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Terms of Reference

Health & Safety Capacity Development Measures

Project:

Business Cases for Improved Waste Collection and Valorisation

Apply Health & Safety Measures
in Your Municipality

October 2019

SeSWA Serbian Solid Waste Association

NALAS

CONTENTS

1 INTRODUCTION

Occupational health and safety (H&S) refers to policies and procedures that companies adopt for their general and specific operations in order to ensure the safety and health of employees at their workplaces. These policies and procedures include hazard identification and control according to government standards and the ongoing safety training and education of the employees. As defined by the World Health Organization (WHO) "occupational health deals with all aspects of health and safety in the workplace and has a strong focus on primary prevention of hazards".

Waste management can be considered as a service sector highly susceptible to occupational hazards, workplace related health issues and injuries. Some studies[1] show that lost time due to injuries and health issues at the workplace in waste management is more than 7 times higher than among the general workforce.

Common practice in the countries of Western Balkans is that low-skilled workers are engaged in the waste management sector. While the International Labor Organization (ILO) considers education and training concerning the safety of employees who work on solid waste collection and treatment one of the main priorities in this sector, the state of play regarding these issues is far from perfect in the region. Namely, this specific type of profession, which is dealing with high occupational health risks, requires a legal basis for proper education and training, as the one defined for numerous professions in public sectors. Still, there are no high schools specialized in this kind of education in the countries of the region.

There are numerous benefits for waste management companies that provide H&S training to their workers, i.e. ensure improved and safer working conditions. Professional education increases the efficiency of the workforce, decreases the operational costs for the company and provides a number of socio-ecological benefits to the local communities. Furthermore, such an approach consequently leads to more loyal and motivated employees. For instance, well-defined H&S educational programs, emphasizing safety precautions in handling hazardous matter and fire protection, are a good way of reducing injuries and improving employee efficiency.

Health and safety at work is one of the areas where the EU and its legal framework have made the biggest impacts. Principle 10 of the European Pillar of Social Rights maintains that workers have the right to a high level of protection of their health and safety at work as well as the right to a working environment adapted to their professional needs which enables them to prolong their participation in the labor market.

[1] Englehardt, James & E Fleming, Lora & A Bean, Judy & An, Huren & John, Nicolette & Rogers, Jeff & Danits, Melissa. (1999). Solid Waste Management Health and Safety Risks: Epidemiology and Assessment to Support Risk Reduction.

Directive 89/391/EEC, the so-called OSH "Framework Directive", lays down the main principles to encourage improvements in the safety and health of workers at work. It guarantees minimum safety and health requirements throughout Europe, while member states can maintain or establish more stringent measures.

The Framework Directive is accompanied by other directives focusing on specific aspects of safety and health at work. Together they form the fundamentals of European safety and health legislation.

In the Western Balkans countries, occupational health and safety is regulated by the legal frameworks in accordance with the EU standards. Among other obligations, waste management companies must adopt risk assessment acts for all workplaces and determine the mitigation methods and measures for the risks identified. Furthermore, they have to designate a person responsible for health and safety issues in the company. Still, in the majority of cases, the responsibilities and actions of the appointed person are usually not precisely defined. However, the main issue for companies providing waste management services in the Western Balkans is the compliance with the legal norms prescribed due to the lack of human and financial capacities and the poor awareness and knowledge of these issues. Such a situation effects the quality of services provided and can have serious negative socio-economic and environmental impacts at the local level.

This business process consists of several different and yet interconnected capacity development measures, including H&S trainings for employees in waste management companies, recommendations regarding update of internal H&S procedures, and recommendations for the procurement of the H&S gear end equipment required.

The German Development Cooperation, implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) through the Open Regional Fund – Modernization of Municipal Services (ORF MMS) project, aims to support local authorities and public utility companies in providing better and higher-quality waste management services in Southeast Europe. In this context, the Business Cases for Improved Waste Collection and Valorization Project, along with the partner projects GIZ Climate Sensitive waste Management (DKTI) in Serbia and GIZ Sustainable Municipal Services (SMS) in Kosovo, as well as with the partner organizations Network of Associations of Local Authorities in SEE (NALAS) and Serbian Solid Waste Association (SeSWA), has developed a methodological approach (Terms of Reference - ToR) for the introduction/optimization of five (5) business processes:

1. optimization of routes,
2. home composting,
3. cost centers,
4. **health & safety**, and
5. customer base.

Health and safety (H&S) was piloted as one of the business processes in the municipality of Backi Petrovac in Serbia and in the city of Bijeljina in Bosnia and Herzegovina.

The purpose of this document is to describe the methodological steps for application of a Health & Safety capacity development process, which can be implemented either by the public utility companies, provided that they possess sufficient internal capacities and expertise, or through outsourcing it to advisory services specialised in this kind of tasks. In the case of outsourcing, the documents content and structure provides good understanding

of the process, the activities required and the outputs expected from the advisor, thus allowing for easy derivation of the service terms of reference.

2 OBJECTIVE

Objective of this TOR is to contribute to better working conditions and H&S of employees in waste management companies and improvement of the quality of waste management services.

3 BENEFITS OF INTRODUCTION OF HEALTH AND SAFETY CAPACITY DEVELOPMENT MEASURES FOR SOLID WASTE MANAGEMENT OPERATIONAL STAFF

The implementation of H&S capacity development measures evidently lead to a number of benefits, primarily for waste management companies that have the regular practice of providing such measures for their employees, as well as consequently for the customers, who can benefit from the higher quality of services; finally, positive impacts can even be observed in the improved level of environmental protection.

Direct benefits for the companies will be visible through the reduced number of injuries and sick leaves, which leads to reduced cost of medical treatments and financial compensation for health and safety issues, as well as to a smaller number of days of seek leaves. H&S capacity development measures can improve the company management and ensure better compliance with the legal acts concerning these issues. Compliance with the H&S regulation ensures avoiding penalties for untrained workers, an offence prescribed by the law with financial consequences for the company.

In specific cases, H&S capacity development measures include specialized trainings resulting in the improvement of skills of workers performing specific jobs, i.e. those handling landfill equipment and machinery or working on waste sorting lines. Good landfill practice leads to less environmental impacts of the sites, such as emissions of greenhouse gases and dust, as well as landfill fires and slope failures, which could lead to machinery or equipment damage and can consequently incur additional or unforeseen costs in terms of repairs or lease or purchase of new equipment. It also minimizes risks of appearance of rodents and insects that can be transmitters of various diseases, thus reducing the health risks to the general population.

Indirectly, as a result of H&S capacity development measures, a company's corporate culture will be improved, leading to overall greater satisfaction and better performance and efficiency of all employees. Employee efficiency may be seen in the shorter time needed for completion of assignments and better performance in special work operations. Trained workers usually make better impressions on customers/citizens. Reduced number of accidental situations, such as landfill fires and slope failures, increases the trust of the local population in the company and can increase their readiness to pay for the services, which can lead to better collection rate and more revenues for the company.

Finally, H&S capacity development measures have a long-term external impact on the general society in terms of less medical costs for treatment of injured workers or premature retirement.

4 HEALTH & SAFETY CAPACITY DEVELOPMENT – METHODOLOGICAL APPROACH

In order to introduce the process of Professional Development for Operational Staff, including Health & Safety (that includes training for the staff), and update their H&S procedures and recommendations for the purchase of the H&S gear and equipment, utility companies should be advised and guided to perform the following activities.

4.1 Preparatory Activities

One of the main preconditions for H&S capacity development to take place in specific waste management Public Utility Companies (PUC), in addition to the legal requirement, is obtaining political backing for the process and ensuring the willingness of decision makers at company and local government level to support such an approach.

In order to provide advisory service, the leadership needs to have a clear idea and vision about the necessity and benefits of H&S training, as well as about the negative consequences to the company, local community, citizens and environment in case of absence of such an idea and vision. Political support is best obtained through direct contact with the decision makers and should ideally be documented and provided in the form of a letter of interest signed by the Mayor and/or a decision of the PUC Director. Such a letter or decision should clearly state the division of responsibilities and obligations between the PUC, the local authorities and the other actors in the process. The elements of the letter or decision should come out as result of discussions and meetings with the company and municipal leadership and should be drafted after these meetings, containing but not limited to elements such as setting up an H&S processes working group and defining the working group members, the person in the company responsible for the process, the time frame, etc.

4.1.1 Meeting with the Public Utility Company (PUC)

Following the initial contacts with the political leadership, the first next step is to organize a meeting at the PUC. The meeting should be attended by the decision makers and the relevant technical teams (i.e., legal and general affairs, procurement, human resources, maintenance, landfill, etc.) of the utility company, as well as a representative of the municipality.

The purpose of the meeting is to present the advisory service and the process to be implemented within the company. The meeting should also be used to exchange ideas with the participating parties about the steps and activities to be performed by the advisory team and to explain the benefits for both the PUC and the municipality and its citizens. At this meeting, an initiative for setting up a working group for the implementation of the process should be launched. Also, it is important to discuss at the meeting it what are the specific H&S procedures that need to be improved and in which waste management segment H&S training needs to be provided.

4.1.2 Establishment of a Working Group

The working group should consist of: the responsible PUC manager appointed by the Director, a legal advisor, an H&S officer (if such a position exists), a human resources officer, a company representative for each H&S training group identified in advance, and one or more advisors (a waste management expert and an H&S expert).

The composition of the working group should be described in the municipality's letter of interest or in the decision signed by the PUC Director.

The working group should meet regularly and one of its first tasks should be to come out with the Action Plan (AP) for implementation of the capacity development measures. Another very important task of the working group is to approve recommendations coming from the advisory, as well as to maintain the regular communication between the group and the decision makers. A leader is to be selected from among the members a working group (usually the PUC manager in charge), as well as an individual assigned with the task of preparing minutes, conclusions and short notes from the meetings, which should be communicated to the decision makers. The working group leader should be interviewed to find out whether he or she is sufficiently competent and capable to steer and monitor the capacity development process.

4.1.3 Development of an Action Plan (AP)

The AP should include the time frame, responsible persons, steps required and coordination between the different actors, as well as the resources necessary for the implementation of the capacity development measures. This action plan should set forth the timeline and dates for all the necessary activities. In addition, the action plan should include a specification of jobs and the number of workers that should be trained, along with the relevant legal bases for specific trainings. It will be developed by the working group, with support from the advisors.

4.2 Data Collection and Baseline Development

Once the preparatory activities have been conducted, the working group formed and the AP drafted, a training needs assessment for development of the training curriculum should be conducted. In addition, data should be collected and evidence should be obtained for updating or drafting the H&S procedures and the H&S equipment should be provided. The data collected should also be used in conducting an H&S risk assessment analysis and in identifying the baseline against which progress in H&S parameters in the PUC will be measured. Data sets that should be collected include those related to job systematization and procedures, history of injuries, H&S equipment inventory, etc.

4.2.1 Job Systematization and Procedures Review

The applicable legal framework in countries of the Western Balkan region stipulates that employees, including those working in the waste management sector, need to be regularly trained in H&S and that those trainings are to be provided by their PUCs. It also maintains that the trainings should be based on job-specific risk assessments. However, these provisions are usually not fully implemented in the majority of PUCs in the region.

Therefore, the first step in collecting evidence for the H&S process is to review the national legal basis concerning all types of employee groups, followed by an analysis of the company-specific procedures. Companies usually have procedures either drafted without any risk assessment or based on outdated assessments. Having been analysed, the procedures usually need improvement and updating.

Furthermore, the level of professional specialization of workers in waste management PUCs is usually low, since there are no high schools or specialized schools that provide solid waste management education. Therefore, there is a significant need of preparing a well-defined professional training curriculum for certain employee groups (e.g. workers on sorting lines or operators of different waste management or landfill equipment).

In this respect, the first step in the data collection for the advisory service is gathering the legal acts that regulate H&S and then obtaining all of the relevant PUC internal documents, such as their Stature, systematization act, H&S procedures, risk assessments, HR procedures, training plans, annual plans, mid-term programs, procurement plans, etc. The review of these documents will provide the advisors with the basis to propose to the working group which internal procedures need to be updated, changed or adopted, as well as some of the argumentation for developing the H&S training curriculum.

4.2.2 Review of Past Injuries Records

It is very significant to review past injuries records, because they can give an indication as to which specific jobs and waste management segments training and professional specialization are to be focused on. The injury records should be considered as a baseline against which the progress and success of trainings can be measured. Furthermore, the specific internal Health and Safety at Work Act needs to be checked against the injury records, in order to develop recommendations for improving the safety and health of employees.

4.2.3 Performance Appraisal

Before the training, the employees' performance needs to be appraised in terms of efficiency (concerning the time and quality of assignments) and knowledge of the operational procedures. Based on such performance appraisal, the curriculum for training activities will be adjusted.

Operational efficiency and knowledge is evaluated either through interviews or tests and, once done, this evaluation constitutes one of the inputs for the training curriculum.

4.2.4 H&S Equipment Inventory

In order to provide recommendations for purchasing of H&S equipment, the existing equipment inventory is to be reviewed. In case no inventory exists, a new one should be built. The information should be available in and obtained from the company books; if necessary, however, physical control of the existing equipment could be conducted. Information about the state of the equipment should be also obtained by interviewing the employees working on critical jobs.

4.3 Update of Internal H&S Procedures

Following the collection of data, obtaining evidence, and review of documents and performances, an analysis of the current procedures should be performed. The outcome of this action should be a document with recommendations for improvement of the existing or introduction of new H&S procedures in the company. This task should be completed by the advisors.

The recommendations should be presented to the working group and - if approved - presented to the decision makers. Together with the trainings, this measure represents the core of the H&S capacity development of the specific PUC and should be presented as such.

The internal H&S procedures should be updated by the company's legal advisor in collaboration with the advisors.

Finally, the responsible person in the company should sign off the new procedures, upon which they become obligatory for all employees, both managers and workers.

4.4 Training Curriculum Development

Based on the findings of the previous steps, a training courses program will be defined for every job, with a focus on specific operational skills. For example, landfill workers will undergo a special training in the basics of landfill operations. The curriculum should be adaptable, as the work equipment is different in each PUC.

The training program is usually provided for the following four job positions:

- Employees working on collection of waste;
- Truck drivers;
- Work equipment operators;
- Workers on waste treatment facilities.

In the field of waste collection and treatment, the following potential topics might be included in the training:

- Professional training depending on the workplace;
- Hazardous waste handling;
- Working in extreme weather conditions;
- Working in a reduced visibility environment;
- Working on internal traffic corridors;
- Working with and near heavy duty equipment;
- Working with pneumatic work equipment.

In addition, each curriculum will include a separate section on the basic training in fire protection issues, as it has been indicated that fire is a frequent cause of injuries in the waste sector.

Trainings will be provided for each job type, in accordance with the previously specified curriculum. Trainings should be delivered for groups of up to 10 participants at a time, in order to ensure high quality delivery and adequate transfer of knowledge. Trainings should include theoretical and practical parts.

The professional education will have direct influence on the number of employees involved in the process, the number of hours required for completion of activities, and the quality of activities completed.

- Number of employees engaged in container discharging operations –this number could be reduced after the training;
- The standard time required for discharging a container is 45 s; the common practice in Serbia is more than 1 minute per container;
- The proper work of the compactor operator can reduce the overrun by 30% or more, which will contribute to the reduction of fuel consumption and compactor wear and tear;
- The proper work of the garbage truck driver can improve the operation and reduce the fuel consumption (also with GPS), as well as ensure higher safety;
- Another benefit is the savings achieved in terms of depreciation of trucks, work machines, and waste bins and containers; redirecting such saving to workers as a bonus for proper work and adherence to the rules should be considered;
- The professional education will contribute to the reduction of the number of hazardous situations;
- Identification of and working with hazardous waste adds to the work quality;
- Identification of raw material and hazardous waste for employees at the secondary separation facility.

4.5 Provision of H&S Equipment

Based on the job systematization and descriptions and the inventory of the existing equipment, the advisors will define the missing or required safety equipment in accordance with the specific job position and procedures. Following this, the advisors are to develop a specification of the H&S equipment to be procured, along with a cost estimate.

H&S equipment usually contains items like protective shoes, protective uniforms, protective glasses or protective gloves.

5 ACTION PLAN FOR IMPLEMENTATION OF H&S CAPACITY DEVELOPMENT MEASURES

Activity	Time frame												Responsible person
	Month 1				*Month2*				*Month 3*				
	I	II	III	IV	I	II	III	IV	I	II	III	IV	
1. Preparation activities													
1.1 Meeting with the Company													*H&S and SWM expert*
1.2 Setting up a working group													*H&S and SWM expert with PUC representatives*
1.3 Development of an action plan (AP)													*H&S and SWM expert with PUC representatives*
2. Data collection and planning													
2.1 Job systematization and procedures review													*H&S and SWM expert*
2.2 Review of past injuries records													*PUC representatives*
2.3 Performance review													*SWM expert*
2.4 Inventory of the H&S equipment													*SWM expert*
2.5 Update of internal H&S procedures													*H&S and SWM expert*
2.6 Set up Curriculum and Instruction support package													*H&S and SWM expert*
3. Provision of the H&S equipment													
3.1 Development of a detailed specification of the necessary H&S equipment													*H&S expert*

6 KEY DELIVERABLES AND INPUTS BY ADVISOR

The implementation of the advisory service and the above given tasks requires the setting up of a team of at least 2 advisors with the profile as given in Section 8 of this ToR.

The key deliverables and inputs to be provided by the advisor for each stage of the service provision are as follows:

Key tasks and deliverables of Advisor	Number of days [2] needed for two experts
1. Preparation activities	**5 days**
1.1 Meeting with the Company	2 days
1.2 Setting up a working group	1 day
1.3 Development of an action plan (AP)	2 days
2. Data collection and planning	**12 days**
2.1 Job systematization and procedures review	1 day
2.2 Review of past injuries records	1 day
2.3 Performance review	3 days
2.4 Inventory of the H&S equipment	1 day
2.5 Update of internal H&S procedures	3 days
2.6 Development of a Curriculum and Instruction support package	5 days
3. Provision of the H&S equipment	**1 day**
3.1 Development of a detailed specification of the necessary H&S equipment	1 day
4. Introduction of H&S	**3 days**
4.1 Trainings for employees in accordance with the curriculum	2 days
4.2 Delivery of the equipment	1 day
TOTAL	**23 days**

[2] The number of days varies depending on the particularities, current status and needs of the municipality/utility company

7 SETTING UP THE METHOD AND MONITORING THE FINANCIAL BENEFITS

The progress monitoring model primarily focuses on the changes related to the expected improvements in terms of the employees' health and safety as a result of the process implementation and the use of appropriate personal protection equipment allocated to the cities / municipalities prior to the implementation.

Table 1 – Basic data – the composition of this table is such that the data fed into it referring to the state of play prior to the implementation (one year prior to the implementation) as well as in the course of the project remain unchanged. The key indicators mostly relate to data regarding the total number of employees, the number of employees engaged in higher-risk jobs, the number of employees covered by safety at work trainings and professional development related to proper operation of the equipment, data on employees provided with personal protection equipment and on the number of injuries at work in the previous year, as well as job-related data, for each position individually. Costs incurred due to injuries of employees in the previous year are also included in the key indicators, such as: number of sick leave days, lost time and employees' treatment costs, and insurance costs. In addition, the indicators depicted in the table allow for identification of the material damage to the business and include the number of failures of equipment due to inadequate operation and any material damage inflicted on third parties, as well as costs incurred as a result of non-compliance with the legal regulations and the potential sanctions imposed by the competent authorities.

Table 2 Monitoring – this table includes the changes occurring on a monthly basis with regard to any recorded injuries at work presented by position, as well as changes in the direct costs incurred due to injuries (material damage within the company, material damage caused to third parties, and sick leave, treatment and insurance of employees), as well as changes in the costs resulting from sanctions imposed by the competent authorities. In short, this single table monitors every monthly change against the key indicators set up in the basic table.

The results related to better working parameters should be in the form of quarterly reports, to ensure continuous monitoring of the progress.

Observe the number of worker injuries before and after the implementation of the program. These results will not be noticeable in a shorter period of time, as it takes several years; thus, the results will not be visible within the time frame of the project.

- Direct benefits include less lost time due to injuries at work;
- Lower medical treatment costs;
- Lower financial compensation for health and safety issues.

7.1. Case Studies

7.1.1. Backi Petrovac Case Study

Implementation

The Municipality of Backi Petrovac in Serbia was one of the local self-governments that applied and was selected for piloting the H&S capacity development business process under the "Business Cases for Improved Waste Collection and Valorization" project. By

applying for the pilot process, the Municipality of Bački Petrovac clearly expressed its commitment and political will to implement it. SeSWA (Serbian Solid Waste Association), as a partner organization on the project, delegated a solid waste management expert to guide the Municipality through the process.

At the first meeting in Backi Petrovac, the advisory service was presented and PUC "Progres" was informed about the steps and activities that should be implemented. The working group responsible for the further implementation of the project was also established.

During the first meeting, it was decided that representatives of PUC should collect the data necessary for the project preparation. The responsibility for providing the H&S training was defined in accordance with the specific laws, and was made obligatory for all employees in the company. According to the PUC in Backi Petrovac, an internal act on risk assessment is in place, specifying the positions and the risk to health and safety identified.

It was agreed that representatives of PUC should develop e review of recorded injuries in the past, as this is very important in terms of the focus of the training and professional specialization. The results of the training will be visible based on the injuries database, since it is expected that a reduced number of injuries will be recorded, which is one of the measurable benefits for the company.

For the purposes of the professional specialization training, the main working parameters of the employees, i.e. their efficiency in terms of the time and quality of job completion were determined. Based on this, the curriculum and training activities were defined.

In line with the data collected and the predefined process implementation plan, and for the purpose of ensuring health and safety, it was proposed that 15 sets of safety equipment be procured and used in PUC "Progres" Backi Petrovac. Every employee in the waste management sector who undergoes the training for professional development and safety and health at work was to be provided with a set of health and safety protective equipment.

In their capacity of an advisor and based on the previous meeting arrangement and on the data collected, the SeSWA representatives defined the training program for the employees of the PUC. The subject areas that were included in the training are as follows: Theoretical Training, Basics of Waste Management and Professional Development, Fundamentals of Safety and Health at Work and Reasons for their Implementation, Fire Protection, Basic of Hazardous Substances Management, Identification of Hazards at the Workplace and Workplace Risk Assessment, Theoretical competence Test, Professional Education about Waste Management – Theory and Practice.

On 10/26/2018, the training of employees in PUC was delivered, with all employees in waste collection and disposal activities present and 15 employees actually attending the training. At the end of the training, protective equipment was assigned to the employees.

Monitoring and Evaluation

In the course of 2018, whic was taken to be the reference year, there were no injuries at work at PUC „Progres" from the Municipality of Backi Petrovac and consequently also no costs incurred as a result of the effects of injuries at work. There were also no injuries at work over the six months' period of monitoring the process. The complext training that embedded all aspects of the theory on and practical application of health and safety at work measures, including the provision of the personal protection equipment for all of

the employees involved in the project, considerably contributed to raising the level of the quality of protection of employees and their safety in terms of potential injuries during their regular jobs in waste management. When we look at the process, in addition to the number of injuries at work and work-related ones, the key indicators covered by the monitoring included the financial savings achieved as a consequence of the potential direct costs incurred in relation with health and safety at work, as follows: costs of employee sick leaves due to injuries at work or work-related injuries, costs of additional engagement of labor that the PUC would have to provide, as well as costs incurred on the grounds of the legally prescribed sanctions in the Republic of Serbia. In this context, based on the calculation of the total costs of lost time due to injury for 3 employees only and the costs of additional engagement of labor to ensure unimpeded performance of the regular operations and owing to the process introduced, it may be concluded that the financial savings of the employer total 2,255.26 EUR on a monthly basis, and based n the minimum average earnings in the Republic of Serbia in 2019. Over the six-month period of process monitoring analyzed, therefore, the total savings for the employer on these two key cost items amount to 13,531.53 EUR for three employees and calculated against the minimum average earnings.
In addition, pursuant to item 8 of Article 69 of the Law on Health and Safety at Work of the Republic of Serbia, the employer is sanctioned by a fine of 6,780 up to 8,475 EUR if they fail to equip the employee with the skills and equipment required for healthy and safe work. The costs of the minimum prescribed fine for 15 employees that underwent the training would on these grounds amount to 101,700 EUR, which is an indicator of direct savings for the employer, i.e. PUC "Progres" on account of having implemented the process.

7.1.2. Bijeljina Case Study

Implementation

The city of Bijeljina in Bosnia and Herzegovina was one of the local self-governments that applied and was selected for piloting the H&S capacity development business process under the "Business Cases for Improved Waste Collection and Valorization" project. By applying for the piloting, the city of Bijeljina clearly expressed its commitment and political will to implement the process. SeSWA (Serbian Solid Waste Association), as a partner organization on the project, delegated a solid waste management expert to guide the Municipality through the process.

At the first meeting in Bijeljina, the advisory service was presented and PUC "Eko dep" was informed about the steps and activities that should be implemented. The working group responsible for the further implementation of the project was also established.

During the first meeting, it was decided that representatives of PUC should collect the data necessary for the project preparation and that PUC also has an Act on Risk Assessment that was provided for an inspection. Specific positions and their risk to health and safety were identified.

Representatives of PUC were to develop a review of recorded injuries in the past. The results of the training will be visible based on the injuries database, since it is expected that a reduced number of injuries will be recorded, which is one of the measurable benefits for the company.

For the purposes of the professional specialization training, the main working parameter of the employees, i.e. their efficiency in terms of the time and quality of job completion were determined and evaluated. Based on this, the curriculum and training activities will be defined.

In line with the data collected and the predefined process implementation plan, and for the purpose of ensuring health and safety, it was proposed 14 sets of safety equipment be procured and used in PUC "Eko dep". Every employee in the waste management sector who undergoes the training for professional development and safety and health at work will be provided with a set of health and safety protective equipment.

The training for workers at the landfill was carried out on January 4, 2019. The SeSWA expert included training of workers in safe work, adapted to various workplaces, which included working in different weather conditions, in a limited manipulative area, training in safe handling of machines, tools and equipment at the landfill, as well as in behaviour in accidents. The BASWA expert, with years of experience in fire safety issues, also hired by BASWA, delivered a training of workers at a landfill in initial firefighting skills in cases of self-ignition of the landfill or in cases of fire on facilities or machinery at the landfill.

Monitoring and Evaluation

In the course of 2018, which was taken to be the reference year, one employee was a 21-day sick leave, resulting in a direct gross cost incurred to the employer in the amount of 639 EUR. There were no injuries at work over the six months' period of monitoring the process. The complext training that involved 13 employees embedded all aspects of the theory on and practical application of health and safety at work measures. Personal protection equipment was provided for all of the employees involved in the project. In addition to the number of injuries at work and work-related ones, the key indicators covered by the monitoring included the financial savings achieved as a consequence of the potential direct costs incurred in relation with health and safety at work, as follows: costs of employee sick leaves due to injuries at work or work-related injuries, costs of additional engagement of labor that the PUC would have to provide, as well as costs incurred on the grounds of the legally prescribed sanctions in the Republic of Srpska. In this context, based on the calculation of the total costs of lost time due to injury for 3 employees only and the costs of additional engagement of labor to ensure unimpeded performance of the regular operations and owing to the process introduced, it may be concluded that the financial savings of the employer total 2,175.12 EUR on a monthly basis, and based n the minimum average earnings in the Republic of Srpska in 2019. Over the six-month period of process monitoring analyzed, therefore, the total savings for the employer on these two key cost items amount to 13,050.72 EUR for three employees and calculated against the minimum average earnings.

In addition, pursuant to paragraph 1 f item Z of Article 64 of the Law on Protection at Work of the Republic of Srpska, the employer is sanctioned by a fine of 1,281 up to 7,686 EUR if they fail to equip the employee with the skills and equipment required for healthy and safe work. The costs of the minimum prescribed fine for the 13 employees that underwent the training would on these grounds amount to 16,653 EUR, which is an indicator of direct savings for the employer, i.e. PUC "Progres" on account of having implemented the process.

8 QUALIFICATION OF THE ADVISORS REQUIRED

1. A waste management expert with a university degree in environmental engineering sciences, engineering or related disciplines. The expert shall have a minimum of 5 years' experience in waste management in developing and transition countries.
2. An H&S expert with a university degree. The expert shall have a minimum of 5 years' experience in H&S training in developing and transition countries.
3. Experience in provision of advisory services, including capacity development measures.
4. Experience in policy support for waste management development.
5. Computer literacy, MS Office is a must.
6. Strong organizational, interpersonal, moderation, facilitation and communication skills.

This model has been developed by the "Business Cases Development for Improved Waste Collection and Valorisation" Project, implemented by the GIZ Open Regional Fund for Southeast Europe - Modernisation of Municipal Services, commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ). The Project was implemented in Western Balkan partner economies, in the period October 2017-October 2019, in partnership with the Serbian Solid Waste Association (SeSWA) and the Network of Associations of Local Authorities of South East Europe (NALAS).

9 Annex 1 – Monitoring Tool

The annex is provided in a separate MS Excel File:

Route Optimization - Annex 1 Monitoring Tool

10 Annex 2- Regional Working Group Inputs - Lessons Learned through Implementation

During the third meeting of the Regional Working Group on Solid Waste Management held in Belgrade on 21 November 2019, the main focus was dedicated to discussion and presentation of the activities, changes and benefits of the piloted business process. The applied interactive method World Café resulted in outputs regarding three aspects: applicability of the piloted process in other local contexts, possible improvements, and way of dissemination of the project products. The content of this Annex is an added value to the ToR by bringing pragmatic reflection and recommendations on the process by the experienced practitioners from the region.

Health & Safety (mere zaštite i zdravlja na radu)

World Café Outputs

Applicability of the process

In the general opinion of World Café participants, the occupational safety and health process is extremely useful and applicable in all utility companies, whether they are involved in the collection and transportation, disposal or treatment of municipal waste. Accordingly, the process should focus on equipping and training of the workers, as well as truck drivers and workers handling various tools and equipment, and should pay particular attention to workers performing high-risk jobs. Also, the process should include the training of responsible persons and controllers, as well as the control of the use of personal protective equipment by workers when performing job tasks.

Improvement of the process

The introduction of ISO standards (eg. ISO: 9001 (QS), ISO: 14001 or ISO: 45001) can significantly contribute to occupational safety and health, bearing in mind that by introducing these standards (which do not require large financial investments in their acquisition) utilities have determined to further the process of protecting the health and safety of their workers.

In addition, a daily assessment of the knowledge of workers in the field (eg by their superiors) would contribute to a more serious understanding of the importance of safety and health at work by the workers themselves. In addition, if certain compensation and disciplinary measures were proposed to the utility companies for workers who adhere to, or fail to comply with the prescribed security measures, it is likely that accidental situations in the business will be minimized.

One of the very important suggestions during the World Café was to present to the responsible persons what consequences they may personally have in the event of death

or serious physical injury to the workplace workers, in order to motivate decision makers to pay more attention to health and safety at work.

Dissemination of the process

The participants in the World Café recognized the LGAs and associations of utility companies as the main actors that could contribute to a significant expansion and promotion of this process. To this end, the networks of National Waste Management Associations (SWAs) in all three participating countries of this project can be used for dissemination purposes. NALAS knowledge management system could also be one of the providers in each of the countries of SEE of the promotional material related to piloted process.