

Schools waste less

No. 2012/306-112TD-16

The Evaluation Report

by Dragiša Mijačić and dr Vesela Ćurković

May 2014



**EU IPA CBC Serbia - BiH
EuropeAid /131735/L/ACT/IPA**

Project "Schools Waste Less"

Contract no. 2012/306-112TD-16

The Final Evaluation Report

by
Dragiša Mijačić
dr Vesela Ćurković

April 2014

PREFACE

This report was prepared according to the Contract signed between PUC Duboko Užice and the Institute for Territorial Development (InTER) regarding the final evaluation of the Project "Schools Waste Less", financed within the scheme of the EU IPA Cross-Border Cooperation Programme Serbia - Bosnia and Herzegovina (EuropeAid /131735/L/ACT/IPA). The evaluation was carried out by Dragiša Mijačić, a team leader, and dr Vesela Ćurković, a team member, both experts of InTER.

The evaluation team wishes to thank the many individuals from Užice and Tuzla for dedicating their time to support the evaluation. The evaluation would not have been possible without their insights, advice, knowledge, contributions and support. Special thanks to Miloš Radojević, the project manager, who supported the evaluation team throughout the assessment process.

The evaluation was undertaken in April 2014.

Disclaimer: The views and comments expressed in this text are the responsibility of InTER and the evaluation team, and do not necessarily reflect the opinion of any other party, including PUC Duboko Užice, RDA Zlatibor, PUC Komunalac Tuzla, Teacher's association "Opstanak" or Centre for Ecology and Energy.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS	1
EXECUTIVE SUMMARY	2
INTRODUCTION	4
OBJECTIVE OF THE EVALUATION	4
METHODOLOGY	4
PROJECT DESCRIPTION	5
KEY FINDINGS	6
RELEVANCE	6
EFFICIENCY	8
EFFECTIVENESS	10
SUSTAINABILITY	13
IMPACT	14
CONCLUSIONS AND RECOMMENDATIONS	17
ANNEXES	19
ANNEX 1: LIST OF INTERVIEWED PEOPLE	19
ANNEX 2: LIST OF DOCUMENTS REVIEWED	21
ANNEX 3: REVIEW OF COLLECTED RECYCLABLE SOLID WASTE IN UŽICE	23
ANNEX 4: REVIEW OF COLLECTED RECYCLABLE SOLID WASTE IN TUZLA	24
ANNEX 5: TERMS OF REFERENCE	26

LIST OF ABBREVIATIONS

CEE	Centre for Ecology and Energy
DAC	Donor Assistance Coordination
InTER	Institute for Territorial Economic Development
JTS	Joint Technical Secretariat of the EU IPA CBC Serbia - BiH
OECD	Organisation for Economic Cooperation and Development
PUC	Public Utilities Company
RDA Zlatibor	Regional Development Agency "Zlatibor" Užice
SWL	"Schools Waste Less"

EXECUTIVE SUMMARY

This report covers findings, conclusions and recommendations from the final evaluation of the project "Schools Waste Less", financed within the scheme of the EU IPA Cross-Border Cooperation Programme Serbia - Bosnia and Herzegovina. The project was jointly implemented by PUC "Duboko" Užice and PUC "Komunalac" Tuzla, in cooperation with Regional Development Agency "Zlatibor", the Teachers' Association "Opstanak" and the Centre for Ecology and Energy.

The project was 15 months long, finishing in April 2014 when the evaluation was commenced. The main purpose of the project was to establish the concept of primary waste selection in 28 schools in Užice and Tuzla. The project action included creating a system for primary waste selection within selected schools; increasing technical and human capacities of 2 public utilities; raising awareness within schools' community (managers, teachers, other employees and pupils) on primary selection of solid waste; promoting the concept of waste selection through the work of eco-clubs and quiz and eco camps; and promotion of results to the wider community. The budget of the intervention was €317,748.00, where 257,804.38 (81.13%) was requested from EU IPA CBC SER-BiH Programme.

The methodology of analysis included collection and analysis of primary and secondary sources and triangulation of findings. Legislative frameworks of Serbia and BiH for solid waste management are studied in details, as well as project documents and other external reports. The evaluation team also carried out interviews with key stakeholders both in Užice in Tuzla.

The evaluation shows the project "School Waste Less" was successfully implemented. The project proposal was designed in close cooperation of all project actors, which significantly contributed to efficiency and effectiveness of the project action. The project design was relevant to the legislative framework and local/regional action plans for solid waste management, as well as to priorities of project partners and needs of identified target groups. During the implementation the project has adjusted to the circumstances, which additionally contributed to the relevance of the action. The only concern might be in the fact that local public utility company Bioktoš from Užice did not participate in the project action, which affected not only relevance but prospects on impact as well.

The project was implemented in a highly efficient manner. The reason for high efficiency can be found in good division of labour between project partners, trustworthy relationship and good communication between partners, and in excellent project management procedures. As a result, the project was implemented in time and without any major delays. The project also established good monitoring and reporting procedures, both internal and external.

The project was also effective in its operations. Although there is an issue with design of outcome and some output indicators, the evaluation can confirm that the project has succeeded to achieve its specific objective and all expected results. The project operation has also created results and spin-offs that go beyond the project design.

There is a high likelihood that the achieved results will sustain after the project implementation. Two public utility companies and schools have shown willingness to continue with the selection of solid waste. Beneficiary institutions will maintain the purchased equipment, while Biology teachers will use training materials and quiz manuals for future work of eco-clubs.

In terms of impact, the project has contributed to the issues that might have positive long-term effects on solid waste management and environmental protection. The project has managed to separate schools' waste, which is a good starting point for creating a system of waste selection in other segments of the society. The evaluation confirms that there is an evidence of changing behaviour in the vicinity of schools, since there are retail shops that select and dispose their solid waste in schools' containers. There is also a number of institutions that join this project by organising primary selection of their waste. Nevertheless, in order to stimulate the impact, the partners should continue working on issues related to primary selection of solid waste management, promoting good practices achieved through this project and expanding the system of waste selection to other institutions, public & private companies and finally to the city itself.

Based on findings, the final evaluation proposes the following recommendations:

RECOMMENDATION 1: During the project design it is important to design comprehensive objectives and measurable indicators, otherwise it will be very difficult to measure the project achievement at any level (output, outcome or impact).

RECOMMENDATION 2: The project partner should continue working on promotion of best practices created through this intervention, trying to create a broad consensus on importance in primary selection of solid waste. In that regard, the project partners should advocate local authorities to pay more attention to issues related to solid waste management.

RECOMMENDATION 3: On a short-run, the project partners should aim to extend to all public institutions, large enterprises and service industry (i.e. banks, retail shops, hotels, etc.).

RECOMMENDATION 4: The project partners should continue working on environmental issues with cross-border partners, either the ones from this project or others, since there are multiple benefits in exchanging knowledge, skills, ideas or best practices.

INTRODUCTION

The final evaluation covers findings, conclusions and recommendations arrived from the assessment of the project "Schools Waste Less", financed within the scheme of the EU IPA Cross-Border Cooperation Programme Serbia - Bosnia and Herzegovina (EuropeAid /131735/L/ACT/IPA). The project was jointly implemented by PUC "Duboko" Užice (Applicant 1 - Lead Partner) and PUC "Komunalac" Tuzla (Applicant 2), in cooperation with Regional Development Agency "Zlatibor" (RDA Zlatibor), the Teachers' Association "Opstanak" (Opstanak) and the Centre for Ecology and Energy (CEE).

The request for the final evaluation has been determined within the Terms of Reference (ToR), followed by the Contract signed between PUC "Duboko" and InTER on 31 March 2014.

The final evaluation was carried out in April 2014.

OBJECTIVE OF THE EVALUATION

Objective of the final evaluation is to perform independent assessment of project performance at both sides of the border and measure achievements of project objectives, as well as to provide applicable recommendations for future implementation of similar projects.

The evaluation is based on OECD/DAC criteria, assessing relevance, efficiency, effectiveness, sustainability and impact of the project intervention.

METHODOLOGY

The evaluation methodology was designated following the requirements of the ToR. The evaluation was performed within three phases: (1) desk review; (2) field interviews; and (3) analysis & reporting. Each phase of the evaluation is described below in details.

Desk Review: Following the signing of the Contract, the evaluation team carried out a review of all project documentation, which mainly included the project proposal and reports, yet also other project documents that is provided by the project partners. As a result of this phase, the evaluation team has made a list of assumptions that were later verified through interviews with the implementing partners and other beneficiaries.

Field Interviews: Field interviews were organised both in Užice and Tuzla, with representatives of all actors that were engaged in the project implementation, as well as with teachers that were engaged in project activities. The fieldwork also covered interviews with school directors and representatives of civil society organizations that were not directly targeted with this intervention. The list of interviewed people is provided in the Annex 1.

Analysis & Reporting: This phase included review of all data collected through first two phases, which were analysed against OECD DAC criteria. This phase also included design of key recommendations, as well as delivery of the report to the client.

PROJECT DESCRIPTION

The project “Schools Waste Less” is a joint venture of two public utilities, Duboko from Užice and Komunalac from Tuzla, implemented in cooperation with RDA Zlatibor, the Teachers' Association “Opstanak” (Opstanak) and the Centre for Ecology and Energy (CEE).

The project was designed to contribute to environmental protection through raising awareness on primary waste selection. The overall objective of the action was *to contribute to maintaining the high quality of the border area environment by cooperating in joint initiatives*. On the other hand, the specific project objective of the intervention was *to establish the concept of primary waste selection in 28 schools in Užice and Tuzla*.

The project targeted to achieve four results:

- R1: Technical framework for primary waste selection created in 28 schools in Užice and Tuzla;
- R2: Technical and human capacities of 2 Public Utility Companies for collecting transport and primary waste selection increased;
- R3: 112 employees in 28 schools prepared for primary waste selection management and support in schools;
- R4: Primary waste selection concept implemented and promoted in schools in Užice and Tuzla;
- R5: Local and wider communities introduced with examples of good practice in primary waste selection in schools.

The project action was organised around 21 activities clustered in five groups that are directly associated with the expected results. The core activities of those groups are: purchasing trash bins and containers; procurement of special purpose vehicles; trainings for school janitors, cleaning staff and biology teachers; organising info sessions, quiz competitions and eco-camp; and promotion & visibility.

Target groups of the project were 2 Public Utilities Companies, primary and secondary school pupils, Biology teachers, cleaning staff and janitors from 28 schools. Final beneficiaries were school management, local government and citizens from Užice and Tuzla (~170,000).

The budget of the intervention was €317,748.00, where 257,804.38 (81.13%) was requested from EU IPA CBC SER-BiH Programme.

Total duration of the action lasted 15 months.

KEY FINDINGS

RELEVANCE¹

The centre of the attention of this project action was experimenting with primary waste selection in Užice and Tuzla within primary and secondary schools. The project idea was initiated by PUC Duboko, then further developed in cooperation with RDA Zlatibor and PUC Komunalac Tuzla, and finally shaped with project partners (NGO Opstanak and the Centre for Ecology and Energy - CEE). In other words, all actors that were engaged in the project were participating in project design. This modality in designing the project intervention significantly contributed to the relevance of the project action, making sure that activities are in close coherence with needs of the target groups and final beneficiaries.

Several laws regulate waste management in Serbia. Among them the most important are the Law on Waste Management² the Law on Environmental Protection,³ and the Law on Communal Affairs.⁴ In addition to legislative acts, there is also a Strategy for Waste Management of the Republic of Serbia for 2010-2019.⁵

Local self-governments are obliged to adopt the Regional⁶ and the Local Plan for Waste Management,⁷ which will regulate selection of waste for recycling.⁸ The City of Užice has adopted the Bylaw on Communal Arrangement,⁹ the Local Plan for Waste Management 2011-2020 and the Regional Plan for Waste Management,¹⁰ which regulate waste management in the City of Užice.

According to the local acts, the City of Užice recognizes a local Public Utility "Bioktoš" (hereinafter Bioktoš) as responsible for solid waste management, including separation of waste. On the other hand, as a regional company, Duboko is in charge only for secondary waste selection and disposal, which is delivered by the local public utilities.¹¹ Therefore, the relevance of including Duboko in this project action, instead of Bioktoš, might be under question.

Primary waste selection¹² in Užice is recognised as a necessity, which is clearly stated in the Local Plan for Solid Waste Management. This plan prescribes a program for waste selection,

¹ Relevance is defined as the extent to which the objectives of an intervention are consistent with target and beneficiaries' groups requirements, country needs, global priorities and partners' and donors' policies and measures.

² "Sl. glasnik RS", br. 36/2009 and 88/2010

³ "Sl. glasnik RS", br. 135/2004, 36/2009, 36/2009 - dr. zakon, 72/2009 - dr. zakon i 43/2011 - odluka US

⁴ "Sl. glasnik RS", br. 88/2011

⁵ "Sl. glasnik RS" br. 29/2010

⁶ "Sl. glasnik RS", br. 36/2009 and 88/2010, Article 12

⁷ "Sl. glasnik RS", br. 36/2009 and 88/2010, Article 13

⁸ "Sl. glasnik RS", br. 36/2009 and 88/2010, Article 43

⁹ Odluka o komunalnom uređenju "Sl. list opštine Užice" br 6-1/08

¹⁰ Odluka o komunalnom uređenju "Sl. list opštine Užice" br 12/13

¹¹ During interviews with representatives of PUC Duboko and RDA Zlatibor, it was mentioned that the City of Užice has adopted an act that gives the right to PUC Duboko for primary waste collection. The evaluators could not find such act/decision in the Official Gazette of the City of Užice

¹² Primary waste selection is not properly defined within the legislative framework. The Law on Solid Waste Management defines a term "classification of waste" that refers to separation of waste to one or more categories,

where the communal waste is separated into two categories: "dry" fraction for recyclable waste (i.e. paper, glass, plastic, PET, etc.) and "wet" fraction for biodegradable waste. The City has decided that Bioktoš is in charge of implementation of this program, and the process is organised by placing separate trash bins for dry and wet waste at each dumping site within the city. Although the purpose of this evaluation was not to assess the quality of this program, many interlocutors and secondary sources confirmed that awareness among local authorities for separation of solid waste remained at the very low level. Local population also did not show strong consent on separating the waste.¹³ Therefore, this intervention rightly focused on raising awareness issues for primary waste selection among local population groups, in the case of this action to primary and secondary school children and their teachers.

The Strategy for Waste Management of the Republic of Serbia defines short-term (2010-2014) strategic objectives, and among them there is one that aims to develop a system for primary selection of solid waste within local self-governments. Among activities and measures assigned to this specific objective, two of them are closely relevant to this project action: raising awareness on classification of solid waste at the source; placement of colourable trash bins in local self-governments for collection of recyclable waste. Besides, the Law on Waste Management prescribes that households and other generators of communal leftover should separate waste for recycling.¹⁴ Therefore, working on primary selection of solid waste is definitely in line with the national legislation and strategic framework that regulates this field in Serbia.

Solid waste management in Bosnia and Herzegovina is regulated at the entity level. The legislative framework is given within the Law on Waste Management,¹⁵ as well as by several rulebooks and bylaws that classify types of waste and procedures for their treatment. The Law defines that each canton in the Federation will adopt the Cantonal Plan for Waste Management that is in line with the Strategy for Waste Management of the Federation of BiH.¹⁶ The Strategy for Solid Waste Management of the Federation of BiH has been adopted for period 2008-2018, and the Federal Plan for Solid Waste Management for period 2012-2017. The Strategy has determined ambitious objectives that aim by 2018 to recycle 55% paper and cardboard, 15% of plastic, 65% of iron/metal, 40% of glass and 70% of bio-waste from public parks. These indicators cannot be achieved without having a program that targets primary waste selection at the source and raising awareness among citizens, which makes this project action relevant to the Strategy, especially in terms of raising awareness among local population since collected recyclables are not significant for making substantial contribution to those indicators.

the Regional Plan for Solid Waste Management defines "primary waste selection" as classification of waste to dry and wet fraction at the households. The National Strategy for Solid Waste Management and the Local Plan for Solid Waste Management both use term "primary waste selection" yet none of them defines what that term is referring to.

¹³ This might be due to the fact that effective mechanisms for waste selection was largely missing.

¹⁴ "Sl. glasnik RS", br. 36/2009 and 88/2010, Article 43

¹⁵ "Službene novine Federacije BiH", 33/03 and 72/09

¹⁶ "Službene novine Federacije BiH", Article 9

The government of Tuzla Canton was supposed to develop a Cantonal Plan for Waste Collection for the period 2013-2018, yet that document still has not been prepared.¹⁷ In terms of solid waste management in Tuzla Canton, the Law on Environmental Protection¹⁸ and the Law on Communal Affairs¹⁹ are currently applicable. The project action is relevant to those legislative acts as well.

The project action is also relevant to the curriculum of primary and secondary schools, both in Tuzla and Užice. The project is especially relevant to the work of schools' eco-clubs that educate students on issues related to ecology and environmental protection. The project was also relevant in improving teaching methods, especially in giving practical examples to theoretical explanations. The project was also relevant to school scoring in Serbia, which is performed annually by the Ministry of Education. The relevance of the action was increased by two civil society organizations (Opstanak and CEE), which created tailored made teaching materials for the work of the eco-clubs within schools that participate in the project.

It is important to emphasise that relevance of the project was re-confirmed in late 2013 and early 2014 when natural disaster with pollution of drinking water happened in Užice. At that time bottled water was distributed to the citizens in Užice, and it was very important that this project could collect PET bottles at least within schools.

The project design is in line with the objectives of the EU IPA CBC Serbia-Bosnia and Herzegovina. Cross-border relevance could be found in sharing experience in solid waste management between two cities, as well as in sharing best practices in teaching courses on environmental protection and biology both in primary and secondary schools.

EFFICIENCY²⁰

The project action was characterised by high efficiency in all segments of project operations. The main reason behind the high efficiency is a suitable implementation modality reflected by good division of labour and trustworthy relationship among the involved actors, as well as in proper project management. As a result, all activities are implemented almost without any delays and according to the action plan.

Division of labour was done according to the responsibilities and abilities of the actors involved. RDA Zlatibor delegated an experienced project manager with excellent leadership and coordination skills, which was absolutely crucial for the success of the project since other partners did not have a direct experience in managing EU-funded project of this scale, especially not one with a cross-border cooperation nature. The project manager has established excellent relationship with all project partners, based on cooperation, mutual trust and understanding, which led the whole intervention into the right direction. The project manager also has good skills in mobilization of key stakeholders such as high municipal

¹⁷ Monitoring Report on the performance of Tuzla Cantonal Government in period 01/01 - 31/12/2013, page 27, by Centri civilnih inicijativa, available at: <http://bit.ly/1kI7G5y>

¹⁸ Službene novine TK 6/98

¹⁹ Službene novine TK 11/2005

²⁰ Efficiency is a measurement of project management performance with regard to achieving the goals by using resources at minimum cost. Effective management is a key part of both efficiency and effectiveness of the available funds. Given the limitations of project design and related concerns, effective management is often a key driving force to scope out the true position for intervention and to identify corrective measures.

authorities or school management, which was also very important contribution to the project implementation. The project staff from project partners were highly competent for their assignments, showing high level of performance in implementation assigned duties.

Duboko and Komunalac are two public utilities with similar types of operations,²¹ therefore they speak the same language when it comes to solid waste management. In other words, cooperation between two public utilities was very good, which was beneficial to the efficiency of the intervention. It is the same case with cooperation between Opstanak and CEE. Since those two organizations have similar mission which focuses on issues related to education and environmental protection, cooperation between them was also easy and smooth. It is important to note that cooperation between Duboko and Opstanak, or Komunalac and CEE was also very good, which enabled successful implementation of joint activities, and even ones which are not originally planned by the project proposal such as numerous study visits of school masters and pupils to dumping sites and plants for solid waste selection.

Trustworthy relationship was also an important part of good efficiency. The evaluation mission can confirm a high level of trust among project partners, reflected by smooth implementation of assigned duties, and confirmed by willingness to continue cooperation in the future. Among other factors, trust between partners was developed by good communication between partners, very often on a daily level. Communication via Internet/e-mails contributed to capacity building of skills among many schoolteachers, since they did not have the opportunity to use e-mail correspondence that often in their work.

Proper time management also reflected the success of project management. The action plan was designed at the beginning of the intervention and it was adjusted to the school calendars. All project partners were sticking to their duties, and only minor delays occurred with procurement of trucks and trash bins. Nevertheless, those delays did not affect the project implementation whatsoever. The success in time management relies also in the fact that Biology teachers implemented many project activities, since their regular teaching is very much dependent on good planning.

The project also succeeded to create good monitoring system through monthly reports in which all partners had to participate. The project manager was in charge for external reporting to the Joint Technical Secretariats and EU Delegation in Serbia, while the Applicant 2 (Komunalac) prepared those reports on Bosnian side.

Although the evaluation assignment did not have a mandate to perform the financial audit, the overall impression is that financial management was appropriate. The co-financing was mainly covered through the salaries. Appropriate financial management was also confirmed by two external monitoring reports that were commenced by the Joint Technical Secretariat during the project implementation.

²¹ Although Duboko and Komunalac are both public utilities in charge of solid waste management, there is a difference between them. While Duboko is a regional enterprise with responsibility in waste disposal and secondary waste selection, Komunalac is a **local** public company that takes care of both, primary and secondary waste selection and waste disposal.

EFFECTIVENESS²²

The project action has been organized around a single specific objective, which is defined as *establishing the concept of primary waste selection in 28 schools in Užice and Tuzla*. This objective was aimed to be measured by the indicator that is defined as following: *total amount of primary selection waste in schools increased for 15% until the end of project activities*. The evaluation confirms that the specific objective has been achieved since a system for primary waste selection has been established in 28 schools, 14 of them in Užice and 14 in Tuzla. This can be firmly confirmed by project reports and external monitoring missions, as well as by the evaluation mission that spoke with 28 Biology teachers (one per each school) both from Tuzla and Užice.

Nevertheless, it should be noted that the outcome indicator was not designed properly since there is no baseline data that will enable us to measure the change. Therefore, the evaluation cannot firmly confirm the increase of 15% of selected waste. However, from the interviews with biology teachers, a couple of schoolmasters and representatives of Duboko and Komunalac, it might be concluded that the level of solid waste that is selected has been drastically increased during the project implementation. There are a couple of indications for this claim. First, the level of (unselected) waste in classroom baskets is much less from the moment when the trash bins for primary selection were installed.²³ Second, the schools were using the system for primary selection of waste when they cleaned their archives and premises, during winter and summer breaks.²⁴ In the past this type of waste was uncategorised and dumped together, therefore there is a clear contribution of the project to primary selection of waste. Third, and this is also associated with impact, there is an evidence that action on primary waste selection at schools has contributed to changes of final beneficiaries (i.e. nearby shops, other institutions, pupils that brings household waste to school), which also contributed to the amount of separated solid waste at the schools (final beneficiaries use school containers to dump their waste).

It is also important to mention that effectiveness of the project was achieved by good relationship with education authorities at the local level. In particular, the project was presented to the Board of Schools' Directors in Užice, which provided support that was crucial for implementation in all 14 schools in the City. In Tuzla, the crucial support was received by the Tuzla Pedagogical Bureau, which proposed 14 schools for participation in this project based on their results in ecology. This type of support received from supreme education institutions was very important for the management of the schools, who were encouraged to actively participate in the project action.

The project action had 5 project results and 21 activities, where three activities were assigned to the first, second and third expected result, eight activities were assigned to the fourth and

²² Effectiveness is defined as a measure of immediate and observable change in the target groups as a direct result of project activities and the delivery of outputs. It is observed through verification of the expected outcomes.

²³ This was confirmed in conversation with janitors and cleaning staff

²⁴ Volume of recyclable waste collected at schools is presented within Annex 3 (for Užice) and Annex 4 (for Tuzla). From those figures we might conclude that the peak in weight of collected solid waste was in December 2013, when the schools were cleaning their premises.

four activities to the fifth expected result. Summary findings of the expected results were presented below.

RESULT 1: Technical framework for primary waste selection created in 28 schools in Užice and Tuzla.

Overall finding: There is a body of evidence that can firmly confirm achievement of this result. Technical conditions were successfully created in all 28 schools, 14 of them from Užice and 14 in Tuzla. The project covered all primary and secondary schools in Užice, while in Tuzla the schools had to compete for participation in the project.

Status of Indicators: **Indicator:** 336 bins for primary waste selection and 14 containers purchased and set up in schools in Užice and Tuzla until third month of project activities.

Finding: The project has succeeded to purchase necessary trash bins and containers for establishing technical conditions for primary waste selection. Based on the analysis in the schools there was a modification in the number of trash bins that were procured. Namely, the analysis showed that there is a need for smaller bins than it was originally planned, which increased the number of items. Therefore, instead of 168, 251 plastic bins was purchased in Užice (in two sizes and four colours). This was a justifiable increase, which was confirmed by approval of the Interim Report. There was a minor delay in purchasing the trash bins (the purchase did not happen within first three months, yet that did not significantly affect the project implementation).

RESULT 2: Technical and human capacities of 2 Public Utility Companies for collecting, transport and primary waste selection increased

Overall finding: Technical capacity of the two public utility companies was increased by purchasing 2 vehicles (one per each PUC). Those trucks were necessary for project implementation since they were used for collection of solid waste at the schools. In other words, without those trucks it will not be possible to implement the project since both PUC did not have their own vehicles that could be used for the purpose of this project. It is also important to mention that the project purchased specialized trucks, which are tailored to the needs of two PUC. In other words, there is a difference in functionality of trucks purchased for Duboko and Komunalac. As a result of this difference, Duboko is able to measure the weight of solid waste collected at each school, which is not technically possible in case of Komunalac.

Results on increasing human capacities at two PUC are rather weak, yet the project itself has not been designed to be strong on this component.

In other words, the project organised introductory trainings on primary selection of solid waste at two PUC, which primarily focused on establishing the system for collection of waste in schools.

Status of Indicators: **Indicator:** 2 vehicles for selected waste transport purchased, 4 presentations conducted for 2 PUC employees in Užice and Tuzla until fourth month of project activities.

Findings: The indicator has been achieved, since the project succeeded to purchase 2 specialised vehicles and to organize presentations for PUC employees. There were minor delays in purchasing vehicles yet that did not significantly affect the project implementation.

RESULT 3: 112 employees in 28 schools prepared for primary waste selection management and support in Schools

Overall Finding: The project organized presentations for janitors/cleaning staff and other teachers in each school where the project was implemented. The project also organized specialized trainings for Biology teachers that facilitated the implementation in their respective schools.

This expected result is designed in the same way as the associated indicator, which is not methodologically correct.

Status of Indicators: **Indicator:** 112 school employees introduced with primary waste selection process through 4 presentations and 2 trainings.

Finding: There was a modification of this indicator, since according to Approval of Notification letter 2 no. 06025 from 14th of February, the project organized presentations and consultation with janitors/cleaning staff and other teachers within each school. In other words, the number of presentations is much higher than what was originally planned. In total, 114 participants joined presentations in Užice and 105 participants in Tuzla. These figures show that the indicator was reached.

The project also succeeded to organize trainings for teachers, which was necessary for successful implementation of the project intervention.

Note: Since the project indicator was re-designed, there was a need to re-design the logical framework as well.

RESULT 4: Primary waste selection concept implemented and promoted in schools in Užice and Tuzla

Overall Finding: The evaluation confirms that project has managed to successfully implement a system for primary selection of solid waste in schools of Tuzla and Užice. The system of primary selection was organized successfully in all its segments: from raising awareness within the

schools through education of pupils, janitors, cleaning staff and teachers, to creating efficient system with Duboko/Komunalac to empty trash bins regularly.

Status of Indicator: **Indicator:** 20.000 pupils and teachers introduced with primary waste selection process through printed leaflets, group-informing, 500 pupils participate in quiz competitions, 56 pupils participate in two common eco-camps.

Findings: The project designed and printed leaflets, later distributed to all pupils in targeted schools. The project also organized quiz competitions for pupils, which was very well accepted among pupils, especially among those that participate in the work of eco-clubs. The project also organized two eco-camps, in Tara and Tuzla for pupils that won the school competitions. In short, the indicator was fully achieved.

RESULT 5: Local and wider communities introduced with examples of good practice in primary waste selection in schools

Overall Finding: It is evident that the project was successful in creating visibility within schools. The project was promoted on partners' websites, Facebook pages, local TV stations and other media. Nevertheless, the final evaluation was not able to accurately assess the scale of visibility of the project action, achieved results and examples of good practice in primary waste selection in schools within local and wider communities.

Status of Indicator: **Indicator:** Project activities, results and goals introduced to local and wider communities through 6 TV reports and 1 spot broadcasted on local-regional media and through Opening and closing conference.

Findings: There is evidence that the project was promoted through TV reports, a short movie that was broadcasted on media, opening and closing conference events, which is in line with this indicator. However, although it was not part of the project design, it was necessary to promote project results to the wider community using other means as well.

SUSTAINABILITY²⁵

Sustainability is a long-term measure and the final evaluation can give only a prospect or assumption whether the achieved results will sustain in the future. Nevertheless, there is quite a strong evidence that the project created a modality that will enable sustainability of primary selection of solid waste in targeted schools. This was also confirmed in interviews with

²⁵ Sustainability is defined as the continuation of benefits from a project intervention after major external assistance has been completed. As per impact, sustainability can only be assessed after project intervention since it relates to whether the positive outcomes of the project at purpose level are likely to continue after external funds end.

representatives of Duboko and Komunalac, and with schoolmasters. Primary selection at the source is a very important topic for both PUC, and they are willing to continue collecting selected solid waste. Schools also expressed willingness to continue separating the school waste as long as PUCs are interested in emptying the bins. Biology teachers showed a strong commitment to support sustainability of the whole process, which is also an important variable.

Sustainability of purchased equipment, such as specialised vehicles or trash bins, is also high since those will be maintained or protected by beneficiary institutions. Through purchase of trash bins and establishing cooperation with public utility companies, the schools have been enabled to participate in other projects that are focusing on environmental protection and solid waste management.

There is a high sustainability prospect of teaching material and quiz manuals since their future use by eco-clubs was confirmed within the conversation with the Biology teachers. There is also evidence where those manuals were incorporated into curricula, which is a strong indicator of sustainability on this matter.

Sustainability of results within schools might be secured due to the fact that the Ministry of Education has started to grade performance of schools. Due to the participation in this project, schools from Užice were receiving high grades in segments related to ecology, which was very important for schoolmasters. In this regard it is expected that schools are interested not only in sustaining the primary selection of their waste yet to work on extension of this initiative.

IMPACT²⁶

Impact is a measure that assesses the achievement of overall objective and its indicator. The overall objective is defined in a way *to contribute to maintaining the high quality of the border area environment by cooperating in joint initiatives*. This objective is not properly formulated since from this statement it is not fully clear what the project intervention is trying to contribute at the impact level. To some extent it is clear that the project aims to solve environmental issues through joint initiatives, yet this was not enough for proper assessment of the achievement on this objective.

The impact indicator is also vague. It is formulated as: *total amount of waste disposal reduced for 5% on the Landfills until the end of 2015*. Similar to the outcome indicator, there is no baseline data that can enable us to measure progress on this indicator during and after the implementation. Besides, the indicator is very ambitious since this intervention is so minor to contribute to reduction of waste disposal at the landfills by 5%. At the end, there is an unclear

²⁶ Impact is defined as positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended. Formally, impact (and sustainability) can only be fully assessed after the end of the project since, as a development measure, it tries to give a judgment on the positive and negative, primary and secondary long-term effects produced by a development intervention, either directly or indirectly, intended or unintended. Therefore, impact measures the effect of the project in meeting the overall objective. A positive impact results if the project purpose is achieved, thereby contributing to the realization of the overall objective.

line between this indicator and the overall objective. In other words, this indicator cannot measure the overall objective.

Nevertheless, it is possible to discuss the project impact even beyond the structure of the overall objective and the associated indicator. In this case that would be a discussion on spin offs and externalities on final beneficiaries.

There is a body of evidence that project action has contributed to changes of behaviour among target groups and final beneficiaries. According to the statements of Biology teachers, pupils were bringing PET bottles and papers from their homes to the schools. There is also an example where retail shops close to the schools (in particular, close to the medical school in Užice) separate their waste and throw it in trash containers that are determined for primary selection. In Užice, the project drew attention of other institutions where the mechanisms for primary selection of solid waste were extended (i.e. extension to kindergarten "Poletarac", JTS, Dormitory "Petar Radovanović", Association of Invalids of Cerebral Palsy and Polio, Eco Hostel, Red Cross, etc.). The project outreach was also extended in Tuzla, additionally covering High School "Meša Selimović", international college, 11 kindergartens, apartment buildings in one of Tuzla's districts, etc. Nevertheless, the evaluation cannot give a robust answer how this behaviour will sustain in the future, and whether this behaviour will create significant impact on primary waste selection or not.

The project has already created spin offs in many segments, and ones in the field of cross-border cooperation are especially important to mention. For instance, two pupils that met during the project decided to create a joint project proposal that was submitted to USAID Office in BiH. Two secondary schools from Užice will participate at the Festival of Renewable Energy in Tuzla. There are also examples of sharing teaching methods between Biology teachers from Užice and Tuzla, as well as sharing best practices in peer-to-peer education methods.

As emphasised earlier, the project has created very good cooperation between project partners. This cooperation might contribute to joint actions in the future that might also create impact. For instance, there is a very good cooperation between schools and public utilities in both cities. As a part of that cooperation, Biology teachers bring pupils from eco-club to Duboko and Komunalac to see in practice how separation of the waste is organised. Several school directors have also visited premises of Duboko. In Tuzla, cooperation between Komunalac and CEE is enhanced and they already prepare project proposals for new initiatives. Prior to the project there was limited communication between Komunalac and schools in Tuzla, while this project has contributed to enhanced cooperation and mutual trust. By this cooperation Komunalac has increased their visibility as a company that take care of education and public interest in general. Cooperation between schools and CEE was always good and this project has deepened already good relationships.

It is clear that the project has impact on environmental protection since without this intervention the separated waste will end up unselected at the landfill. It is important to mention that Užice was affected by the natural disaster, when the drinking water was polluted and when millions of bottles were distributed to households, schools, other public institutions and citizens in general. This project provided a unique opportunity to separate those PET

bottles from other waste, which was certainly done within the schools, so the environment was protected at least to some extent.

It is also important to note that the project has contributed to increased visibility of all actors. Duboko and Komunalac increased visibility as responsible public enterprises that take initiative in solving important issues related to solid waste management and environmental protection. On the other hand, Opstanak and CEE increased their visibility as respectable organizations with expertise on ecology and environmental protection. For instance, Opstanak was very active in elaborating causes and consequences of the natural disaster with drinking water in Užice.

At the end, it is important to mention synergy between this project and the raising awareness initiative "Začepimo predrasude" that is organized by the Association of Invalids of Cerebral Palsy and Polio, which focuses on collecting caps from PET bottles. Students participating in this project were active in collecting caps, separating PET bottles in the trash bins and bringing caps to the Association. Although this action has a financial benefit since the Association is achieving its own sustainability by selling caps of PET bottles, the real value can be found on raising attention of local population on people with cerebral palsy and polio.

CONCLUSIONS AND RECOMMENDATIONS

According to the findings from primary and secondary sources the final evaluation can confirm success of project implementation, especially at the level of achieving targeted outputs and outcomes. The project was relevant to the legislative framework, to needs of the project area and to identified target groups. The project was designed in coordination with all project partners, which was very good ground for successful project implementation. Nevertheless, it is necessary to say that the project proposal was weakly designed in some important segments. Key shortcomings are in unclear design of the overall objective and its indicator, as well as in design of the outcome indicator (indicator assigned to the specific objective). Poor design of the overall objective and those indicators created a problem in evaluating the achievements of the intervention. The project proposal also lacks proper analysis of risks and assessments, which also affected the evaluation process. Nevertheless, by triangulating primary and secondary sources the evaluation team came to assessment results that can confirm success of the project action.

There is an impression that project will achieve better results in Užice if local public utility company Bioktoš were actively involved in project implementation. Bioktoš is in charge of solid waste management in Užice and this company has legal mechanisms for extending the project intervention beyond the schools. However, it is important to say that non-participation of Bioktoš in project implementation did not have any negative influence on achievement of the specific objective, expected results and their indicators.

The project is characterised by high efficiency in project operation. This success is achieved by appropriate project management, high level of trust among project partners and good division of labour. Communication between partners was also very good, which also contributed to successful implementation.

The project was also effective in its operations, achieving more than it was planned by the project proposal. The project has achieved its specific objective and all expected results. The system of solid waste selection was successfully created in all schools that participated in the intervention. Besides, the awareness of primary selection in schools was raised through the work of eco-clubs, quiz and eco-camps, as well as through presentations to janitors, cleaning staff and other teachers. Two public utility companies were also benefiting from the intervention by increasing their technical capacity through purchasing of specialised vehicles that were necessary for successful implementation of the project.

There is a high probability that project will be sustainable in most of its segments. When it comes to impact, the prognoses are weaker. Nevertheless, it is clear that the project created a good ground to extend the work on primary selection of solid waste outside of schools. Therefore, work on primary waste selection should be segmented to several stages, where the next intervention should focus on target groups where this process can be equally successful and the one within schools.

Based on findings, the final evaluation proposes the following recommendations:

- ☞ Design of the project proposal is very important for further stages of the cycle, including project implementation, monitoring and implementation. Therefore, when designing the project structure, it is important to make comprehensive objectives and measurable indicators, otherwise it will be very difficult to measure the project achievement at any level (output, outcome or impact).
- ☞ The project partners should continue working on promotion of best practices created through this intervention, trying to create a broad consensus on importance of primary selection of solid waste. In that regard, the project partners should advocate local authorities to pay more attention to issues related to the solid waste management.
- ☞ On a short-run, the project partners should aim to extent to all public institutions, large enterprises and service industry (i.e. banks, retail shops, hotels, etc.) since it should not be difficult to organize the process of primary selection within these actors.
- ☞ The project partners should continue working on environmental issues with cross-border partners, either the ones from this project or others, since there are multiple benefits in exchanging knowledge, skills, ideas or best practices.

ANNEXES

ANNEX 1: List of Interviewed People

Name	Function	Institution	Locality
Radojevic Milos	Project manager	RDA "Zlatibor"	Užice
Krvavac Ljubinka	Project team member	Association "Opstanak"	Užice
Zarić Milica	Teacher	Secondary school of Uzice	Užice
Rogic Mileva	Teacher	Primary school "Slobodan Sekulic"	Užice
Ostojic Gordana	Teacher	Technical school	Užice
Jovovic Biljana	Teacher	Primary school "Nada Matic"	Užice
Milosevic Aleksandra	Teacher	School of music "V. L. Stefanovic"	Užice
Sekulic Dragica	Teacher	Primary school "M. Milovanovic"	Užice
Prtenjak Ana	Teacher	Art school	Užice
Djuričić Ana	Teacher	Technical school	Užice
Mitrasinovic Mirjana	Teacher	Medical school	Užice
Bogicevic Desa	Teacher	Primary school "Dusan Jerkovic"	Užice
Risticovic Dusica	Teacher	Secondary school of economics Uzice	Užice
Zekavičić Verica	Teacher	Primary school "Kralja Petra II"	Užice
Milosavljevic Nedeljko	Director	PUC "Duboko"	Užice
Todorovic Nadezda	Financial director	PUC "Duboko"	Užice
Nikolic Branko	Project team member	PUC "Duboko"	Užice
Djokic Ivan	Project team member	PUC "Duboko"	Užice
Jelisavcic Rafajlo	Director	Primary school "Slobodan Sekulic"	Užice
Bakic Predrag	President	Association of cerebral palsy	Užice

Dizdarević Edin	Project Coordinator	PUC Komunalac	Tuzla
Bajić Mirza	Account Manager	PUC Komunalac	Tuzla
Baraković Mersed	Office Manager	PUC Komunalac	Tuzla
Agic Dzemila	Director	Centre for ecology and energy	Tuzla
Suhonjic Aida	Teacher	Primary school “Brcanska Malta”	Tuzla
Osmic Eldina	Teacher	Primary school “Mejdan“	Tuzla
Josipović Pera	Teacher	Secondary school “Sveti Franjo”	Tuzla
Begovic Mirsada	Teacher	Secondary school “Ismet Mujezinovic”	Tuzla
Becirovic Ramiza	Teacher	Secondary school of chemistry	Tuzla
Jakupović Nihada	Teacher	Secondary school of chemistry	Tuzla
Curo Aida	Teacher	Secondary mechanical school	Tuzla
Karahodzic Amela	Teacher	Secondary school for construction and geodetics	Tuzla
Brigic Edin	Teacher	Behram-begova madrasa	Tuzla
Huric Senada	Teacher	Primary school “Pazar”	Tuzla
Zigic Alma	Teacher	Primary school “Miladije”	Tuzla
Pezic Senada	Teacher	Primary school “Kreka”	Tuzla
Hadzic Amir	Teacher	Secondary school of electrical engineering	Tuzla

ANNEX 2: List of Documents Reviewed

Project proposal:

The application form

Project Budget

Logical framework

Project Documentation:

1st report of the Commission for locating trash bins within schools in Užice

2nd report of the Commission for locating trash bins within schools in Užice

Promotion Plan of Primary Waste Selection in Schools of Užice and Tuzla

Guidelines for Eco-clubs in Primary Schools

Guidelines for Eco-clubs in Secondary Schools

Internal Documentation:

Education:

Report on Eco-Camp in Tara

Report on Eco-Camp in Tuzla;

Report on Eco-Quiz in 7 Primary Schools from Užice;

Report on Eco-Quiz in 7 Secondary Schools from Užice;

Report on Info-Sessions in 14 Schools from Užice;

Report on Training for Eco-Club Teachers from Primary and Secondary Schools;

Report on Training for Cleaning Staff and Janitors in 14 Schools from Užice;

Report on Training for Employees in PUC Duboko;

Internal Monitoring Report:

1st Monitoring Report;

2nd Monitoring Report;

Užice Monthly Reports Report for all 15 months of project duration;

Reports on collected waste in Užice and Tuzla.

Project Reports to the Delegation:

Interim Report

Progress Report

Monitoring Reports (external):

1st Monitoring Report

2nd Monitoring Report

Legal Framework in Serbia

Law on Environmental Protection

Law on Waste Management

Law on Communal Affairs

Strategy on Waste Management 2010-2019

Regional Plan for Waste Management, adopted by the City of Užice

Local Plan for Waste Management, adopted by the City of Užice

Bylaw of Communal Arrangements, adopted by the City of Užice

Legal Framework in Bosnia and Herzegovina

Law on Environmental Protection of the Federation BiH

Law on Waste Management of the Federation BiH

Strategy for Waste Management of the Federation BiH 2008-2018

Federal Plan for Waste Management 2012-2017

Law on Environmental Protection of the Tuzla Canton

Law on Communal Affairs of the Tuzla Canton

Interventions for Improvement of the Current Waste Management System in the North East Bosnia and Herzegovina, The Study on Waste Management in SI BiH, Adnan Hadžiefendić, Tuzla 2010.

Report on Monitoring of the Work of the Government of Tuzla Canton 01.01.-31.12.2013, Centri civilnih inicijativa CCI, Tuzla, 2013.

ANNEX 3: Review of Collected Recyclable Solid Waste in Užice

PUC Duboko Užice		2013						2014				Total
#	School	May/June	August	September	October	November	December	January	February	March	April	
1	Tehnička škola	0	0	0	0	0	340	260	300	180	200	1,280
2	Muzička škola "Vojislav Lale Stefanović"	0	0	0	40	20	10	20	30	10	0	130
3	Ekonomska škola	0	520	0	175	155	120	100	230	255	130	1,685
4	Užička gimnazija	29	62	0	175	205	140	80	230	255	130	1,306
5	Tehnička škola "Radoje Ljubičić"	0	0	0	0	0	200	200	0	300	180	880
6	OŠ "Dušan Jerković"	0	0	0	100	0	260	220	200	160	220	1,160
7	OŠ "Nada Matić"	0	0	0	200	160	1,520	420	220	340	100	2,960
8	Prva osnovna škola "Kralj Petar II" + Udruženje invalida dečje i cerebralne paralize	0	0	0	120	0	160	0	240	80	200	800
9	OŠ "Aleksa Dejović" Sevojno	10	0	0	0	200	0	0	180	0	0	390
10	OŠ "Slobodan Sekulić" Krčagovo	0	0	0	190	160	160	140	180	160	200	1,190
11	Umetnička škola + Crveni krst	0	0	0	0	0	100	0	0	120	60	280
12	OŠ "Stari grad"	0	0	0	0	160	110	0	60	140	0	470
13	Medicinska škola	0	0	180	1,640	1,220	1,420	1,160	1,460	1,390	1,860	10,330
14	OŠ "Miodrag Milovanović - Lune" Karan	0	0	0	0	0	60	0	0	0	0	60
15	Dom učenika srednjih škola Užice	0	0	0	0	0	0	60	100	300	180	640
16	Dečji vrtić "Poletarac" + Dom "Petar Radovanović" + JTS + Eco Hostel	0	0	0	0	0	0	0	0	0	0	0
17	Otpad prikupljen traktorom iz svih škola	480	380	520	0	0	0	0	0	0	0	1,380
	Total (kg)	519	962	700	2,640	2,280	4,600	2,660	3,430	3,690	3,460	24,941

Source: PUC Duboko Užice

ANNEX 4: Review of Collected Recyclable Solid Waste in Tuzla

Review of Collected Recyclable Solid Waste in Primary and Secondary Schools in Tuzla
in 2013 (Source: PUC Komunalac, Tuzla)

R.B.	DATUM PREUZIMANJA	UKUPNO PREUZETA MASA RECIKLATA (kg)	UKUPNA ZAPREMINA RECIKLATA (m ³) 8,65m ³ =150kg	PET AMBALAŽA	PAPIRNA AMBALAŽA	ALUMINIJSKE LIMENKE	UKUPNO UŠTEDENOG PROSTORA DEPONOVANJA (m ³)
				ZAPREMINSKI UDIO 74% (m ³)	ZAPREMINSKI UDIO 25% (m ³)	ZAPREMINSKI UDIO 1% (m ³)	
1	28.05.13.	200,00	11,53	8,53	2,88	0,12	11,53
2	04.06.13.	360,00	20,76	15,36	5,19	0,21	20,76
3	05.06.13.	220,00	12,69	9,39	3,17	0,13	12,69
4	06.06.13.	180,00	10,38	7,68	2,60	0,10	10,38
5	07.06.13.	200,00	11,53	8,53	2,88	0,12	11,53
6	14.06.13.	480,00	27,68	20,48	6,92	0,28	27,68
7	29.08.13.	900,00	51,90	38,41	12,98	0,52	51,90
8	12.09.13.	760,00	43,83	32,43	10,96	0,44	43,83
9	17.09.13.	240,00	13,84	10,24	3,46	0,14	13,84
10	20.09.13.	280,00	16,15	11,95	4,04	0,16	16,15
11	24.09.13.	220,00	12,69	9,39	3,17	0,13	12,69
12	27.09.13.	180,00	10,38	7,68	2,60	0,10	10,38
13	01.10.13.	300,00	17,30	12,80	4,33	0,17	17,30
14	04.10.13.	120,00	6,92	5,12	1,73	0,07	6,92
15	08.10.13.	160,00	9,23	6,83	2,31	0,09	9,23
16	11.10.13.	240,00	13,84	10,24	3,46	0,14	13,84
17	18.10.13.	240,00	13,84	10,24	3,46	0,14	13,84
18	22.10.13.	160,00	9,23	6,83	2,31	0,09	9,23
19	25.10.13.	160,00	9,23	6,83	2,31	0,09	9,23
20	29.10.13.	160,00	9,23	6,83	2,31	0,09	9,23
21	01.11.13.	160,00	9,23	6,83	2,31	0,09	9,23
22	05.11.13.	180,00	10,38	7,68	2,60	0,10	10,38
23	08.11.13.	160,00	9,23	6,83	2,31	0,09	9,23
24	12.11.13.	120,00	6,92	5,12	1,73	0,07	6,92
25	15.11.13.	140,00	8,07	5,97	2,02	0,08	8,07
26	19.11.13.	440,00	25,37	18,78	6,34	0,25	25,37
27	22.11.13.	340,00	19,61	14,51	4,90	0,20	19,61
28	29.11.13.	380,00	21,91	16,22	5,48	0,22	21,91
29	03.12.13.	140,00	8,07	5,97	2,02	0,08	8,07
30	06.12.13.	400,00	23,07	17,07	5,77	0,23	23,07
31	10.12.13.	220,00	12,69	9,39	3,17	0,13	12,69
32	13.12.13.	120,00	6,92	5,12	1,73	0,07	6,92
33	17.12.13.	280,00	16,15	11,95	4,04	0,16	16,15
34	20.12.13.	120,00	6,92	5,12	1,73	0,07	6,92
35	24.12.13.	160,00	9,23	6,83	2,31	0,09	9,23
36	27.12.13.	220,00	12,69	9,39	3,17	0,13	12,69
37	31.12.13.	120,00	6,92	5,12	1,73	0,07	6,92
TOTAL 2013		9.460,00	545,53	403,69	136,38	5,46	545,53

Note: Through the analysis and test weighing of several samples, the medium weight of trucks full of cargo space ($V = 8.65 \text{ m}^3$) of 150 kg was adopted, which was used in further analysis of the volume of certain types of taken recyclates.

Review of Collected Recyclable Solid Waste in Primary and Secondary Schools in Tuzla
in 2014 (Source: PUC Komunalac, Tuzla)

R.B.	DATUM PREUZIMANJA	UKUPNO PREUZETA MASA RECIKLATA (kg)	UKUPNA ZAPREMINA RECIKLATA (m ³) 8,65m ³ =150kg	PET AMBALAŽA		ALUMINIJSKE LIMENKE		UKUPNO UŠTEĐENOG PROSTORA DEPONOVANJA (m ³)
				ZAPREMINSKI UDIO 74% (m ³)	PAPIRNA AMBALAŽA ZAPREMINSKI UDIO 25% (m ³)	ZAPREMINSKI UDIO 1% (m ³)		
TOTAL 2013		9460,00	545,53	403,69	136,38	5,46	545,53	
2	15.01.14.	160,00	9,23	6,83	2,31	0,09	9,23	
3	28.01.14.	420,00	24,22	17,92	6,06	0,24	24,22	
4	31.01.14.	160,00	9,23	6,83	2,31	0,09	9,23	
5	04.02.14.	120,00	6,92	5,12	1,73	0,07	6,92	
6	14.02.14.	160,00	9,23	6,83	2,31	0,09	9,23	
7	14.02.14.	300,00	17,30	12,80	4,33	0,17	17,30	
8	18.02.14.	100,00	5,77	4,27	1,44	0,06	5,77	
9	21.02.14.	180,00	10,38	7,68	2,60	0,10	10,38	
10	25.02.14.	120,00	6,92	5,12	1,73	0,07	6,92	
11	28.02.14.	200,00	11,53	8,53	2,88	0,12	11,53	
12	04.03.14.	160,00	9,23	6,83	2,31	0,09	9,23	
13	05.03.14.	380,00	21,91	16,22	5,48	0,22	21,91	
14	07.03.14.	180,00	10,38	7,68	2,60	0,10	10,38	
15	11.03.14.	140,00	8,07	5,97	2,02	0,08	8,07	
16	14.03.14.	100,00	5,77	4,27	1,44	0,06	5,77	
17	18.03.14.	160,00	9,23	6,83	2,31	0,09	9,23	
18	21.03.14.	360,00	20,76	15,36	5,19	0,21	20,76	
19	25.03.14.	160,00	9,23	6,83	2,31	0,09	9,23	
20	28.03.14.	180,00	10,38	7,68	2,60	0,10	10,38	
21	01.04.14.	140,00	8,07	5,97	2,02	0,08	8,07	
22	04.04.14.	200,00	11,53	8,53	2,88	0,12	11,53	
23	08.04.14.	120,00	6,92	5,12	1,73	0,07	6,92	
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
TOTAL 2014		4.200,00	242,20	179,23	60,55	2,42	242,20	
TOTAL 2013+2014		13.660,00	787,73	582,92	196,93	7,88	787,73	

Note: Through the analysis and test weighing of several samples, the medium weight of trucks full of cargo space ($V = 8.65 \text{ m}^3$) of 150 kg was adopted, which was used in further analysis of the volume of certain types of taken recyclates.

ANNEX 5: Terms of Reference

BACKGROUND INFORMATION

Beneficiary country:

Serbia

Contracting Authority

PUC Duboko

Duboko bb

31000 Uzice

Relevant country background

Not applicable

Current state of affairs in the relevant sector

Not applicable

Related programmes and other donor activities:

Not applicable

OBJECTIVE, PURPOSE & EXPECTED RESULTS

Overall objective

The overall objective of the project of which this contract will be a part is as follows:

To contribute to maintaining the high quality of the border area environment by cooperating in joint initiatives. Project activities contribute to environment protection, decreasing amount of disposed waste through implementation primary selection waste concept in schools and their premises.

Purpose

The purpose of this contract is to subcontract the **Project Evaluator** who will do evaluation of project School Waste Less. The evaluation aims at making an overall independent assessment about the performance of the project at both sides of the border and the level of achievement of its objectives against given indicators, as well as at providing recommendations to be taken into account for the future implementation of similar projects.

Results to be achieved by the Consultant

Evaluation report on English - approximately 12 pages, including the Annexes. It should be structured as follows:

- Introduction
- Relevance of the project (as designed to the needs of the target areas)
- Efficiency (management and value for money)

- Effectiveness (achievement of intended outputs)
- Impact (achievement of wider effects on beneficiaries and the target areas)
- Sustainability (likely future continuation of the stream of benefits)
- Cross-border dimension
- Conclusions and Recommendations

Note: the Report should emphasize evaluation of the first year of the Project in relation to the overall Project.

ASSUMPTIONS & RISKS

Assumptions underlying the project intervention

Not applicable

Risks

Not applicable

SCOPE OF THE WORK

General

Project description

Creating infrastructural and technical requirements for primary waste selection in schools provides technical framework for the project purpose. Setting up plastic bins for 4 most generated waste fractions in schools: PET packaging, aluminum cans, paper and mixed waste provides proper separate waste collecting. Purchasing and setting up containers in front of schools in Uzice provides possibility of collecting full bags of waste from bins until PUC's trucks come to transport them to the landfill. This container exists in Tuzla.

Procurement of 2 specialized vehicles provides transportation of selected waste on most convenient and most economically way. These vehicles are specific and two Public Utility Companies do not have them. It is also necessary to increase human capacities in 2 Public Utility Companies, through organization of presentations for employees who are working in collecting, transportation and secondary waste selection in Uzice and Tuzla.

For appropriate realization of project activities it is necessary to prepare school staff for primary selection process: teachers who provide support for their pupils and cleaning and support staff who clean school premises and backyards. Different education formats were conducted for each group of participants. First education was conducted for cleaning staff and contains basic level information about this process. Second education was conducted for teachers about communication of environmental topics, because previous experience shows insufficient results in work with pupils. Pupils were introduced with knowledge from this area and encourage applying it. Design and printed leaflet on this subject were distributed to 20.000 pupils in 28 schools and provides the widest dissemination level. Besides that pupils

were participate in group informing sessions which were conducted in every school covered by project activities. Another, more specific level of educating pupils was provided by biology teachers during ecological section. Next level of knowledge dissemination was achieved through participation of the most motivated pupils in quizzes. The best of them were take part in joint ecological camps on mountain Tara in Serbia and on hill Ormanica in Bosnia and Herzegovina. The project was promoted on local and regional level through Opening & Closing conferences and media broadcasting during 15 month of it implementation.

Geographical area to be covered

City of Uzice in Serbia and Tuzla Municipality in Bosnia and Herzegovina.

Target groups

Pupils, teachers and cleaning-support staff of 28 primary and high schools in Uzice and Tuzla, employees of two Public utility companies from Uzice and Tuzla engaged in process of transport and secondary waste separation.

Specific activities

The assignment has to be carried out over a period of 04.04.2014. until 18.04.2014.

- review of key project documentation
- visit to the target area and project deliverables
- interviews with relevant stakeholders
- summary of collected information, conclusions and recommendations

Project management

Responsible body

The Consultant is responsible for all the activities regarding this contract.

Management structure

The Project evaluator will be responsible for organizing his/her own activities for the achievement of the project objectives.

Facilities to be provided by the Contracting Authority and/or other parties

N/A

LOGISTICS AND TIMING

Location

City of Uzice in Serbia and Tuzla Municipality in Bosnia and Herzegovina.

Commencement date & Period of execution

The intended commencement date is 04.04.2014. and the period of execution of the contract will be 14 days from this date. Please refer to Articles 4 and 5 of the Special Conditions for the actual commencement date and period of execution.

REQUIREMENTS

Personnel

Key experts

The contractor will ensure sufficient number of qualified staff for quality and timely implementation of tasks planned by these Terms of References. Among the necessary staff, one expert will be considered as key expert and therefore his/her CV will be submitted with the application.

Key experts 1

Qualifications and skills

- Bachelor of social sciences

General professional experience

- Minimum 5 years of experience in project management

Specific professional experience

- Experience in implementation of EU funded projects
- Experience in implementation of similar activities related to assessment of effects of the projects
- At least 3 evaluations conducted
- Experience in field research
- Experience in developing survey questionnaires related to assessment and conducting interviews
- Proficiency in standard MS Office applications
- Excellent presentation and communication skills in English, both oral and written
- Strong analytical and report writing skills

Facilities to be provided by the Consultant

The Consultant shall ensure any other facilities, including the transportation means, necessary for quality and timely implementation of the tasks described in these Terms of Reference.

Equipment

No equipment is to be purchased on behalf of the Contracting Authority from this contract.

The contractor will provide all the equipment necessary for timely and quality implementation of the tasks described in these Terms of Reference.

REPORTS

Reporting requirements

The contractor will prepare the final report – evaluation report, at the end of this contract. The approval of the final report by the Contracting Authority will be the basis for issuing the final payment as indicated in the Special Conditions.

MONITORING AND EVALUATION

Definition of indicators

The indicator of the successful implementation of the contract is “Services provided in timely, quality and quantity manor, as required in these Terms of Reference”.