \_\_\_\_\_

\_\_\_\_\_

% of time spent performing the duty

Tasks: \_\_\_\_\_

\_\_\_\_\_

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**E Duty** \_\_\_\_\_

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% of time spent performing the duty

Tasks: \_\_\_\_\_

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**F Duty** \_\_\_\_\_

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% of time spent performing the duty

Tasks: \_\_\_\_\_

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**G Duty** \_\_\_\_\_

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% of time spent performing the duty

Tasks: \_\_\_\_\_

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**H Duty** \_\_\_\_\_

\_\_\_\_\_

% of time spent performing the duty

Tasks: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

<b>C</b>	<b>IDENTIFICATION OF OCCUPATIONAL REQUIREMENTS</b>
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13. In order that the individual performs the above duties / responsibilities what knowledge, skills and competences he / she currently needs:

Knowledge - Person must know:	Skills - Person must be able to do:	Personal competence
		( examples: willingness to apply knowledge and skills, autonomy, responsibility, communication and social competence, team work, adaptability, creativity, problem solving, capacity to learn, entrepreneurship, leadership....)

↓	↓	
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**13. Continues....**

Knowledge - Person must know:	Skills - Person must be able to do:	Personal competence
		( examples: autonomy, responsibility, communication and social competence, willingness, team work, adaptability, creativity, problem solving, capacity to learn, entrepreneurship, leadership....)

**14. Please try to estimate what kind of knowledge, skills and competences will be needed for this occupation in the future, within a period of five years and beyond** (taking into consideration factors like technological development, privatisation, globalisation and foreign investment, European and international orientation of the country, etc. ):

Knowledge - Person will know:	Skills - Person will be able to do:	Personal competence

Information gathered will remain confidential and no individual data will be published.

**THANK YOU FOR PARTICIPATING IN THIS SURVEY**

Date:

Name of the interviewer:

# **Annex B1**

## **INTERVIEW GUIDE**

## **EU VET 4 PROJECT**

## Interview Guide

*'One of the main functions of education is to enable mankind to take control over its own development. It must enable all people without exception to take their destiny into their own hands in order to contribute to the progress of society in which they live, founding development on the responsible participation of individuals and communities.'* (Delor, 1998)

*Dear colleagues,*

*The Interview Guide is designed in a manner to facilitate the process of interviewing representatives of labour market data collection and processing of data, while at the same time provide consistency and clarity in the approach to the task. The collected data should identify the key functions relevant to the development of occupational standards that will help keep modern vocational education, in line with the labour market needs. Thus, representatives of the labour market should more accurately describe knowledge, skills and personal competencies needed to perform a specific job.*

### **Interview Guide includes:**

- I Short history of EU VET projects in Bosnia and Herzegovina
- II Objectives and expected results of EU VET 4 project
- III Glossary of key terms
- IV Explanation of the Questionnaire for the identification of occupational requirements
- V Instructions for interviews

### **I Short history of EU VET projects in B&H**

The reform of vocational education in our country began in 1998 when 40 key actors within the Phare VET program (teachers, representatives of labour market, employers, trade unions, ...), with the help of international experts, analysed and evaluated the quality of our curricula. Based on the insight and the analysis they assessed that the existing curricula are out of date, made for the labour market as it was before 30 years and more, too large and inflexible. Curricula for the third and fourth degree were made by subject programming with an emphasis on theoretical knowledge and Nomenclature of occupations according which they were made was too fragmented.

Complete process of reform of vocational education began with a vision of Bosnia and Herzegovina to be closer to European Union, in accordance with Lisbon strategy and the Copenhagen Declaration; we might say an attempt of Europeanization of our educational system. In the initial steps of implementing a pilot project for the reform of vocational

education the target was set – **development of vocational education based on demands of labour market and economy**, improvement of quality, reorganisation of management and financing, the management and financing, as well as greater involvement of social partners and stakeholders.

### **Modular curricula**

In a frame of Phare-VET i EU-VET 1, 2, 3 programs were developed modular curricula which by their standards and contents should follow changes of labour market demands, that include key skills and facilitate development and establish local partnerships with employers and social partners.

Their preparation involved groups of teachers who are trained in the methodology of the curricula, interactive teaching and assessment according new techniques, and the professional support was given to them through a partnership program with schools from European Union member states, as well as through the contribution of the faculty and representatives of labour market. Emphasis in the modernized curricula (made on the new methodology) is not only on the content that should be realized, but also on their flexibility, conciseness and is focused on vocational subjects and practical training and opportunities for permanent development by rapid response to changes in society and technology, as well as the changed role of teachers and students.

## **II OBJECTIVES AND EXPECTED RESULTS EU VET 4 project**

**17.01.2011 - 17.01.2013**

### **Overall objective**

Get a highly skilled workforce through the development of efficient and effective high quality VET system in BiH

### **Project has 3 components:**

#### **Component 1:**

**Strengthening the vertical and horizontal mobility in education system in Bosnia and Herzegovina in the European education area through the further development of the Qualifications Framework in BiH. (The title of the document adopted by Council of Ministers in BiH is ‘Baseline of Qualifications Framework in BiH’.)**

Result 1.1: Qualification framework developed for the level of secondary education and tertiary non-university education namely: generic descriptors drafted

Result 1.2: Occupational standards (OS) and training standards (TS) for at least seven selected occupations in the occupational family ‘Agriculture and Food Processing’ developed

Result 1.3: Curricula for selected occupations harmonised with training standards and piloted in at least 60% of all schools providing education for these occupations

Result 1.4: Specific descriptors for piloted occupations developed

Result 1.5: A road map for development of occupational standards for all occupations developed

Result 1.6: Key groups of experts from labour market sector and education sector trained in the process of development of occupational and training standards.

## **Component 2:**

### **Institutional building through capacity building of the VET Department of the Agency for Pre-primary, Primary and Secondary Education and its adequate positioning in the educational systems in Bosnia and Herzegovina.**

Result 2.1: The VET Department of the Agency for Pre-primary, Primary and Secondary Education is operational in aspects of development of occupational and training standards, curriculum development, monitoring and evaluation of curricula

Result 2.2: Cooperation, coordination and reporting mechanisms between the VET Department and other relevant institutions (schools, pedagogical institutes, Ministries of Education, Ministries of Labour and Employment) developed and introduced in practice

Result 2.3: Basic VETIS developed and agreed by all Ministries of Education. Road map for further expansion of VETIS prepared. Draft of regulations or mechanisms for timely and regular reporting of information to the system and from the system

Result 2.4: A handbook for use and regular updating of VETIS drafted and agreed

Result 2.5: Database on relevant VET issues developed in agreement with relevant stakeholders from sector of education and sector of employment and road map for further development of database and guidelines for regular updating developed.

## **Component 3:**

### **Full implementation and harmonization of the reform processes in the fields of curricula and training programmes; pedagogical standards and norms through development of new normative acts and bylaws at all levels of decision making and implementation in accordance with the Framework Law on Vocational Education and Training in Bosnia and Herzegovina.**

Result 3.1: Assessment report about the use of modular and traditional curricula in BiH including recommendations and action plan for the introduction of modular curricula in all vocational schools in BiH developed and submitted to the Ministry of Civil Affairs, for the Conference of Ministers of Education in Bosnia and Herzegovina

Result 3.2: Assessment report of the situation regarding pedagogical documentation in use (logs, registries, school documentation, certificates/diplomas, planning of work etc.) and pedagogical standards drafted. Recommendations and action plan for the adoption of new sets of pedagogical documents and recommendations for a general model for pedagogical standards submitted to the Ministry of Civil Affairs, for the Conference of Ministers of Education in Bosnia and Herzegovina

Result 3.3: A road map and an action plan (including overall cost estimate) for systematic implementation of VET reform in all parts of the country, based on the two assessment reports, developed and submitted to the Ministry of Civil Affairs, for the Conference of Ministers of Education in Bosnia and Herzegovina

Result 3.4: Models of sets of regulations, documents and files relevant for full implementation of VET curricula and pedagogical norms in line with the VET Framework Law (for levels of education ministries, pedagogical institutes, schools and others) submitted to the Ministry of Civil Affairs, for the Conference of Ministers of Education in Bosnia and Herzegovina

### III GLOSSARY OF KEY TERMS

- **National Qualifications Framework** is an instrument that is to connect the results / learning outcomes which are achieved in all educational institutions and put them in mutual relations in Bosnia and Herzegovina and in international exchange. It sets clear criteria for quality of competencies that participant in education can expect to have after the completion of education of a certain level and scope. NQF is a unique system that allows the measurement of results / outcomes of learning and comparison with each other. The importance of a NQF is reflected in better linking the labour market demands with implementation of school and education programs and in the evaluation of all results / learning outcomes.
- **Occupational standards** specify: "the main tasks that people do," describing the professional duties and activities as well as competencies typical for certain occupations. The occupational standards answer the question: "What a graduate learner needs to know in employment?"
- **Training standards** are defined as the expected results of learning processes that lead to a document on qualification / occupation, program of study in terms of content, learning objectives and learning environment. Training standards provide an answer to the question: "What learners should learn during the training to be effective in employment?"
- **Assessment standards** determine the subject of an evaluation, performance criteria, assessment methods and composition of the body that is empowered to award qualifications. Assessment standards answer the question: "Does the learner achieved and to what extent defined outputs / learning outcomes"?
- **„Package" of the competencies** involves the knowledge, skills and personal competencies that learners should acquire during the education process, and job-holder must have in order to provide efficiency at work.
- **Teaching objectives** represent the specific intents and progress in learning and education, i.e. progress in the development of learners that are taking place in the teaching process.
- **Results / learning outcomes** are clearly defined statements, i.e. the expected knowledge, skills and personal competencies, but also values and attitudes that learners should acquire and be able to demonstrate after the successful completion of specific educational topic, program, education level or the upbringing - educational cycle.
- **Knowledge** indicates a set of acquired and related information that are the result of learning (analyse, count, select, handle, use ...)
- **Skills** include the application of acquired knowledge, the use of prescribed modes of carrying out the tasks (proficiency, comparison, evaluation of results ...)

- **Personal competencies** represent the knowledge, skills and attitudes needed by the individuals in employment (independence, creativity, communication, problem solving, team work ....)
- **Bloom's taxonomy - the cognitive level** classification of intellectual behaviour important in learning process; 6 categories of knowledge hierarchically arranged, intended for all categories of learners.
- **Interview** is a formal meeting or a conversation with someone in order to obtain comments or information.
- **Structured interview** consists of a series of well-defined questions and this interview leads to best results.
- **Communication** is a two-way flow of information that the recipient understands the message the same way the sender intended.
- **Information** is one - way process – you have provided the information and you do not analyze whether it is accepted by the recipient
- **Verbal communication** is the process of conveying the meaning of words, either orally or in writing.
- **Nonverbal communication** is the conveyance of meaning in direct contact, by any means other than verbal. Facial expressions, body movements and tone of voice are all the means of communication. Nonverbal communication is the exchange of information and meaning through mime, gestures and body movements. Nonverbal behaviours serve us to draw conclusions about two main types of relationships among people: preference (or liking) and power (status or dominance in the social life). Face, gestures and postures are used to supplement our statements, but also as a way to say something. It can be used for a joke, the expression of irony or doubt. Non-verbal impressions which we often carelessly use and transfer, show that what we say is not always what we think. For example, sweating, squirming and averting one's eyes quickly, may indicate that the person is dishonest. Therefore, we use facial expressions and body movements of others, as a supplement of their verbal expressions, but also we have to pay attention to own non-verbal communication, not to send false messages to others.

#### IV EXPLANATION OF QUESTIONNAIRE FOR IDENTIFICATION OF OCCUPATIONAL REQUIREMENTS

In this chapter, it is given a brief explanation of the elements from the questionnaire that might be unclear. Elements relating to the duties and tasks, we didn't clarify since you've practiced and learned them during the last seminar. Please pay attention to the description of the duties, tasks, knowledge, skills and personal competencies. Use active verbs, concrete, clear and measurable, and whenever possible structure key functions in the form:

#### VERB + RESULTS + CONTEXT OF ACTIVITY/ WORK

Serve + food and drink + customers

And do not forget, at this stage of data collection for preparation of occupational standards it is important to know what the interviewed people think and know, try to be as objective as possible while sorting data and filling out the questionnaire.

## QUESTIONARIE FOR IDENTIFICATION OF OCCUPATIONAL REQUIREMENTS

Occupational family: Agriculture and Food processing

Name of occupation: Milk processor

### A IDENTIFICATION OF THE ORGANIZATION

1. Name of company /institution: Dairy

Region /Canton:

Address:

Phone:

Fax:

E-mail:

Web site:

2. Form of ownership:

State/public

private

other

3. Interviewed person (s):

Qualification: refers on what was written in diploma

Name and surname:

Position: refers to the position in a company: the worker, supervisor, manager ....

Phone / mobile:

Phone/mobile:

E-mail:

4. Sector / main economic activity: what the company produces, what is its main activity (in this case - the purchase, processing and sale of milk and dairy products)

5. Total number of employees: all employees in a company
6. Number of employees in respective occupation: number of employed milk processors
7. A sample of products / goods produced or services offered: this refers to the goods, in this example -the milk and dairy products (cheese, cream, sour cream ...), but also a supply of workers' canteen, pupils' or students' housing...

## **B DESCRIPTION OF OCCUPATION**

8. Job Title: *What is the interviewed person concrete job (milk processor)*
9. Section/department: it refers to the sector in which employee works (reception, production, sale, marketing, quality control ....)
10. Environment for job execution: (technology, equipment, tools, instruments, materials) - This segment is important to be described, since responds of the person interviewed can show how some companies are following new developments in science and technology, and this is associated with the knowledge, skills and competencies that learners should have in employment.
11. The necessary level of training for this job: III or IV level of education (three-year or four-year educational program)

### **12. Duties and tasks – milk processor**

#### *Duty:*

1. Repurchase of milk 25%
2. Take over and checking the quality of milk 25%
3. Processing of milk 50%

#### **Duty: processing of milk**

#### **Task:**

- Perform a proper determination of the organoleptic properties of milk
- Identify the colour of milk depending on the percentage of milk fat
- Identify substances that affect smell and taste of milk
- Record on taken analysis of milk
- Production of fermented products

- Production of yoghurt
- Production of butter

KNOWLEDGE	SKILLS	PERSONAL COMPETENCIES
-reading of instruments for measuring temperature, pressure and relative humidity, -selection of raw materials for the production of kefir and other fermented products, -chooses culture for the production of kefir and other fermented products, -prepare dishes for the production of kefir and other fermented products	-use of lacto-dense-meters and butiro meter -maintains measuring instruments -uses elements of the regulation of temperature and pressure ...	-skills of effective work as a team member, -communication skills, -flexibility and adaptability, -awareness of the importance of safety at work, - ability to take over responsibility ...

## **V INSTRUCTIONS FOR INTERVIEW**

Within the task "Development of occupational standards" you carry out labour market research using interview techniques. Research requires:

- Attention;
- Current notions / knowledge;
- Skilfully asked questions;
- Listening carefully.

**In the preparatory phase of the study** collect relevant information about employers / companies because modern and contemporary enterprises should be given priority in the selection. Companies / employers that you will visit in the course of this research are of great importance to the quality of information collected.

The preparatory phase of the research involves determining the purpose of the inquiry which in this case relates to access to quality information on the occupational requirements / occupation (knowledge, skills, personal competencies) at the moment, but also for the next 5 years taking into account technological development, privatization, globalization, and possible foreign investments, European and international orientation of the country,....).

Office of the EU VET 4 project will prepare a letter that you (we leave to you the choice of contacting) may contact the employers that will help you to choose the right person for the interview.

Schedule the meeting taking care not to disturb the working process of employees and prepare questions in advance for the structured interview.

Select the method of recording the interview (writing or recording).

**The implementation phase** of research involves the flow of conducting an interview when you should think about the following elements:

- Arrive on time;
- Introduce and explain the purpose of the interview;
- Create a positive atmosphere;
- Interview to begin with general and simple questions that you have in the questionnaire;
- Take notes or record the interview;
- To finish at the agreed time and thank.

The person determined to well-structured interview instigate to talk about the topic of conversation, encourage, listen, do not put them explicitly on their knowledge that they need to stop, point to them agreement / acceptance by nodding the head, verifying, paraphrasing, and all the possible elements of nonverbal communication.

**The evaluation phase** refers to the sorting of collected data and filling out of questionnaire form to identify the occupational requirements. It is important that data entered in the questionnaire responses of the interviewed employees.

### **A few practical tips for conducting interviews**

1. Use humour to some extent and support their views with pleasant and positive words.
2. Never use technical terms and complicated language - avoid long sentences.
3. Never use irony!
4. Do not be arrogant!
5. Bring a list of questions that you have prepared.
6. Always be well prepared with the knowledge on the subject of conversation – take yourselves and other participants seriously.

### ***FEW WORDS AND PHRASES THAT SHOULD BE USED TO ENCOURAGE A COMMUNICATION***

- **THANK YOU** (thank you for your attention, care and support of others);
- **PLEASE** (you show respect);
- **BRAVO** (praise);
- **May I help you?** (Do not wait to be asked, offer your own help);
- **IT IS REALLY NICE** (notice positively);
- **EXCUSE ME** (sometimes unintentionally we offend someone, if you want to have always right - live alone);
- **TELL ME ABOUT IT** (show interest);
- **LET'S GO TOGETHER** (offer the others the opportunity to devote them your time).

# Annex B2

## Job analysis interview questions

### 1. Interview information

- Name of Employee:
- Job Title:
- Department:
- Date:

### 2. Job introduction

- Describe: location of job, if necessary or appropriate.

### 3. Job purpose:

- What is the essence of work in your position? What is the job's overall purpose?

### 4. Job duties

- What are the main duties and responsibilities of your position?
- Describe your duties in the following categories: daily duties, periodic duties, duties performed at irregular intervals
- How long do they take?
- How do you do them?
- Are you performing duties not presently included in your job description? Describe.
- Do you use special tools, equipment, or other sources of aid? If so, list the names of the principal tools, equipment, or sources of aid you use.
- Describe the frequency and degree to which you are engaged in such activities as: pushing, throwing, pulling, carrying, sitting, running, kneeling, crawling, reaching, climbing...

### 5. Job criteria / results

- How would you define success in your work?
- Describe the successful completion and/or end results of the job.

### 6. Records and Reports

- What records or reports do you prepare as part of your job?
- Who do you have to send these reports?

### 7. Supervisor

- Who is your supervisor?
- What kinds of questions or problems would you ordinarily refer to your supervisor?
- Are the instructions you receive clear and consistent with your job description?

## **8. Authority**

- What is the level of authority vested in your position?
- What is the level of accountability and to whom are you accountable?
- What kinds of independent action were you allowed to taking?

## **9. Responsibilities**

- Are you responsible for any confidential material? If so, describe how you handle it.
- Are you responsible for any money or things of monetary value? If so, describe how you handle it.

## **10. Knowledge**

- What special knowledge of specific work aids are needed for this position?
- Describe the level, degree, and breadth of knowledge required in these areas or subjects.
- Indicate the educational requirements for the job (not the educational background of the incumbent).
- What level of education is required for your position?
- What type of certification and licensing is required for your position?
- Can you specify the training time needed to arrive at a level of competence on the job?
- What sort of on the job training is needed for this position?

## **11. Skills/ Experience**

- What activities must you perform with ease and precision?
- What are the manual skills that are required to operate machines, vehicles, equipment, or to use tools?
- Indicate the amount of experience needed to perform the job.
- What level of experience and skills are required for your position?

## **12. Abilities required**

- What mathematical ability must you have?
- What reasoning or problem solving ability must you have?
- What interpersonal abilities are required? What supervisory or managing abilities are required?
- What physical abilities such as strengths, coordination, a visually acuity must you have?

## **13. Working instruments**

- Describe briefly what machines, tools, equipment or work aids the incumbent works with on a regular basis.

## **14. Health and safety**

- What is the safety conditions related to this position?
- Does your work present any type of hazardous or unusual working conditions?

## **15. Working conditions**

- Describe your working conditions.
- Describe the frequency and degree to which you will encounter working conditions such as these: cramped quarters, moving objects, vibration, inadequate ventilation.

You can read more information about job analysis interview at: [Job analysis interview](#).

# Annex C

## Model for OCCUPATIONAL STANDARDS in BiH

### Part 1

#### Occupational Standards

Name of occupational family:	
Name of occupation :	
Qualification level: (in accordance to Baseline of Qualifications Framework in BiH)	
Date of development of standard:	
Version:	
List of overall competences:	
1.	
2.	
3.	
4.	
5.	

**Part 2**

Knowledge	Skills	Personal competences
1.		
2.		
3.		
4.		
5.		

# Annex D

## Part 1 OCCUPATIONAL STANDARD

Name of occupational family:	Agriculture and food processing
Name of occupation :	Milk processor
Qualification level: (in accordance to Baseline of Qualifications Framework in BiH)	3
Date of development of standard:	09.05.2012
Version: 1	
List of overall competences:	
	1. Carry out repurchase and receipt of milk
	2. Pasteurize and sterilize milk
	3. Produce milky – sour drinks
	4. Produce cheese
	5. Make other milk products
	6. Maintain hygiene
	7. Pack and carry out internal transport of raw materials and products
	8. Implement safety measures at work and environment

## Part 2

Knowledge	Skills	Personal competences
<b>1. Carry out repurchase and receipt of milk</b>		
<ul style="list-style-type: none"> <li>- Explain the process of obtaining the milk</li> <li>- Explain about the role and importance of the dairy</li> <li>- Identify/recognise hygiene measures</li> <li>- Select adequate technique of taking samples of milk</li> <li>- Differ organoleptic properties of milk</li> <li>- List measurement values that characterize the properties of milk</li> <li>- Differentiate chemical components of milk</li> <li>- Select measurement instruments for measuring of temperature</li> <li>- Specify instruments for measuring of sourness of milk and percentage of milk fat</li> <li>- Explain the meaning of documentation and parameters of analysis</li> <li>- Describe basic characteristics of machines used for treatment of purifying the milk</li> </ul>	<ul style="list-style-type: none"> <li>- Apply hygiene measures and appropriate methods of taking samples</li> <li>- Check organoleptic indicators of milk</li> <li>- Collect and keep record on properties of milk</li> <li>- Carry out measurement and keep record of milk temperature</li> <li>- Measure sourness and milk fat</li> <li>- Properly enter received data</li> <li>- Clean (purify) milk</li> </ul>	<ul style="list-style-type: none"> <li>- Show a sense for initiative, entrepreneurship and civic competences</li> <li>- Demonstrate ability for team work</li> <li>- Take responsibility for own work</li> <li>- Show readiness for implementation of knowledge</li> <li>- Demonstrate creativity</li> <li>- Manage in particular situation</li> <li>- Demonstrate positive attitude toward development of key competences: learning of foreign languages, LLL, IT literacy...</li> <li>- Perform adequate communication in different and difficult situations and create positive attitude toward people,</li> <li>- Rationally and economically use of resources</li> <li>- Develop intercultural skills</li> </ul>
<b>2. Pasteurize and sterilize milk</b>		
<ul style="list-style-type: none"> <li>- Define the importance of conserving by using a low temperature effect</li> <li>- Explain the effect of low temperatures on the quality of milk and products</li> <li>- Explain procedures and machine work in production of pasteurised and sterilised milk</li> <li>- Describe regime of pasteurisation and sterilisation</li> </ul>	<ul style="list-style-type: none"> <li>- Prepare and maintain machines and devices for production of pasteurised and sterilised milk</li> <li>- Operate machines and devices for production of pasteurised and sterilised milk</li> <li>- Read temperature in procedure of pasteurisation and sterilisation of milk</li> <li>- Operate machines for cooling milk and products</li> </ul>	<ul style="list-style-type: none"> <li>- Effectively use working hours/time</li> <li>- Take responsibility for own work</li> <li>- Demonstrate ability for team work</li> <li>- Rationally and economically use raw materials for production of pasteurised and sterilised milk</li> </ul>

Knowledge	Skills	Personal competences
	<ul style="list-style-type: none"> <li>- Operate machines for evaporation of water</li> <li>- Carry out process of daily and general cleaning according schedule</li> </ul>	<ul style="list-style-type: none"> <li>- Show readiness for acquiring and implementation of knowledge and application of modern technologies</li> </ul>
<b>3. Produce milky – sour drinks</b>		
<ul style="list-style-type: none"> <li>- Specify raw materials for production of milky-sour drinks (milk, additives, microbiological cultures)</li> <li>- Explain principle of work and list types of refrigerators and instruments for measurement of temperature</li> <li>- Differ sorts and purpose of particular microbiological cultures</li> <li>- Identify moment of taking samples for determination of sourness</li> <li>- Define process of fermentation and needed microbiological cultures</li> <li>- Describe principle of work of machines for filling, packaging and labelling of products</li> </ul>	<ul style="list-style-type: none"> <li>- Participate in production of milky – sour drinks in accordance to instructions</li> <li>- Regulate filling of tank</li> <li>- Monitor the work and read temperature of refrigerator</li> <li>- Use microbiological culture in accordance to recipe</li> <li>- Measure indicators of sourness</li> </ul>	<ul style="list-style-type: none"> <li>- Effectively use working hours/time</li> <li>- Take responsibility for own work</li> <li>- Demonstrate ability for team work</li> <li>- Rationally and economically use raw materials for production of milky- sour drinks</li> <li>- Show readiness for acquiring and implementation of knowledge and application of modern technologies</li> </ul>
<b>4. Produce cheese</b>		
<ul style="list-style-type: none"> <li>- Specify the raw material for cheese production</li> <li>- Distinguish between different organoleptic properties of milk suitable for cheese production</li> <li>- Explain the role of starter culture in cheese production</li> <li>- Explain how to determine the sourness</li> <li>- Apply the prescribed temperature</li> <li>- Describe the process of making the cheese</li> <li>- Control the necessary parameters</li> <li>- Examine and evaluate the required organoleptic properties of cheese</li> </ul>	<ul style="list-style-type: none"> <li>- Act in accordance to the recipe</li> <li>- Use instruments to determine the sourness</li> <li>- Measure temperature during production of cheese</li> <li>- Perform the process of refinement, cooling and storing of milk</li> <li>- Operate the preheater of milk</li> <li>- Read the percentage of milk fat</li> <li>- Handle pasteurizer</li> <li>- Use microbiological culture in accordance with the recipe</li> <li>- Participate in the formation and pressing of cheese</li> <li>- Perform salting of cheese in accordance with</li> </ul>	<ul style="list-style-type: none"> <li>- Effectively use working hours/time</li> <li>- Take responsibility for own work</li> <li>- Demonstrate ability for team work</li> <li>- Rationally and economically use raw materials for production of cheese</li> <li>- Show readiness for acquiring and implementation of knowledge and application of modern technologies</li> </ul>

Knowledge	Skills	Personal competences
	the recipe - Follow ripening of cheese and perform manipulation, - Perform organoleptic evaluation	
<b>5. Make other milk products</b>		
<ul style="list-style-type: none"> <li>- Specify the raw materials for production of milk cans and modified milk</li> <li>- Explain methods of conservation by water evaporation</li> <li>- Differ the raw materials for production of cream, butter, butter fat and kajmak</li> <li>- Define the raw materials for production of ice cream</li> <li>- Read and apply particular recipes</li> <li>- Perform quality assurance measures</li> <li>- List and describe procedures for making other milk products</li> </ul>	<ul style="list-style-type: none"> <li>- Preparation of raw materials for other products from milk</li> <li>- Make other products made of milk</li> <li>- Act in accordance with the recipe</li> <li>- Use appropriate instruments</li> <li>- Performs necessary technological operations</li> <li>- Act in accordance with the prescribed measures of quality</li> <li>- Use proper packaging and handling of packaging machines</li> <li>- Pack products</li> </ul>	<ul style="list-style-type: none"> <li>- Effectively use working hours/time</li> <li>- Take responsibility for own work</li> <li>- Demonstrate ability for team work</li> <li>- Rationally and economically use resources</li> <li>- Show readiness for acquiring and implementation of knowledge and application of modern technologies</li> <li>- Rationally and economically use raw materials for production of other milky - sour products</li> </ul>
<b>6. Maintain hygiene</b>		
<ul style="list-style-type: none"> <li>- Explain importance of personal and general hygiene and method of use of work equipment</li> <li>- Plan time of washing</li> <li>- Define characteristics of washing means and mode of use</li> <li>- Describe washing of tanks, presses and basins...</li> <li>- Define standards related to hygiene</li> </ul>	<ul style="list-style-type: none"> <li>- Carry our proper use of appropriate washing means</li> <li>- Carry out washing of tanks, presses and basins.</li> <li>- Monitor and keep records on hygiene level and act in accordance to valid regulation /normative</li> <li>- Maintain personal hygiene and use appropriate working equipment</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate ability for team work and take responsibility for own work</li> <li>- Show readiness for implementation of knowledge</li> <li>- Rationally use means for maintenance of hygiene</li> </ul>

Knowledge	Skills	Personal competences
<b>7. Pack and carry out internal transport of raw materials and products</b>		
<ul style="list-style-type: none"> <li>- List types of packaging material</li> <li>- Describe principle of packaging machine work</li> <li>- Specify methods of recording of finished/made products at delivery from production facility to storage</li> <li>- define basic functions of internal transport</li> </ul>	<ul style="list-style-type: none"> <li>- Carry out timely preparation of packaging material</li> <li>- Act in accordance to work order</li> <li>- Operate machine for packaging</li> <li>- Keep record on supporting documentation on produced and stored quantities – pack and serve machines for filling, packaging and labelling of products</li> <li>- Carry our internal transport</li> </ul>	<ul style="list-style-type: none"> <li>- Demonstrate ability for team work</li> <li>- Rationally and economically use means for packaging</li> <li>- Show readiness for implementation of knowledge</li> </ul>
<b>8. Implement safety measures at work and environment</b>		
<ul style="list-style-type: none"> <li>- Organise measures for safe work according regulations and laws</li> <li>- Carry out selection of necessary means and equipment for protection</li> <li>- Differ methods of classifying of particular finished products</li> <li>- Differ the way of disposal the waste</li> <li>- Explain the meaning of veterinarian supervision</li> <li>- Indicate and implement standards on particular products</li> </ul>	<ul style="list-style-type: none"> <li>- Work in accordance with the rules of safety</li> <li>- Use protective equipment</li> <li>- Classify finished products</li> <li>- Dispose waste in accordance with regulations</li> <li>- Apply standards according guidelines (HACCAP, ISO, HALAL ...)</li> <li>- Use the rulebook on veterinarian supervision</li> </ul>	<ul style="list-style-type: none"> <li>- Show ecological awareness</li> <li>- Show awareness on safety at work</li> <li>- Demonstrate ability for team work</li> <li>- demonstrate readiness for implementation of knowledge</li> <li>- Show responsibility toward equipment and environment</li> </ul>

# Annex E

## Bloom's Taxonomy

Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation
<p><i>Definition: Remembers previously learned material.</i></p> <ul style="list-style-type: none"> <li>• cite</li> <li>• define</li> <li>• describe</li> <li>• numerate</li> <li>• identify</li> <li>• indicate</li> <li>• label</li> <li>• list</li> <li>• locate</li> <li>• match</li> <li>• name</li> <li>• outline</li> <li>• point</li> </ul>	<p><i>Definition: Grasps the meaning of material (lowest level of understanding)</i></p> <ul style="list-style-type: none"> <li>• approximate</li> <li>• articulate</li> <li>• associate</li> <li>• characterize</li> <li>• clarify</li> <li>• classify</li> <li>• contrast</li> <li>• convert</li> <li>• differentiate</li> <li>• delineate</li> <li>• describe</li> <li>• discuss</li> <li>• explain</li> </ul>	<p><i>Definition: Uses learning in a new and concrete situation (higher level understanding).</i></p> <ul style="list-style-type: none"> <li>• ascertain</li> <li>• adapt</li> <li>• apply</li> <li>• assign</li> <li>• calculate</li> <li>• classify</li> <li>• complete</li> <li>• compute</li> <li>• conduct</li> <li>• construct</li> <li>• contract</li> <li>• demonstrate</li> <li>• determine</li> <li>• discover</li> <li>• establish</li> </ul>	<p><i>Definition: Understands both the content and structure of material.</i></p> <ul style="list-style-type: none"> <li>• analyze</li> <li>• break down</li> <li>• categorize</li> <li>• compare</li> <li>• contrast</li> <li>• correlate</li> <li>• deduce</li> <li>• detect</li> <li>• differentiate</li> <li>• discriminate</li> <li>• examine</li> <li>• figure out</li> <li>• group</li> <li>• manage</li> <li>• maximize</li> <li>• minimize</li> <li>• optimize</li> <li>• order</li> </ul>	<p><i>Definition: Formulates new structures from existing knowledge and skills.</i></p> <ul style="list-style-type: none"> <li>• arrange</li> <li>• assemble</li> <li>• budget</li> <li>• code</li> <li>• combine</li> <li>• compile</li> <li>• construct</li> <li>• create</li> <li>• cultivate</li> <li>• design</li> <li>• develop</li> <li>• enhance</li> <li>• explain</li> <li>• facilitate</li> <li>• formulate</li> <li>• generalize</li> <li>• generate</li> <li>• improve</li> <li>• integrate</li> <li>• organize</li> </ul>	<p><i>Definition: Judges the value of material for a given purpose.</i></p> <ul style="list-style-type: none"> <li>• alleviate</li> <li>• assess</li> <li>• communicate</li> <li>• conclude</li> <li>• consider</li> <li>• counsel</li> <li>• criticize</li> <li>• critique</li> <li>• decide</li> <li>• defend</li> <li>• detect</li> <li>• elicit</li> <li>• estimate</li> <li>• evaluate</li> <li>• grade</li> <li>• interpret</li> <li>• judge</li> <li>• justify</li> <li>• measure</li> <li>• predict</li> <li>• prescribe</li> <li>• rank</li> </ul>

- recall
  - recognize
  - reproduce
  - select
  - state
  - tabulate
  - write
- give example
  - locate
  - paraphrase
  - predict
  - review
  - summarize
  - translate
- estimate
  - employ
  - explore
  - expose
  - factor
  - illustrate
  - investigate
  - make
  - manipulate
  - maintain
  - modify
  - orient
  - perform
  - practice
  - predict
  - prepare
  - produce
  - provide
  - relate
  - set
  - simulate
  - solve
  - use
- outline
  - select
  - separate
  - train
  - transform
- plan
  - prepare
  - produce
  - propose
  - relate
  - revise
  - sequence
  - specify
  - write
- rate
  - recommend
  - reinforce
  - release
  - review
  - select
  - score
  - support
  - test
  - validate
  - verify