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Eco-Schools: A project-based grant proposal to implement an environmental awareness program among primary school-aged children in Sarajevo, Bosnia and Herzegovina.

By

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Degree to be awarded: MPH

Prevention Science

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Eco-Schools: A project-based grant proposal to implement an environmental awareness program among primary school-aged children in Sarajevo, Bosnia and Herzegovina.

By

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An abstract of  
A thesis submitted to the Faculty of the  
Rollins School of Public Health of Emory University  
in partial fulfillment of the requirements for the degree of  
Master of Public Health  
In Prevention Science  
2019

## Abstract

Eco-Schools: A project-based grant proposal to implement an environmental awareness program among primary school-aged children in Sarajevo, Bosnia and Herzegovina.

By

Rijalda Deovic

Primary school children in Sarajevo are exposed to unsafe levels of polluted air every day. School closures in the winter time due to high levels of polluted air have become status quo. There is a lack of knowledge regarding health outcomes related to exposure to air pollution; this can alter a child's trajectory through life, leading them onto a path of illness and misery. Environmental awareness and behavioral changes starting at an early age can significantly reduce and prevent the tremendous burden of disease in children caused by exposure to air pollution, thus reducing the burden of disease into adulthood. Children breathe twice as much air as adults because they have a higher frequency of breathing. Almost 50% of deaths reported among children who are under five years of age are caused by failing lung capacity attributed to breathing in polluted air. It is essential to recognize that all humans, animals, and plants are at danger due to air pollution, but those most affected by this public health issue are children.

The proposed educational awareness program entitled "Eco-Schools" aims to increase knowledge and awareness regarding air pollution effects on child health by focusing on encouraging and inspiring young people to engage in their environment and teach them how to protect it. The primary goals of the Eco-Schools program are to combine education, awareness, and actions that move from the classroom into the community and beyond. Doing so will help inspire the children in the program to take charge of their health, make positive behavioral changes, and be advocates for their health and the health outcomes of future generations.

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I want to thank my committee members for their expertise, support, and guidance in completing this thesis. This would not have been possible without them.

Growing up during the war in Bosnia, I remember days when we did not have food or electricity or hope for a better tomorrow. It has always been instilled in me that education is imperative, and that it's something nobody can ever take away from you. Now I am here, a first-generation refugee, the first one in my family to have a master's degree.

I am grateful that I was one of the lucky ones who was able to pursue the American dream.

I want to say thank you to those who have supported me for all your love, motivation, and endless belief in me, even on days when I didn't believe in myself.

After everything I've been through, the universe has brought good people into my life "who had the valor and the daring to cut the pieces of their soul and weave them into a blanket to protect me" (Hafiz, 14th century Persian Poet).

Most importantly, I wish to thank my daughter Zerina, who provides endless inspiration.

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## CHAPTER I- INTRODUCTION

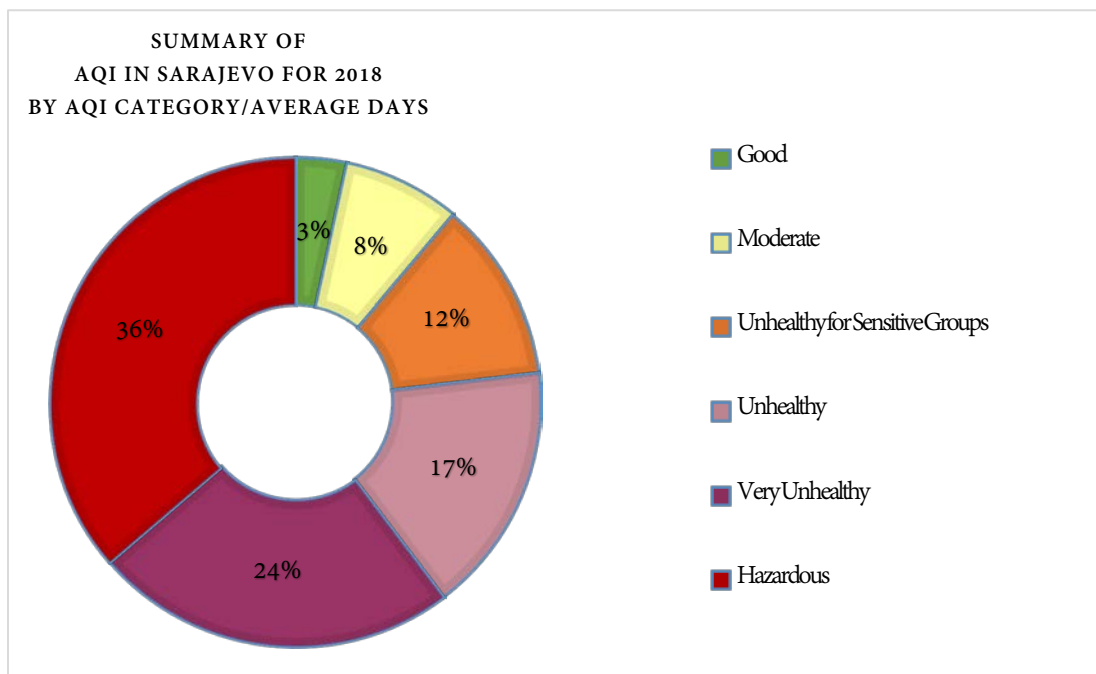
### Introduction and rationale

Breathing in polluted air in Sarajevo, the capital city of Bosnia and Herzegovina has become the norm in the last two decades. Factors such as heavy traffic, poor spatial planning, and the solid fuel based heating are the most substantial contributors to the poor air quality in Sarajevo (UNE, 2018). However, the missing link to addressing this alarming public health issue is the lack of awareness and education that would encourage positive behavioral changes and push for action by those who live in Sarajevo. This inadequacy negatively contributes to the numbers of non-communicable diseases in Bosnia and Herzegovina which is of cardiometabolic origin, known to be exacerbated by outdoor air pollution.

Generally speaking, the children are the most adversely affected when it comes to air pollution. Children breathe twice as much air than adults due to the higher frequency of breathing (WHO, 2018). Almost 50% of deaths reported worldwide among children who are under five years of age are caused by failing lung capacity attributed to breathing in polluted air (WHO, 2018). It is important to recognize that all humans, animals, and plants are at danger due to air pollution, but the most sensitive to this public health issue are children. Children have their whole lives ahead of them, and there is an urgent need to address air pollution and the development of illnesses contributing to cardiometabolic diseases. They are especially vulnerable to the adverse effects of air pollution and a vitally important to be a part of the solution when it comes to implementation of early interventions that can target the public health issue early on. There are a number of air quality monitoring stations available in Sarajevo which measure the daily PM 2.5 counts in the city. One of these is located at the U.S. Embassy and data collected is available for review for the public on the U.S. Environmental Protection Agency (EPA) Air Now website. The

graph below shows the daily average of AQI in Sarajevo for 2018. The AQI categories and meanings are also shown here for reference.

Graph 1- EPA Summary of Daily AQI in Sarajevo based on PM2.5 concentration for 2018



[Source](#)

<b>Air Quality Index Levels of Health Concern</b>	<b>Numerical Value</b>	<b>Meaning</b>
<b>Good</b>	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
<b>Moderate</b>	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
<b>Unhealthy for Sensitive Groups</b>	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
<b>Unhealthy</b>	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
<b>Very Unhealthy</b>	201 to 300	Health warnings of emergency conditions. The entire population is more likely to be affected.
<b>Hazardous</b>	301 to 500	Health alert: everyone may experience more serious health effects.

Table 1- EPA AQI Categories and Meaning

[Source](#)

## Problem Statement

Evidence shows that current lack of education and awareness of air pollution effects in Sarajevo, negatively contribute to the health status of the children who call this city their home. The levels of ambient air pollution levels in Sarajevo often exceed WHO limits, resulting in school closures, increased risks for respiratory infections during childhood and may also contribute and induce developments of chronic cardiometabolic diseases in adulthood.

## Theoretical Framework

The theoretical framework chosen as most appropriate to guide this grant proposal intervention is the social-ecological model theory due to the complex relationships and interactions a child faces daily. The social-ecological model (SEM) is also a helpful visual aid that can display the interactions between intrapersonal, interpersonal, institutional, community and policy factors that are interconnected and influence the physical and psychosocial development of a child (CDC, 2019). Please see **Figure 1** for an overview of each level described below.

**Intrapersonal (Individual)** - At this level, the determinants of behavior are identified as they relate to defining a child's behavior and biological factors that increase the incidence and prevalence of cardiometabolic diseases as they are exacerbated by air pollution. The overall goal is to promote changes in attitude and beliefs which will improve the knowledge that will promote positive behavior changes of the child's resulting in higher literacy and health improvement within the population.

**Interpersonal** – This level is defined as it examines the close relationships that can influence and increase the health literacy within the population (CDC, 2019). By changing the belief at the individual level targeting the children, those closest to them such as parents, teachers, friends, can also be affected as they can witness the child’s behavior change. This level is fundamental as it may be difficult to break away from social and cultural norms and beliefs deeply rooted within a population.

**Community** - The community level explores settings, such as schools and neighborhoods, in which social relationships occur and seeks to identify characteristics of the community that are associated with health literacy and air pollution control. This level promotes and empowers families, schools, and neighborhoods to be safe and healthy. The community level works closely with the Institutional level to achieve the goal of public health promotion (CDC, 2019).

**Institutional** - The institutional level examines the roles that organizations and agencies play in prevention strategies. Entities that belong in this level include school districts, local health departments, health care systems, local physician groups, and any appropriate organization that represent a potential resource or can work in a partnership with any of the mentioned entities (CDC, 2019).

**Policy** – Activities within the policy level involve actions and efforts by all the before mentioned levels which are then used to interpret and implement changes to public policies and laws working in conjunction with the available resources which will be used to support air pollution prevention efforts and work toward the reduction of mortality rates related to cardiometabolic diseases. In this level, a

significant focus is placed on the federal and state government agencies which are needed to promote health literacy and healthy behavior changes (CDC, 2019).

### Purpose Statement

The purpose of this grant is to implement an early public health intervention program targeting primary school children that will raise awareness regarding the harmful effects outdoor air pollution has on their health. Closing the gap for primary school children by educating them regarding the effects air pollution has on their health will not only benefit them but will also enable them to make positive changes within their community and beyond. Implementation and development of this intervention will promote community behavior change by students attending the three identified primary schools in downtown Sarajevo:

1. OŠ "Silvije Strahimir Kranjčević"
2. OŠ "Safvet beg Bašagić."
3. OŠ "Edhem Mulabdić"

\* OŠ= Osnovna Škola (Primary School)

A school-based program focused on engaging the youth of today to positively contribute to their health and protect the environment. This approach will provide an effective pathway to combat two very concerning public health issues in Bosnia and Herzegovina at the same time: air pollution and burden of disease related to cardiometabolic diseases.

### Objectives to be addressed by the grant proposal

The primary objective of this grant proposal is to implement a pilot program, Eco-Schools, which will provide environmental awareness by educating the children on air pollution and the adverse

effects it has on their health. It will also aim to encourage participation and activism among primary school children. The goal is to provide a clearer understanding of mutual dependencies that exist between air pollution and human health. This program will help the children understand the impact their actions and behaviors have on their environment, health and their future. By improving knowledge within the younger population, identified objective focuses on improving the overall health of the population of Bosnia and Herzegovina. Children who are exposed to air pollution at an early age have a higher risk of experiencing adverse health effects as they grow up and into adulthood. Air pollution can have serious health implications to the developing lungs of children, making them more susceptible to ALRI (Acute Lower Respiratory Infections) which include pneumonia, asthma and childhood cancers (WHO, 2018). Promoting environmentally positive behavioral changes implemented by the program will result in action-orientated and socially responsible learning that will have a positive impact on the individual, environment and the community.

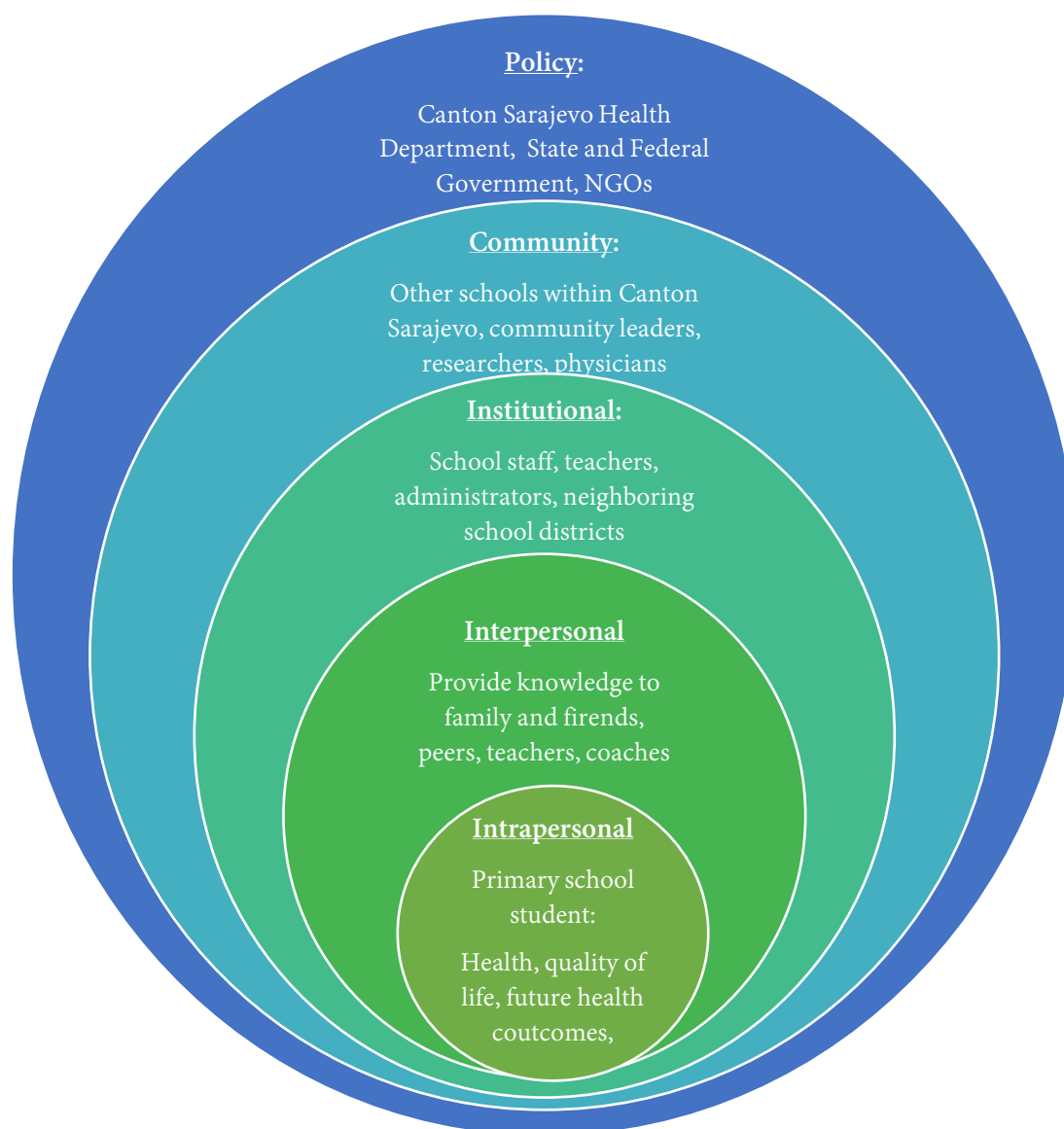
### Significance Statement

Early educational intervention programs can help increase awareness and provide individuals with the increased confidence in managing behaviors and providing them with the skills needed to take control of their health and make positive changes in their community. By conducting projects such as the proposed grant program, improvement to the public health of all citizens within Bosnia and Herzegovina will be possible. Actions influenced by Eco-Schools implementation can yield positive health benefits the children can carry through to adulthood, and by improving the environment the children live in will result in reduction of air pollution and consequently their exposure to these harmful particles

(WHO,2018). Eco-Schools will be the first step that will contribute to the overall goal of improving the health literacy and public health of all who call Sarajevo home.

Figure 1. The Social Ecological Model

Source: Adapted from the Centers for Disease Control and Prevention (CDC), The Social Ecological Model: A Framework for Prevention, <http://www.cdc.gov/violenceprevention/overview/social-ecologicalmodel.html>





## Definition of Terms

AHA -American Heart Association

ALRI- Acute Lower Respiratory Infections

AQI- Air Quality Index

µg/m<sup>3</sup>- Microgram(s) per cubic meter

BiH -Bosnia and Herzegovina

CS- Canton Sarajevo

EPA- U.S. Environmental Protection Agency

EU -European Union

FBiH- Federation of Bosnia and Herzegovina

FEE -The Foundation for Environmental Education

IHME -Institute for Health Metrics and Evaluation

NO<sub>x</sub>- Nitrogen oxides

OŠ-Osnovna Škola (Primary School)

PM<sub>2.5</sub> -Atmospheric particulate matter with a diameter of 2,5 µm or less

RS- Republic of Srpska

SDGs -United Nations Sustainable Development Goals

SEM -Social Ecological Model

SO<sub>2</sub> -Sulphur dioxide

UN -United Nations

WHO- World Health Organization

## CHAPTER II- LITERATURE REVIEW

### Introduction

We as humans are exposed to particulate matter levels daily. How we respond to air pollution and how it impacts our health is another story. Whether there are preventative measures taken by healthcare professionals, governmental and non-governmental agencies and other implemented infrastructures vary. This section will focus mainly on providing background information on effects air pollution has on child health and association of air pollution and cardiometabolic diseases in Bosnia and Herzegovina.

### Literature Review Strategy

This literature review mainly focused on published literature and research articles in peer-reviewed scientific journals in English and Bosnian. The following search terms were used in order to narrow down the search and identify most appropriate literature , <air pollution>, <children health>, <Bosnia> , <Sarajevo>, <cardio-metabolic diseases>, <PM 2.5>, <cardiovascular health>, <health literacy>in order to identify existing articles and studies that support the causal relationship between air pollution and cardiometabolic diseases. Another aspect of this review will be included will discuss children's vulnerability to air pollution and health outcomes. The articles identified span back to the beginning of the 2000s, and the most current peer-reviewed articles were identified and retrieved from Academic Search Complete and Google Scholar research databases.

### Relevant studies Regarding Air Pollution Effects on Children Health

**Schwartz, J. (2004)**

**Air Pollution and Children's Health. *Pediatrics*, 113(Supplement 3), 1037-1043.**

Schwartz argues that due to the growing and developing an immune system, as well as lung capacity in children, the health effects of air pollution are significant to consider as development as they develop into adulthood. The vast majority of health complications that can arise due to exposure of children with unhealthy levels of air quality can exacerbate minor acute illnesses, such as asthma, which can cause many other complications as the child continues to develop into adulthood. There have been many studies in the last few decades that bring to light the indicated risks air pollution poses to children's health and why they are more susceptible to these severe public health problem. This section of the literature review will present the published work that explains the dangerous adverse effects air pollution has on a child and the effect it has on a child's healthy and productive future. At the time this article was written air pollution was not considered to be the leading cause of morbidity in children in the developed world (Schwartz, 2004).

**Gauderman et al. (2004)**

**The Effect of Air Pollution on Lung Development from 10 to 18 Years of Age**

The relationship between exposure of air pollution and adverse effects on the growth of lung function occurs between ages 10-18 years of age and this specific period was selected because it represents the time a child goes through a rapid lung development. The authors reviewed 12 schools in Southern California recruiting 1,759 children with an average age of 10 and followed them on a longitudinal study until the participants became 18 years old. The schools selected to participate in this study, according to the authors, represented an accurate representation and wide range of ambient exposure to ozone, acid vapor, nitrogen oxide, and particulate matter.

Using spirometric measures, the authors concluded that over the eight years the effects of air pollution had chronic, adverse effects on lung development of children, showing clinically significant deficits in measured forced expiratory volume (FEV1) as the children reach adulthood. The authors also noted that there was no significant difference between boys and girls in the study and continued to play a significant part among the children who had no history of asthma or exposure to cigarette smoke. The noted findings by the authors furthermore confirmed that children are most susceptible to chronic respiratory effects of breathing in polluted air.

**Clark, et al. (2012)**

**Does Traffic-related Air Pollution Explain Associations of Aircraft and Road Traffic Noise Exposure on Children's Health and Cognition? A Secondary Analysis of the United Kingdom Sample From the RANCH Project**

This study examined the correlation between air pollution at school and the association this presented when examining child cognition and health. The first aim of this study was to truly understand and examine the correlations between aircraft noise exposure and road traffic noise exposure at school. (Clark, 2010). The authors combined data observing an association between aircraft and road traffic noise with measurements of air pollution present. From 2001-2003, the Road Traffic and Aircraft Noise Exposure and Children's Cognition and Health (RANCH) project, examined 719 children between the ages from 9-10 years of age from 22 different schools outside of London's Heathrow airport.

There are multiple sociodemographic background variables identified for this study that addressed exposure data, cognitive outcomes, health outcomes, and thorough sociodemographic factors to help better understand the population the study was analyzing. The study showed that once air pollution was taken into consideration in addition to the noise exposure, the data demonstrated an

association between environmental noise and the impact on children's cognition, addressing instances of poor memory, reading comprehension and information recall (Clark et al. 2012).

**Bilenko et al. (2015)**

**Associations between particulate matter composition and childhood blood pressure- The PIAMA study**

The association between blood pressure in childhood associated with exposure to particulate matter was examined in this study. The authors enrolled pregnant women between the period of 1996-1997 from a wide range of communities, which included rural and urban areas in parts of the Netherlands (Bilenko et al. 2015). The study asked the mothers to fill out and send back questionnaires during pregnancy, at three months after pregnancy, one-year post-pregnancy and then annually until the child turned eight years old. At 11 years old, the child and the parents both completed the questionnaire, and at age 12, there was a medical examination conducted which included blood pressure measurements (Bilenko et al. 2015).

Confounding variables were used in order to complete the statistical analysis of the population which included: sex, age, height, and BMI, cuff size, weight gain during the first year of life, breastfeeding, maternal smoking during pregnancy, and parental smoking in child's home, physical activity, puberty development scale, maternal education, ambient temperature, and room temperature (Bilenko et al, 2015). A total of 1147 children were included in the analysis. The authors concluded that there was substantial variability on blood pressure. They concluded that there was an association between an increase in diastolic blood pressure in children and the amount of long term exposure to PM<sub>2.5</sub> and PM<sub>10</sub> caused by traffic and industrial/fuel oil combustion (Bilenko et al. 2015).

Rivas et al. (2018)

**How to protect school children from the neurodevelopmental harms of air pollution by interventions in the school environment in the urban context**

Rivas et al. agreed that due to the high nature of developmental needs a child has, they are especially at a higher risk for adverse effects relating to exposure to air pollution. There are physiological factors, such as higher breathing rates and behavioral factors, such as a high physical activity that contribute to the children being more affected by air pollution (Rivas et al. 2018). Children often tend to spend more time outside than adults do. Rivas et al. reaffirm that the time children spend at school, sharing classrooms with others should be used to more effectively expand their knowledge and work on promoting clean air and air quality improvement within their community. (Rivas et al., 2018).

[Relevant studies Regarding Air Pollution and Cardio-Metabolic Diseases in Bosnia and Herzegovina](#)

Pilav et al. (2007)

**Cardiovascular Risk Factors in the Federation of Bosnia and Herzegovina**

Cardiovascular risk factors and levels of non-communicable diseases in the Federation of Bosnia and Herzegovina (FBiH), one of the two constitutional and legal entities of Bosnia and Herzegovina, were examined. The authors took into consideration the higher rates of cardiovascular disease mortality in FBiH as opposed to other European countries. This was a cross-sectional population survey conducted in 2002. A random sample of the population was selected, aged 25-64, resulting in a total of 2750 people that participated in the study (Pilav et al., 2017). The findings of the survey data collected indicated that 40% of the participants were hypertensive (blood pressure levels over 140/90 mmHg) (Pilav et al., 2017). The findings of the study also suggested that 75% of both men and women were overweight (BMI >25kg/m<sup>2</sup>) (Pilav et al., 2017).

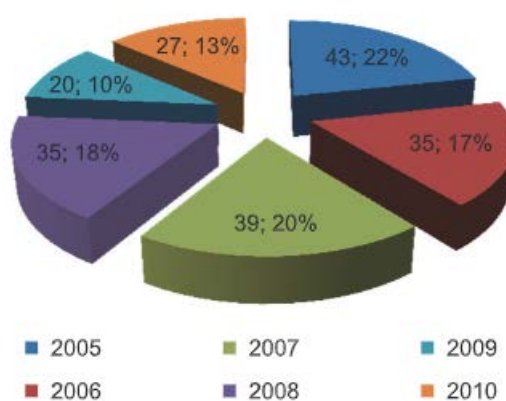
Additionally, 16% of men and 20% of women were considered obese, which indicates having a BMI > 30kg/m<sup>2</sup>. Pilav et al., also found that 50% of men and 30% of women are daily smokers. Combined, all these factors indicated that the risk of cardiovascular mortality rates in FBiH was consistent with previous studies done that showed a rise in risk and mortality rates due to cardiovascular diseases. The authors emphasized the need for a more strategic approach to health promotion planning and health literacy to address the gaps in knowledge and improve public health within the country by lowering the disease burden caused by cardiovascular disease (Pilav et al., 2007).

**Habeš, et al. (2013)**

**Air pollution by nitrogen oxides in Sarajevo from 2005 to 2010**

Analysis of levels of nitrogen oxide concentration (NO) in the period of 2005 to 2010 was the purpose of this study. Nitrogen oxide gases contribute negatively to human health because they are vital to the formation of fine particles (PM). The authors performed measurements concentrating on and using the meteorological station Bjelave in Sarajevo as the measuring point (Habeš et al.2013). Using the data collected, the authors concluded that from 2005 to 2008, the levels of NO were above the permitted value and they also noted a decline in NO levels in the years 2009-2010, which the authors deemed as notable and a positive result. The authors reaffirmed that modernizing and diversifying monitoring of NO in Sarajevo is needed to provide a better understanding of the living and working conditions of those residing in Sarajevo (Habeš et al.2013). They also reiterated that improvements to the quality of vehicles on the road and the use of green fuels is essential in improving air quality in Sarajevo.

FIGURE 1. Average annual concentrations of NO automatic station Bjelave 2005-2010(Habeš et al., 2013)



**Branković et al. (2012)**

#### Evaluation of bad habits as risk factors for cardiovascular diseases in Sarajevo Canton

The need for a more comprehensive health promotion strategy was examined in this study. The overall aim of the study was to examine how harmful habits pose a connection as cardiovascular risk factors in the population of Canton of Sarajevo. The study used an intersection descriptive method of research to randomly identify 443 participants aged 18-65 (Branković et al., 2012). The questionnaire analyzed control of cholesterol levels, blood pressure, blood sugar, frequency of minor physical activities and attitudes towards smoking, tendency to quit smoking and attitude towards alcohol consumption in the last 12 months, and frequency of alcohol consumption (Branković et al., 2012). The two most significant findings of the study are represented below in Tables 1 and 2.



Table 1. The current attitude toward smoking

	Number	Percent %	Valid Percent%	Cumulative percent %
Yes, daily	194	43.8	45.0	45.0
Yes, occasionally	8	1.8	1.9	46.9
No, I don't smoke	229	51.7	53.1	100.0
Total	431	97.3	100.0	
No response	12	2.7		
Total	443	100.0		
No response	4	.9		
Total	443	100.0		

Table 2. Frequency of Alcohol consumption

	Number	Percent %	Valid Percent%	Cumulative percent %
Daily	325	73.4	79.9	79.9
Couple times per week	37	8.4	9.1	88.9
1x weekly	14	3.2	3.4	92.4
Couple times per month	19	4.3	4.7	97.1
Couple times per year	12	2.7	2.9	100.0
Total questioned	407	91.9	100.0	
Not questioned	36	8.1		
Total	443	100		

The authors concluded that there were that over 43.8 % of participants were daily smokers and that over 73.4% of the participants consume alcohol daily (Branković et al., 2012). This suggested that the prevalence of harmful habits, such as smoking and drinking alcohol is exceptionally high in Canton of Sarajevo, which furthermore shows that these behaviors negatively contribute to the overall risk of cardiovascular disease within the population (Branković et al., 2012).

#### Figurek et al. (2016)

##### Air Pollution Effect on Morbidity of the Population of the Republic Of Srpska

In this descriptive study, the authors analyzed the health of the population of the Republic of Srpska, one of two constitutional and legal entities of Bosnia and Herzegovina. The data of around 1.4 million people obtained through the Public Health Institute of the Republic of Srpska (RS) was obtained during 2009-2013 and then compared with suggested threshold guidelines by WHO and other European databases ) (Figurek, 2016). The authors noted that the primary pollutants in RS were PM10 and PM2.5, nitrogen oxides, ozone (O<sub>3</sub>), Sulphur dioxide (SO<sub>2</sub>), polycyclic aromatic hydrocarbons (PAH), benzene, 1,3-butadiene, carbon monoxide (CO) and lead (Pb) (Figurek, 2016). The authors also established that

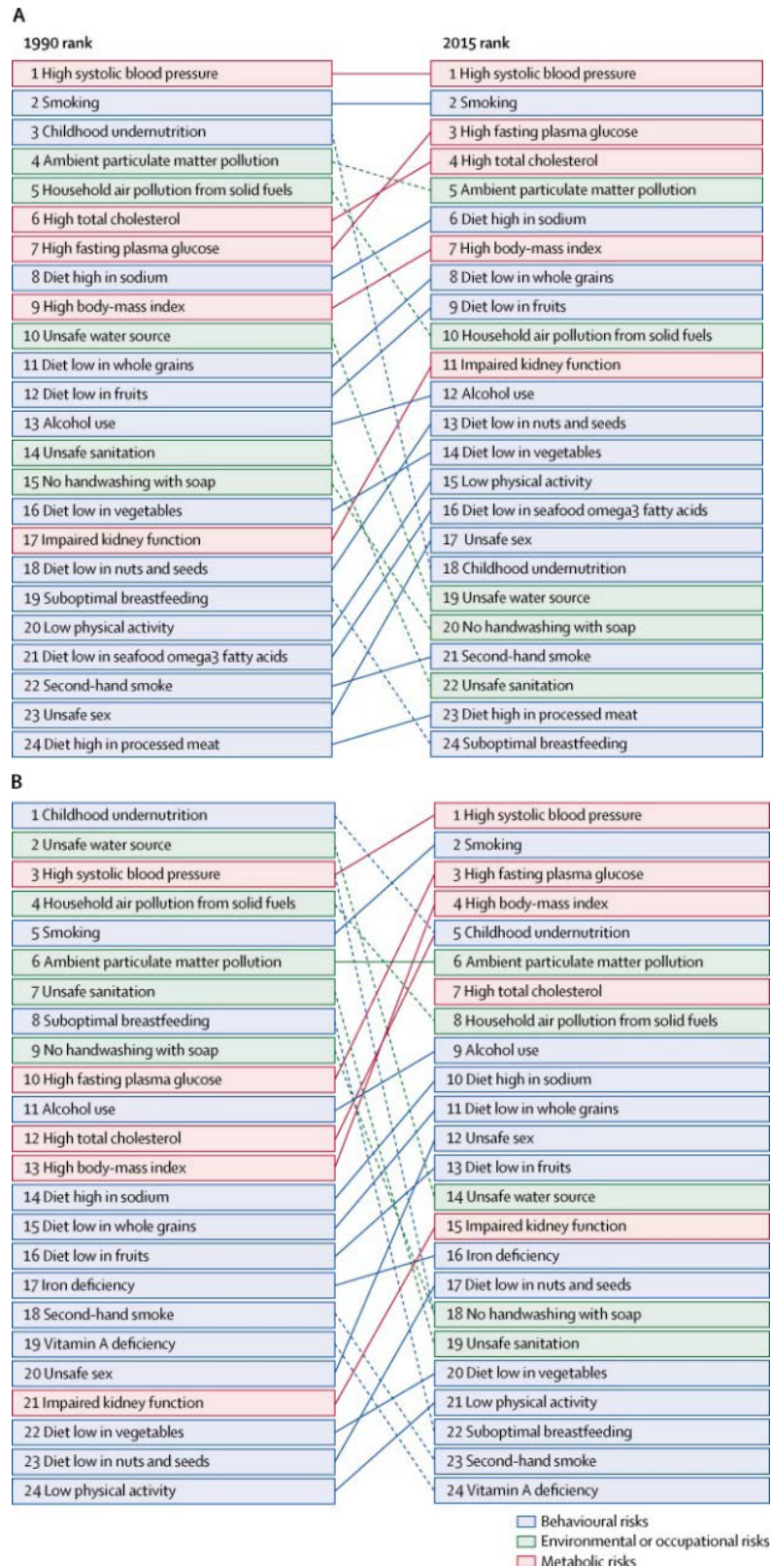
the population of RS is mostly affected by circulatory system diseases followed by neoplasms (Figurek, 2016). Noting the burden of disease in RS further supported the data related to the risk factors associated with PM exposure can cause a domino effect in triggering cardiovascular disease-related mortality, which is in accord with the author's findings of the analyzed population) (Figurek, 2016).

**Cohen, et al. (2017)**

**Estimates and 25-year trends of the global burden of disease attributable to ambient air pollution: an analysis of data from the Global Burden of Diseases Study 2015**

Long term exposure to ambient air pollution increases rates of mortality and morbidity related to cardiovascular and respiratory diseases, resulting in shorter life expectancy (Cohen et al., 2017). The study published by Cohen et al. in 2017 analyzed data collected from 1990-2015 that estimated burden of disease, attributable to 79 risk factors, which also included air pollution in 195 countries and territories (Cohen et al., 2017). The study concluded that regards to long-term exposure to air pollution in 2015, there were 4.2 million deaths and 103.1 million lost years of healthy life in 2015 (Cohen et al., 2017). This data represented 7.6% of total global mortality, identifying air pollution as a leading cause of global disease burden (Cohen et al., 2017). The authors also noted that air pollution is especially harmful in countries that are identified as low and middle income, identifying a need to address air pollution effects from a population health perspective (Cohen et al., 2017). Risks are connected by lines between years; solid lines show risks that have stayed the same or moved higher in the ranking and dashed lines show risks that have moved lower (Cohen et al., 2017). Please see **Table 3**.

Table 3. Global Burden of Diseases global risk factors for deaths (A) and disability-adjusted life-years (B), 1990 and 2015 (Cohen et al., 2017).



### Relevant studies Regarding Health Literacy and Health Outcomes

According to the WHO, health literacy is the ability of an individual to find, appraise, understand and apply information to promote and maintain good health and wellbeing (WHO, 2009). More than any other developmental period, middle childhood sets the stage for health literacy, self-discipline, the ability to make good decisions about risky situations, eating habits, and conflict negotiation (U.S. Department of Health and Human Services [USDHHS], 2014). Positive behaviors and knowledge related to health which is developed during childhood are resistant to change later when children become adults (Driesenack et al. 2014). Functional, communicative and critical health literacy apply to children (Bhagat et al., 2017). The authors identified several potential benefits related to the three health literacy approaches. Bhagat et al. stated that functional health literacy had shown an improvement in knowledge related to risks associated with a disease. Communicative health literacy has been linked to an improved capacity to act independent, motivated and able to influence social norms when in contact with social groups (Bhagat et al., 2017). Critical health literacy, according to the authors, can improve individual resiliency, community empowerment, and action when it comes to social and economic determinants of health (Bhagat et al. 2017). Proposed programs such as Eco-Schools is, therefore, the ideal approach to target the population and increase health literacy, enabling the children of Sarajevo to have healthier future and better health outcomes as they grow up and become adults.

### Chapter Summary

There is a significant need identified for a public health intervention that will promote positive behavioral changes with the increase of health literacy and inspire individual behavior changes, especially in Sarajevo. Low levels of health literacy are contributing to harmful habits which result in risk factors

that contribute to the overall mortality rate of the capital city. Air pollution is identified as especially harmful to children and their overall development and outlook. That combined with the burden of disease heavily represented by cardiometabolic diseases in Bosnia and Herzegovina represents a need for a public health intervention at an early age. An evidence-based approach using the Social Ecological Model (SEM) that will provide education and awareness within the three identified elementary schools in Sarajevo.

Low health literacy and lack of understanding of the dangers of air pollution have a significant impact on the burden disease in Bosnia and Herzegovina, which are mostly related to non-communicable diseases affected by individual behavior. The grant proposal aims to utilize weekly workshops and teacher training to implement an educational campaign to make learning about the benefits of clean air and healthy behavior fun. The implementation of the Eco-Schools program will encourage the youth to take charge of their health and the responsibility they have to make positive changes in their lives and their community. The increase in knowledge and awareness among the school children will enable them to become stewards of their right and need for a healthy future.

## CHAPTER III-METHODOLOGY

### Introduction

Chapter III includes a review of the grant call by The Office of Public Affairs (OPA) and the U.S. Embassy in Bosnia and Herzegovina, which announced a notice of funding opportunity for the Democracy Commission Small Grants program. It also includes a summary of the grant announcement for this proposal, the grant review process, and a description of the grant proposal reviewers and their expertise.

### Funding Agency- U.S. Embassy in Bosnia and Herzegovina Democracy Small Commission Grant

This grant provided by The Office of Public Affairs (OPA) United States Embassy in Sarajevo is established to fund projects with selected themes and goals which strive to provide a multi-level approach to addressing the various issues in post-war Bosnia and Herzegovina. The primary purpose of this program is to provide support to NGOs as they work together with the local community to enable and encourage a multi-level approach in their overall goal addressing the following themes by funding projects deemed unique and sustainable. The funding provided by the Democracy Small Commission Grant also aid in the development of capacity and sustainability the NGOs are trying to achieve. The following themes are targeted by the Democracy Small Commission Grant (U.S. Embassy, 2018):

- Anti-corruption
- Transparency in government
- Human rights including rights for persons with disabilities and the LGBT community
- Youth employment and activism
- Media

- Euro-Atlantic integration
- Countering violent extremism
- Environment – energy efficiency, air pollution, and waste management

### Grant Announcement

This grant announcement was chosen for the pilot program because it directly aligns with the theme of youth employment and activism as well as the environment, specifically addressing air pollution awareness. The goals related to this grant align with the Eco-Schools program which has a strong focus on encouraging and inspiring young people to engage in their environment and teach them how to protect it. This program will focus on education, awareness, and action that moves from the classroom into the community and beyond. This grant will provide approximately \$700,000 per year for up to twenty-five recipients during the federal fiscal year 2018-2019. The award amounts range from \$1,000 up to \$50,000 for up to twelve months length of the performance period. The work done by the program identified by this proposal will work towards engaging primary school children with fun, action-orientated and socially responsible learning to have a positive impact on their lives, their families, their school and communities around them. The complete grant announcement can be found in Appendix 1.

### The Grant Review Process

On 19MAR2019 an individual draft of the grant was provided to the reviewers. They were provided with a timeline of two weeks in order to review the grant and provide feedback and input. The grant reviewers were also provided the EMPH grant review template and the complete Democracy Small Commission Grant Call with attached instructions on how to use the reviewer template, provide tracked

comments into the document directly. The information obtained from the EMPH reviewer template, as well as the open-ended questions, were examined and used for consideration and analysis in order to make appropriate changes to the proposal. The multiple-choice questions were counted to provide analysis of answers in each category. After all the feedback and comments were received, they will be used to complete Chapter IV of this thesis. The final version of the grant proposal will be completed using feedback provided by the members of the committee.

The ten questions on the EMPH reviewer template include:

1. Please state your level of agreement/disagreement with the following statement: The submission is responsive to the call for proposals.
  - a. Strongly Agree b. Agree c. Neither Agree nor Disagree d. Disagree e. Strongly Disagree
2. How could the submission have been more responsive to the call for proposals?
3. Please state your level of agreement/disagreement with the following statement:  
The proposal is well thought out and theoretically sound.
  - a. Strongly Agree b. Agree c. Neither Agree nor Disagree d. Disagree e. Strongly Disagree
4. What improvements could be made to the theory and structure of the proposal?
5. Please state your level of agreement/disagreement with the following statement: The PI makes a compelling case that the proposed research/project/program is necessary.
  - a. Strongly Agree b. Agree c. Neither Agree nor Disagree d. Disagree e. Strongly Disagree
6. What would have improved the argument that the proposed activities are necessary?
7. Please state your level of agreement/disagreement with the following statement: The PI makes a compelling case that the research team will be able to accomplish the proposed activities with the resources and time allocated.
  - a. Strongly Agree b. Agree c. Neither Agree nor Disagree d. Disagree e. Strongly Disagree
8. What changes would improve the perceived feasibility of the proposed activities?
9. Please state your level of agreement/disagreement with the following statement: The proposed work is innovative and sets the groundwork for future work in this area.
  - a. Strongly Agree b. Agree c. Neither Agree nor Disagree d. Disagree e. Strongly Disagree



10. What additional comments and suggestions do you have for the PI?

#### Grant proposal reviewers

A total of five grant reviewers were chosen to review and provide feedback on this proposal.

Reviewers were chosen based on their expertise in the field of environmental health, public health and grant writing.

#### Thesis Committee Chair:

*W. Michael Caudle, Ph.D.* is the Assistant Professor in the Department of Environmental Health at Emory University. He is also a member of the Neuroscience Program in the Graduate Division of Biological and Biomedical Sciences (GDBBS), the Center for Neurodegenerative Disease (CND) as well as the Neuroscience and Behavioral Biology Program. His research focuses on investigating how environmental chemicals contribute to neurological disease.

#### Thesis Committee Field Advisor:

*Johanna M. Hinman, MPH, MCHES* is the Associate Director of Education for the Department of Surgery at Emory University's School of Medicine. Johanna has 20 years of experience in public health education, health communication, and program planning and project management. A graduate of Emory's Rollins School of Public Health (RSPH) and a Master Certified Health Education Specialist, Johanna has worked for the CDC and the Arthritis Foundation National Office.

#### Thesis Committee Members:

*Suzanne Hemphill-Dickson, Ph.D., PMP, MPH* is a seasoned professional with a passion for information technology and public health awareness. She has over 35 years of experience in government contracting within Health and Human Services (HHS) and the Department of Defense (DOD).

*Larisa Niles-Carnes, BS, MPH(c)* has worked in the public health field for over 15 years serving as an advocate and educator. Her work primarily includes reducing the stigma associated with HIV through outreach programs and reducing new infections. Additionally, she has worked in mental health, specifically with those experiencing depression and mood disorders.

*Kenisha Barron BS, MBA, CCRC* has a BS in Biology from Spelman College and an MBA from Goizueta Business School at Emory University. She is currently an Associate Project Leader with PAREXEL International, specializing in providing global operational and logistical oversight for clinical research projects in various therapeutic areas.

## Appendix A. Grant Call

U.S. DEPARTMENT OF STATE  
U.S. EMBASSY SARAJEVO, OFFICE OF PUBLIC AFFAIRS



**Funding Opportunity Title:** DEMOCRACY COMMISSION SMALL GRANTS PROGRAM  
**Funding Opportunity Number:** 002-FY2018  
**Deadline for Application:** Friday, January 19, 2018 **CFDA Number:** 19.900  
**Length of Performance Period:** 12 months  
**Number of Awards Anticipated:** At least 25 depending on amount of each grant  
**Award Amounts:** Awards may range from USD 1,000 to USD 50,000  
**Total Available Funding:** USD 700,000  
**Type of Funding:** FY17/18 Assistance to Europe, Eurasia and Central Asia (AEECA) under the Foreign Assistance Act  
**Anticipated Award Date:** May/June 2018  
**Funding Instrument Type:** Grant, Fixed Amount Award (FAA)

The United States Embassy in Bosnia and Herzegovina, through the Office of Public Affairs, is pleased to announce a **Notice of Funding Opportunity (NOFO)** for the Democracy Commission Small Grants Program. **\*\*There are new requirements this year, so please read all the instructions below carefully before beginning your application.\*\***

The U.S. Embassy receives hundreds of proposals and takes time to carefully review each application. We expect to inform applicants of the status of their proposals approximately 4-6 months from the closing date of this Notice of Funding Opportunity. Funding decisions are contingent on the availability of funds. The U.S. Embassy reserves the right to cancel this Notice of Funding Opportunity at any time without any commitment to any applicant.

For more information, please contact us by phone: + 387 33 704-344, 704-285,  
 , fax: + 387 33 704-432 or an e-mail [DemcomBiH@state.gov](mailto:DemcomBiH@state.gov)

### DEMOCRACY COMMISSION SMALL GRANTS PROGRAM

This program supports NGO efforts to enable greater citizen participation in fighting corruption, transparency in government, preventing brain drain, enhancing human rights (including gender equality and the rights of persons with disabilities), building a tolerant and multi-ethnic society, supporting independent media, and countering violent extremism.

### PROJECT THEMES

Projects should deal with one of the following themes

Anti-corruption

Transparency in government

Human rights including rights for persons with disabilities and the LGBT community

Youth employment and activism

Media

Euro-Atlantic integration

Countering violent extremism

Environment – energy efficiency, air pollution and waste management

### **PROJECT PERFORMANCE PERIOD**

The budget for single project proposals for the Democracy Commission Small Grants Program should not exceed USD 50,000 and program activities should take place between **April/May 2018 and April/May 2019**.

### **ELIGIBILITY**

**C1. Who can apply:** Non-profit organizations (including think tanks, civil societies and NGOs), educational institutions and independent media that are based and legally registered in Bosnia and Herzegovina are eligible to apply.

Grants to individuals should be awarded only if the individual is affiliated with an organization that can provide long-term sustainability to the initiative.

**C2. Other eligibility requirements:** In order to be eligible to receive an award, all organizations (with the exception of educational institutions and individuals) must have a DUNS number unique entity identifier and a valid registration on [www.SAM.gov](http://www.SAM.gov). Please see **Section E** for information on how to obtain these registrations.

**C3. Proposals from prior grantees:** Organizations may only submit one proposal per program. Organizations that have received a grant from the Democracy Commission Small Grants Program in a previous cycle and have not completed their projects are not eligible to apply for another Democracy Commission Small grant until they have submitted their final reports, but may still apply for grants from the Women’s Empowerment Small Grants Program or the Interethnic Reconciliation and Youth Small Grants Program.

### **APPLICATION AND SUBMISSION INFORMATION**

**D1. Mandatory application forms:** Your application cannot be reviewed without all of the below elements. All forms and instructions are available at [https://ba.usembassy.gov/ under Grants and under Application package](https://ba.usembassy.gov/under-Grants-and-under-Application-package).

**Please note: Obtaining the DUNS number and registering in the SAM system can take up to one month. We strongly encourage you to start this process as soon as possible, since we cannot review any projects that do not include DUNS numbers and completed SAM.gov registrations.**

SF-424 (Application for Federal Assistance – organizations). Please make sure to include your DUNS number in the application.

SF424A (Budget Information for Non-Construction programs) SF424B (Assurances for Non-Construction programs)

**Project Proposal (6 pages maximum):** The proposal should contain sufficient information that anyone not familiar with it would understand exactly what the applicant wants to do.

Screenshot of your SAM registration or a printout of your registration document from the SAM.gov web page.

**D2. General Guidelines: Please read all instructions carefully – proposals that do not meet the requirements listed here will not be considered for funding.**

All proposals must be written and submitted in English.

Proposals may not exceed 6 pages in length (including budget and checklist) in Times New Roman Size 12 font.

All fields in the grant application form and check-list must be completed and sent via email as one document.

Project duration may not exceed 12 months.

Grants are normally made on a one-time basis and reiterations of past programs usually do not receive funding. If you are requesting support to fund a repetition of a project you previously implemented, you must include a very strong justification as to why the repetition is necessary.

Please submit your filled in application to the following e-mail address: [DemcomBiH@state.gov](mailto:DemcomBiH@state.gov).

**The deadline for submission of the Democracy Commission Small Grants proposals /supporting documentation is January 19, 2018 by 17:00 p.m.**

**D3. Budget Guidelines: Any application not meeting the budget requirements below will not be considered for funding.**

Detailed budget should be written in USD, with a maximum amount of USD 50,000. However, the vast majority of the issued awards will be for smaller amounts up to USD 25,000. Only exceptional projects with clearly explained and measurable outcomes will be awarded the maximum amount of USD 50,000. Budget should NOT include VAT expenses.

Budget costs should be grouped into the following categories:

Personnel costs (salaries for staff who already work for your organization, fees for project manager, project coordinator/assistant, and or accountant)

Fringe (social and pension insurance contributions)

Travel (transportation costs, lodging, meals and incidentals)

Supplies (office supplies and other materials for project implementation)

Contractual (fees for trainers, moderators, experts, and educators, who do NOT normally work for your organization but who are engaged to implement certain project activities, printing of promotional materials, renting of space/equipment, broadcasting of TV and radio shows, web site development, and other contractual services needed for project implementation.)

Other direct costs: (office rent, utilities, phone/fax/internet, office supplies, bank charges, etc.)

The total of personnel costs, fringe and other direct costs should not exceed 30% of total award amount.

Costs for food or drink should not exceed 10% of the total award amount.

The total costs of promotional materials (brochures, banners, T-shirts, posters, leaflets, etc.) should not exceed 10% of the total award amount.

Alcohol, entertainment, or “miscellaneous” expenses are not allowed.

Costs incurred before the grant period start date will not be reimbursed.

Grant funds may not be used for the following:

Long-term infrastructure needs

Materials and equipment (unless purchased for the purpose of providing training to the participants)

Expenses incurred outside of the territory of BiH, such as travel to international conferences, or the purchase of goods or payment of services in other countries

Provision of direct social services to a population

Vocational training, for example teaching participants to sew, raises bees, knit, etc.

Partisan political activity (Note: non-partisan election education and public information activities are allowable.)

Funding of charitable activity and humanitarian aid, commercial projects, or fund-raising campaigns

D4. Review criteria: All proposals will be evaluated by the Democracy Commission review panel on the below criteria.

Compliance with proposal guidelines and inclusion of mandatory components

Clearly identified goals and target audiences

Well-developed plan of activities that clearly support the program goals

Concrete and logical budget

Project sustainability

Implementation capacity of applicant

D5. Application Instructions: Please read carefully and complete each question as instructed. Omitting any of the requested information will delay the review of your proposal and may result in it being eliminated from consideration.

**Program Type:** Please indicate which program you are applying for.

**Applicant's Contact Information**

**Implementing organization:** Specify the officially registered name of the organization.

**Contact person and title:** Name and the title of the Project Coordinator, or the person who is authorized to sign official documents, if different from the Project Coordinator.

Address/Postal Code and City

**Phone number**

**E-mail:** Please include both the general email address for your organization and the email address of the project coordinator.

#### Basic Information about the Proposal

**Project title:**

**Amount requested (USD)/Amount of cost share (USD)/Total cost (USD):** Please list the amount of funding requested from the Embassy. If there is a cost share (another organization covering part of the total cost of the project), please list the amount here. Please list the total cost of the project.

Elevator pitch:

In 50 words or less, describe what your project is about and why it should receive support from the U.S. Embassy.

Problem statement:

Clearly identify the problem your project will address, including brief background information for context, if necessary. For example, “Women in my community are under-employed. Many make food products or handicrafts, but are unable to earn much from this pursuit because they only sell at local fairs.”

Project goals and objectives:

Please explain how you want to solve this problem by explaining the goals and objectives of your project. Following the above example, the project goal might be “Reduce under-employment among women in my community by empowering women artisans to sell their products to a wider audience” and the objectives might be “Teach participants how to market their products and sell them through online marketplaces.”

Description of project activities:

Explain the activities you plan to implement in the scope of your project and how those activities will achieve the project goals you described above. If you are planning workshops, please explain how many workshops, what will be taught and how many participants will take part. Example: “My project will create a series of three workshops for 25 women artisans where they will learn about marketing, pricing, and how to use existing digital marketplaces to sell their products.”

Activity locations:

List the cities/towns/communities where the project activities will take place.

Project beneficiaries:

Describe the anticipated beneficiaries of your project, including estimated number and age range, i.e., “approximately 50 unemployed women in Capljina, ages 25- 40” or “about 100 high school students in Rogatica.”

Project schedule and timeline:

Note your project duration in months and give an overview of the schedule. If you have a specific timeframe, please list the dates and explain why your project must take place within that timeframe.

Project partners:

If you are implementing your project jointly with any other organizations, please list the names and type of involvement of those partner organizations. A partner organization is an organization with which you work to develop and implement the project. Partner organizations also need to obtain DUNS numbers. Please note: contractors you engage to deliver goods or services such as trainers, web developers or suppliers are NOT partner organizations.

Key personnel:

List the names, titles and roles of key personnel involved in the project, including organization staff and any experts or trainers you will engage to implement the project. Give a brief overview (1-2 sentences) of their experience/qualifications.

Anticipated outcomes of project:

Explain the outcomes you hope to achieve and how you will measure whether the project has succeeded. For example, “As a result of my project, women artisans and entrepreneurs will be equipped with the skills they need to sell their products online. To measure the success of the program, I will carry out a survey with the participants to see how much their knowledge has increased and I will also report on how many of the participants begin selling their products online or have concrete plans to do so in the near future.”

Project sustainability:

Please explain your plans for follow-on activities after the grant period to ensure project impact continues. Example: “After the workshop series, the participants will continue to meet and serve as a support network to each other, as well as mentor other female artisans and entrepreneurs.”

Background of implementing organization:

Briefly explain the mission of the organization, examples of past and current programs implemented, as well as its technical and management capacity.



Previous U.S. Government funding:

Indicate whether the implementing organization has received previous funding from the U.S. Government. If so, please state the name of the project, the year and the amount of funding for each project.

Detailed budget:

Present the budget in the form of a spreadsheet, in USD amounts, dividing the budget into the categories delineated in the application. Cost sharing is not required. However, the Recipient may present cost-sharing on voluntary basis including in-kind contributions. The absence of cost sharing will not in any way impact evaluation of the project. If the Recipient includes cost sharing in the project proposal, then the Recipient is accountable for providing additional funds and justifying the costs.

Budget narrative:

Please explain your budget in narrative form, detail personnel duties, list names of trainers/moderators/experts and project staff and break down travel and lodging costs (i.e., how many people, how many overnights, cost per person per day).

## CHAPTER IV- INCORPORATION OF GRANT PROPOSAL REVIEWER COMMENTS

### Acknowledgment of the Thesis Committee

I would like to thank each member of the thesis committee for their time in effort during this endeavor. I am very grateful for all the comments, feedback and guidance I have received during the grant proposal writing process. The vast experience that each reviewer brought to this project has added tremendous value to the overall improvement of my proposal. Comments provided by the committee were analyzed by the author and used as constructive feedback in order to finalize the proposal as needed. All comments provided are included in this chapter of the thesis. They also included clarifications, grammatical and formatting feedback. Detailed responses to the comments are below for each reviewer. Table 1 has responses regarding multiple choice questions from the EMPH reviewer template.

### Grant Reviewers Comments on Request for Proposal

#### Reviewer 1 comments: W. Michael Caudle, PhD

Comment 1: Check your spacing throughout the document and make sure it is consistent.

Response to Comment 1: Done

Comment 2: The Table (3) Detailed Budget looks nice, but what are you planning to do during July and August 2019? These blocks are empty.

Response to Comment 2: Updated activities for July and August.

Comment 3: I'm not understanding the budget. (Narrative) This is a two year program, but you are requesting money for only 12 months?

Response to Comment 3: Clarified as two years.

Reviewer 2 comments: Johanna M. Hinman, MPH, MCHES

Comment 1: Problem statement: Include a statement or two here about the adverse effects being experienced by the population now to illustrate the problem more specifically

Response to Comment 1: comment added to clarify.

Comment 2: Problem statement: What does “Canton level” mean?

Response to Comment 2: Clarified as county level.

Comment 3: Project goals: Is the focus specifically on air pollution or all aspects of environmental health risks?

Response to Comment 3: Clarified statement as both.

Comment 4: Project beneficiaries: It seems these must be very small schools, if there are only 100 children across three of them in this wide age range. Are you only addressing some of the children in each school but not all?

Response to Comment 4: Increased children who will participate to 400.

Comment 5: Key Personnel: Is the National Operator the same person as the National Coordinator?

Response to Comment 5: That is correct.

Comment 6: Anticipated outcomes: In the first part of the proposal, air pollution seems to be a primary focus, but these outcomes are based on very broad environmental “awareness” and not tied to specific

health outcomes. The connections need to be explained much more clearly and/or the overall project focus should be narrowed.

Response to Comment 6: clarified that anticipated outcomes should be both, environmental awareness by strongly focusing on air pollution.

Comment 7: Budget Narrative: Provide more detail on the “big ticket items” (supplies, software, teacher workshops and travel) - it’s not clear what software is needed, nor what the teachers will be learning. Are they traveling to specific workshops with set curricula? Or is this to provide general support for continuing education as they find it?

Response to Comment 7: specified software and hardware needed as well as continuing education section in the budget.

Comment 8: The proposal is responsive in a broad sense, but it is very general and does not provide enough detail to determine the specific activities being proposed. It seems to follow the overall themes of the call for proposals and fit the overall mission of the Democracy Commission, but it is not clear exactly what the project activities will be.

Response to Comment 8: Clarified activities by providing curriculum and lesson plan

Comment 9: What improvements could be made to the theory and structure of the proposal?

There is no background data presented in the proposal on the specific health effects being addressed. Nor is there detail on the development or theoretical base for the Eco-Schools Program. As an international program, it seems likely there is more information that could be included about this specific program. The proposal should describe the specific criteria that must be met and the specific activities or topics that will be included in the curriculum for the students. It would also strengthen the proposal to

include results of other Eco-Schools activities to demonstrate why this program is appropriate to the communities in BiH.

Response to Comment 9: curriculum, lesson and implementation plan added to help clarify the missing link

Comment 10: What would have improved the argument that the proposed activities are necessary?

As mentioned above, the proposal lacks specificity. The concern of air pollution is raised at the beginning, but then there is no follow-up within the proposal to illustrate how air pollution will be addressed within the activities of this program. Is air pollution a major topic the students will learn? Are there concrete actions that can be taken at the school level to address air pollution? How will they be measured?

Response to Comment 10: added curriculum and lesson plan to clarify overall goal as designee of Green Flag Award.

Comment 11: What changes would improve the perceived feasibility of the proposed activities?

There is no detail on the qualifications of the coordinator. If this person has not yet been identified, the proposal should describe the training that person will receive to make him/her qualified to coordinate these activities.

Response to Comment 11: Added comment about training provided by eco-schools.

Comment 12: What additional comments and suggestions do you have for the PI?

Overall, the proposal needs more detail and specificity to link the proposed activities to the anticipated outcomes of students gaining more awareness about health effects of environmental pollution and being able to take a proactive approach. The goals are admirable, but the connections between the proposed

program and the goals are not clearly explained. It would be appropriate to include some shorter-term outcomes as well. It seems as if the goal actually is to achieve Eco-School designation. If that is the case, that is still a reasonable (and potentially fundable) goal, with the longer-term hope that this will lead to better health for the communities served by the program. As written, though, the proposed activities do not seem adequate to achieve the lofty goals.

Response to Comment 12: Added specific lesson plan and sample curriculum by Eco-Schools USA

Reviewer 3 comments: Suzanne Hemphill-Dickson, Ph.D., PMP, MPH

Comment 1: Check formatting to meet Rollins Requirements. Do you need IRB/OMB clearance? What is the method for selecting the children the project will help (beneficiaries) and the locality to the Embassy? You used the phrase “educational awareness and environmental awareness,” I would stick with one or the other.

Response to Comment 1: done.

Comment 2: Elevator pitch: In 50 words or less, *describe what your project is about* and why it should receive support from the U.S. Embassy. I think you need more clarity around “what your project is about”. What is Eco-schools?

Response to Comment 2: no further changes needed

Comment 3: Project goals and objectives: I think your goals are expressed with “bold” text, followed by your objective. Might be more compelling to add more content/context around your goal. Similar to the example given.

Response to Comment 3: updated

Comment 4: Project schedule and timeline: Table 1 didn't print with a comprehensive timeline that spans across 2 years. Consider using a Gantt chart.

Response to Comment 4: For the purpose of this proposal, the project schedule and timeline are sufficient.

Comment 5: Project Partners: Change to Table 2. Currently reads Table 3, which is labeled as Detailed Budget. In your synopsis, consider calling out the organizations, so you don't force the reviewers to stop reading to search for the appropriate table.

Response to Comment 5: for the purpose of the length of the grant, the location of the tables/figures etc. had to be placed at the end of the document.

Comment 6: Key Personnel: Missing the names of Key personnel, experience, qualifications, etc...

Degrees, certification, years of experience, specialized skills

Response to Comment 6: Unable to obtain this information as it was not available, but provided section where it states that Eco-Schools will help with training, certifying and continuing education.

Comment 7: Anticipated outcome of project: Make sure your timeline speaks to both prelim & post evaluations

Response to Comment 7: updated.

Comment 8: Background of implementing organization: Consider adding the technical and management capacity to your statement as well as naming the past and present performance (projects), in order to make this section compliant.

Response to Comment 8: Did not have the information available to make more of a case.

Reviewer 4 comments: Larisa Niles-Carnes, BS, MPH(c)

Comment 1: Problem Statement: There is a desperate need to provide awareness and education that will start at an early age within the population in order to make reasonable changes to air pollution management.

Response to Comment 1: updated.

Comment 2: Anticipated outcomes: Spacing between the numbers and paragraphs is not consistent. Sometimes it's one space and sometimes two.

Response to Comment 2: Will go over all editing and formatting to ensure compliance.

Comment 3: What would have improved the argument that the proposed activities are necessary?

The argument is solid, they just need the funding to implement the change.

Response to Comment 3: curriculum added to help clarify proposed activities and lesson plans.

Comment 4: What changes would improve the perceived feasibility of the proposed activities?

The funding will need more than one year as proposed by the call and you request two years.

Additionally, once those questionnaires are provided, how will there be time to evaluate data and then propose a solution? The school children are a good incentive, but perhaps laws need to be changed to change the jurisdiction of monitoring pollution and the particle amount needs to be lowered. However, this is a great start. You may need to describe the curriculum more?

Response to Comment 4: clarified as a two-year program and added curriculum to clarify action plan.

Comment 5: What additional comments and suggestions do you have for the PI?

A couple of grammatical errors here and there. I have attached your proposal with those comments. I like the use of images and tables to break down your proposal.



Response to Comment 5: will work on editing and reviewing all grammatical errors.

Reviewer 5 comments: Kenisha Barron, BS, MBA, CCRC

Comment 1: How could the submission have been more responsive to the call for proposals? I found the submission to be effective in addressing the items required for completion of the call for proposals. As with any proposal, additional details could be added to the budget grid; however, the information provided sufficiently describes the organization's objective and proposed use of the requested funding.

Response to Comment 1: no action needed

Comment 2: What improvements could be made to the theory and structure of the proposal? I have no suggestions for improvements at present. The proposal was well thought out and demonstrated both a need and a solution to address the need presented.

Response to Comment 2: no action needed

Comment 3: What would have improved the argument that the proposed activities are necessary? Perhaps additional details on the types of health disparities seen when comparing children from Sarajevo and children from other Eastern European countries with lower air pollution.

Response to Comment 3: for the purpose of this grant, information not needed.

Comment 4: What changes would improve the perceived feasibility of the proposed activities? Perhaps additional details on the estimated timeline for implementing each step of the program.

Response to Comment 4: clarified timeline as well as added curriculum to help clarify.

Comment 5: What additional comments and suggestions do you have for the PI? In reading through the proposal I was struck by the simplicity of the concept and, yet, the far reaching, long term positive effects of its implementation. Teaching the children and fostering a sense of responsibility for them in turn to teach their families, their neighborhoods, their communities, is an innovative approach to work towards solving a long-standing problem.

Response to Comment 5: no action needed

Table 1. EMPH Grant Reviewer Results of Multiple Choice Questions

EMPH Grant Reviewer Template: Results of Multiple Choice Questions					
Question	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree
The submission is responsive to the call for proposals.	XX	XX	X		
The proposal is well thought out and theoretically sound.	X	XXX	X		
The PI makes a compelling case that the proposed research/project/program is necessary.	XXX	X	X		
The PI makes a compelling case that the research team will be able to accomplish the proposed activities with the resources and time allocated.	XX	X	X	X	
The proposed work is innovative and sets the groundwork for future work in this area.	XX	XXX			

## CHAPTER V- DEMOCRACY SMALL COMMISSION SMALL GRANTS PROGRAM PROPOSAL



### 1. Basic information about the Grant Proposal

**Project title:** Eco-Schools: A Project-Based Grant Proposal Thesis to implement an environmental awareness program among primary school-aged children in Sarajevo, Bosnia, and Herzegovina that will address air pollution and exposure that contribute to mortality rates related to cardiometabolic diseases.

**Amount requested (USD):** \$49,907.25

**Implementing organization:** Social Innovation Incubator MUNJA

**Contact Person and Title:** Jan Z. Kulenovic, National Operator for Eco-Schools of Bosnia and Herzegovina

**Address/ Postal Code and City:** Skenderija 28, Sarajevo, BiH

**Phone number:** 033-874-361

**E-mail:** ekoskole@munja.ba

### 2. Elevator Pitch

All children have the right to breathe clean air. The children of Sarajevo are at a higher risk of disease and health inequalities due to air pollutant exposure that constantly exceeds safe limits. How can this health disparity be successfully addressed? One way to do that is by implementing Eco-Schools.

### 3. Problem Statement

Primary school children in Sarajevo are exposed to unsafe levels of polluted air daily. School closures in the winter time due to high levels of polluted air have become the norm in this city. What is most troubling is that many citizens who call Sarajevo home are not aware of the adverse effects air pollution has on their health. Exposure to polluted air at an early age will have damaging effects on the children's health such as a prevalence of childhood asthma, increased risk of hospitalizations due to asthma attacks and deficit in lung development caused by air pollution to name a few. The Ministry of Health, which is a

governmental entity on the state level of the BiH Federation has not implemented warning thresholds for fine particle pollution, but instead, this responsibility has been delegated to the authorities at the Canton (County) level. In the case of Sarajevo, the threshold alert is at 400 micrograms, which in comparison is five times the threshold of Paris, France. There is a desperate need to provide awareness and education that will start at an early age within the population in order to make reasonable changes to the overall environment and specifically to air pollution management. Doing so will help enable the population of the city and beyond to take charge of their health, make positive behavioral changes and be advocates for their health and that of future generations to come.

#### 4. Project Goals and Objectives

The program will help provide the needed environmental education and awareness strongly focusing on air pollution by providing an overall environmental education program in all segments of the educational system, by involving students, teachers, school administrators and then finally the community at large (Eco Schools, 2019). Implementation of this program provides a clear path for life-long positive impacts for those students which will enable them to improve the environment in their school and the local community level. The fundamental goals and objectives Eco-Schools implementation achieves are (Eco Schools, 2019):

**Include everyone-** participation by students, teachers and local community at large.

**Improve School Environment-** Improving the environmental footprint of the school, focusing on sustainability, costs and responsible school environment.

**Motivate-** students will be challenged to tackle environmental problems at a level that will enable them to see tangible results, thus helping them realize that they can make a difference.

**Improve attitudes-** Cultivating a sense of responsibility by inspiring those in the program the drive and inspiration to promote proactive behavior among their family, friends, and community at large, which will positively affect future generations.

**Involve Communities-** Positive behavior changes will be practiced in the community, promoting a more environmentally responsible pattern of behavior.

**Connect globally-** promotes a sense of inclusion on a global level, sharing successes with other schools who participate worldwide, information sharing, cultural exchanges, language skill improvement. See **Figure 3** for map of global Eco-Schools participants.

## 5. Description of Project Activities

Implementation of the Eco-Schools program requires completing a series of 7 steps as measures carefully developed and engineered to provide each school with the most promising way to succeed (**Figure 1**). Each one of the steps of the framework requires involvement from the students. Eco-Schools will follow and implement project activities and curriculum by implementing the 5E instructional model which is a set of teaching stages that provide best practices in student learning (Eco-Schools USA, 2019). See **Appendix 1, 2, and 3** for an overview of the 5E Instructional Model, a sample curriculum plan and the timeline for implementation provided by Eco-Schools.

Form an Eco Committee	Identified as the driving force behind the program, the committee must be comprised of at least 50% student population. Teachers, Parents, non-teaching staff, management, and community representatives are also invited to be members of the Committee that will ensure that all 7 steps are carried out appropriately following the program guidelines (Eco Schools, 2019).
Carry out on Environmental Review	This step will help establish accurate baseline assessments and the school impact on the environment. The checklist provided by Eco-Schools can be used and amended as appropriate to survey and identify areas that need improvement (Eco Schools, 2019). The findings will be consolidated into an Environmental Review report that will be shared with the community and National Operator as a requirement for the Green Flag Award process (Eco Schools, 2019).

The Action Plan	<p>The Action Plan development will identify and list goals for the reduction of environmental impacts which were identified in the Environmental Review carried out in Step TWO (Eco Schools, 2019). The Action plan will also include a timetable with specific projected time scale by which the goals are to be completed.</p> <p>The goals must be SMART (Specific, Measurable, Attainable, Relevant, Time-Bound) (Eco Schools, 2019).</p>
Monitoring & Evaluation	<p>This step is essential because it progresses towards projected targets and goals can be tracked, changes to the program can be made if they are deemed appropriate and successful completion of targets implemented in the Action Plan can be celebrated and acknowledged (Eco Schools, 2019). Conducting monitoring and evaluation by the Eco Committee will allow the school to demonstrate progress made, and any findings will then be communicated to the community members and the National Operator (Eco Schools, 2019).</p> <p>See <b>Appendix 4</b> and <b>Appendix 5</b> which were created and provided by Eco-Schools</p>
Link to the Curriculum	<p>Students will develop knowledge and expand their skills and attitudes through real- life, engaging activities in the curriculum. They are empowered and encouraged to be change agents for the solving of environmental issues in school or the community (Eco Schools, 2019). Students from all grade levels and disciplines have opportunities to address environmental issues. By utilizing provided professional development tools and training on best practices, knowledge, and skills to help conduct sustainable development lessons and activities. These will include theme days, events, competitions, projects and celebrations (Eco Schools, 2019).</p>
Inform and Involve	<p>The school invites and involves community members (e.g., local council officers and members of local businesses, environmental organizations and volunteers) to Eco- School activities. (Eco Schools, 2019). Any events, activities, projects, and achievements are regularly highlighted and updated on the school website, social media (e.g., Facebook), school newsletter, etc. Students are also encouraged to write articles and features about Eco-School activities in the local press (e.g., newsletters, magazines, etc.), on websites and social media (e.g., Facebook) (Eco Schools, 2019).</p>
Produce an Eco-Code	<p>An Eco-Code is an easy-to-remember statement, slogan, song or poem that describes the school’s commitment to environmentally friendly actions. There</p>

is no fixed format for the Eco-Code and schools are free to choose their own every year (Eco Schools, 2019).

## 6. Activity Location

The following three primary schools have been identified as pilot schools for program implementation. They were chosen due to their proximity to the U.S. Embassy. See **Figure 2** for the map of project locations.

1. **Osnovna Škola (Primary School) Silvije Strahimir Kranjčević**  
Mehmed-Paše Sokolovića 2 Sarajevo, 71000 BiH <http://ossskranjcevic.edu.ba/>
2. **Osnovna Škola (Primary School)**  
Safvet-beg Bašagić Gimnazijska 1 Sarajevo, 71000 BiH <http://www.ossbb.edu.ba/>
3. **Osnovna Škola (Primary School) Edhem Mulabdić**  
Konak 1, Sarajevo, 71000 BiH <http://www.osem.edu.ba/>

## 7. Project Beneficiaries

Approximately 400 primary school aged children, ages 6-15 in the three targeted schools in downtown Sarajevo. The schools were identified due to their proximity to the U.S. Embassy, and this would also be an incentive for funding as it will make a positive impact on the neighborhood.

## 8. Project Schedule and Timeline

This proposal is requesting funding for two years, for all the three designated schools in order to successfully implement this initiative. See **Table 1**.

## 9. Project Partners

There are several strategic partners within highly respectable organizations that support the long-term development objective of the program. These include various civil society organizations, national

government institutions, and international organizations Eco-Schools. It is a priority of the new program to develop, build and strengthen more operational and strategic partnerships with organizations and institutions at local, national, regional and international levels in the pursuit of expanding the Eco-Schools program within the geographical focus area. See Table 2.

## 10. Key Personnel

All key personnel will be provided with training and instructions before conducting any program related activities. The training will be provided by Eco-Schools and is part of the budget.

Ongoing education and refresher courses will be implemented through workshops and e-training.

- Eco-Schools BiH National Operator- coordinates all program activities, including promotion and recruitment. Works directly with potential Eco-Schools and implementation support team as well as national steering committees and international coordinators.
  - Eco-Schools BiH Administrative Assistant- assists National coordinator with clerical, logistics and communications tasks.
- Eco-Schools BiH Implementation Support Team
  - Eco-Schools BiH Mentors- trained volunteers that assist the national coordinator
  - Eco-Schools BiH Ambassadors- trained volunteers who assist school coordinators
- Eco-Schools BiH School Coordinator- assists National coordinator and Implementation support team to ensure successful program implementation.

## 11. Anticipated outcomes of the project

As a result of this educational awareness program, the children of Sarajevo will have a better health outcome and the future for their community at large. The children will have a broader understanding of how the environment plays a part in their health and also the changes that need to be made in order to take a more proactive approach and ownership of their future. In order to measure the success of the



Eco-Schools program, the implementing organization will utilize already created Eco-Schools Preliminary and Post Evaluation assessment in order to assess the progress of the program. It will also help the school prepare for the evaluation and anticipated reward of being designated as an Eco-School and receiving the Green Flag Award (Eco Schools, 2019). Generally, once a school has registered it will take two years to be eligible for an on-site assessment before the school can be acknowledged for environmental excellence and official designation as an Eco-School. In order to meet this criterion, the following must be carried out (Eco Schools, 2019):

- Complete the registration process with Eco-Schools International
- Work on the program must be done for at least one school year
- All Seven Steps of the Eco-Schools Framework program must be completed
- Environmental Review for all 10 Main Themes must be completed
- Action Plan must be current as well as implemented that also includes any future targets

## 12. Project Sustainability

In order to guarantee project sustainability, the schools that successfully obtain the Green Flag Award, designating them as official Eco-Schools will have to go through a re-assessment process every two years post-approval. During these two years, the Eco-Schools Steering committee in each one of the three primary schools will continue to work with the National Operator to conduct the Eco-Schools Environmental Review annually in preparation for the onsite meeting and assessment. The low registration costs cover administration, support, resources, tools, mentoring and further development of the program for over two years. The main intent of this program is to yield small, achievable goals and set targets that will provide the schools with a long-term natured program by focusing on developing a more comprehensive environmental education policy within the schools to then be carried out throughout the entire school district of Canton of Sarajevo.

### 13. Background of Implementing Organization

One of the leading non-governmental non-party organizations at the state level was identified as the organization that will implement the Eco-Schools program in the three primary schools. Munja was established in 2001 from the Joint Youth Program- Open Society Fund Bosnia and Herzegovina-Soros Foundation. Since then, Munja has made impactful changes for the youth of Bosnia and Herzegovina by utilizing staff and appropriate resources, obtained partnerships and grants to further promote active and positive youth involvement in society (Munja, 2019). See **Figure 4**.

### 14. Previous U.S. Government Funding

The implementing organization did not report receiving any previous funding from the U.S. Government and had nothing to disclose in this section.

### 15. Detailed Budget (Itemize any amount larger than \$200)

Please see attached **Table 3** for a detailed budget.

### 16. Budget Narrative

The proposal requests \$49,907.25 to cover a two-year program, which includes registration fees for all three primary schools. The effort of the Eco-Schools National Operator (\$7000), Part-time administrative Assistants (\$3000) and Part-time school coordinators (\$3000) will be covered under the proposal. The biannual registration fee for one school is €600 (\$681.45), and the cost of an onsite assessment is €400 (\$454.30), plus travel costs and one-night accommodation if necessary. The onsite assessment fee is a fixed amount per Eco-Schools guidelines. Costs which will include educational materials, including software and equipment needed as well as bulletin board materials, project

equipment supplies, printing and distribution of handbooks, posters and brochures. Teacher training workshops and continuing education is also covered under the grant.

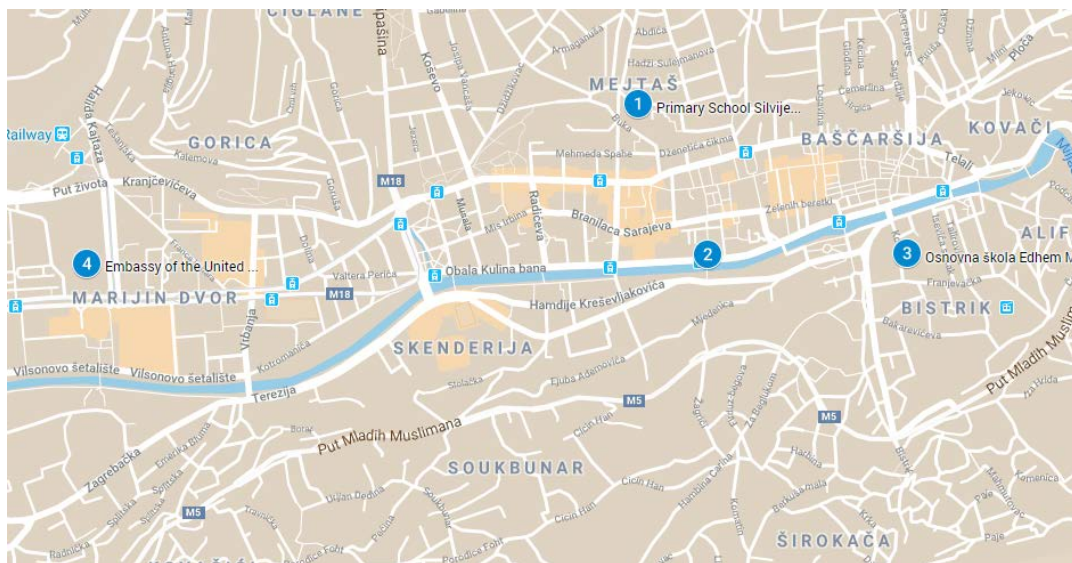
Figure 1. The Eco-Schools Seven Steps



Image retrieved from:

*Eco-Schools*. (2019). *Eco Schools- E-Handbook*. Retrieved 3 April 2019, from <https://www.ecoschools.global/ecoschools-ehandbook>

Figure 2. Project Activity Locations



Map image retrieved from:

<https://www.google.com/maps/d/edit?hl=en&mid=186pCYE3Brly5ymAjOQJ4eYpoghAtitP&ll=43.858787640070304%2C18.416293935040244&z=15>

<p>1. Osnovna Škola (Primary School) Silvije Strahimir Kranjčević Mehmed-Paše Sokolovića 2 Sarajevo, 71000 BiH 033/668/966 <a href="http://ossskranjcevic.edu.ba/">http://ossskranjcevic.edu.ba/</a></p>	<p>2. Osnovna Škola (Primary School) Safvet-beg Bašagić Gimnazijska 1 Sarajevo, 71000 BiH 033/205/923 <a href="http://www.ossbb.edu.ba/">http://www.ossbb.edu.ba/</a></p>
<p>3. Osnovna Škola (Primary School) Edhem Mulabdić Konak 1, Sarajevo, 71000 BiH 33/236/044 <a href="http://www.osem.edu.ba/">http://www.osem.edu.ba/</a></p>	<p>4. FOR REFERENCE Embassy of the United States Robert C. Frasure Street Sarajevo, 71000 Sarajevo 33/704/000 <a href="https://ba.usembassy.gov/">https://ba.usembassy.gov/</a></p>

Figure 3. Eco-Schools Program Participants

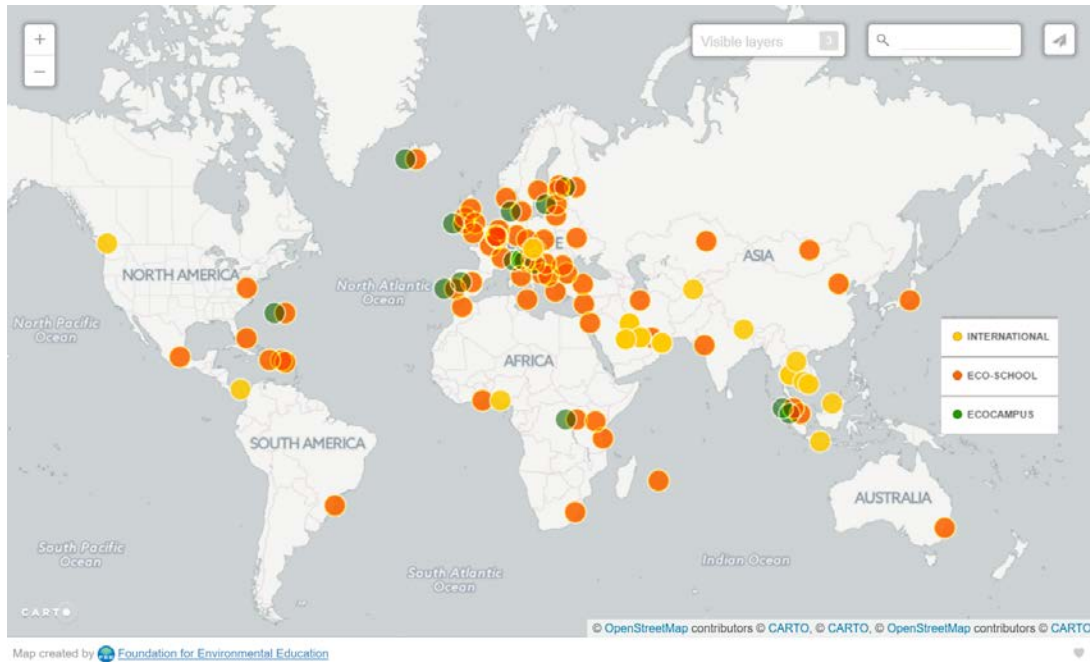


Image retrieved from:

*Eco Schools*. (2019). *Eco Schools- E-Handbook*. Retrieved 3 April 2019, from <https://www.ecoschools.global/ecoschools-e-handbook>

Figure 4- Implementing Organization accomplishments

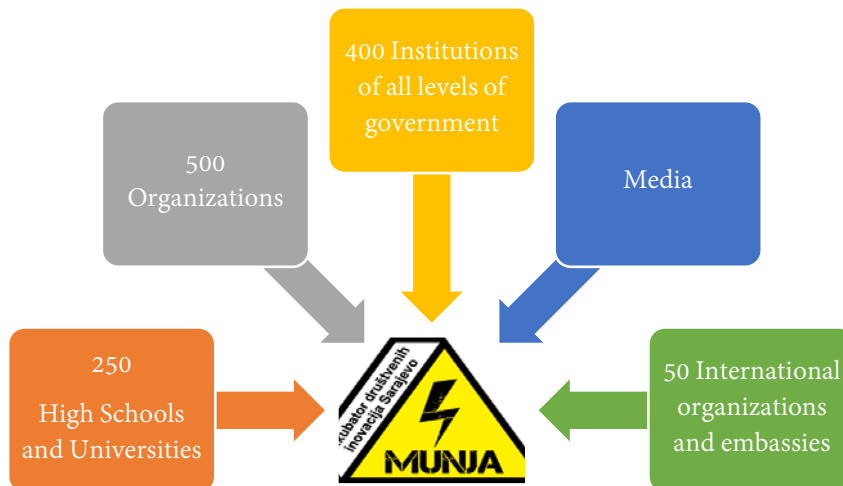






Table 1- Project Schedule and the timeline for 2019/2020

ACTIVITIES	CALENDAR												
	2019												
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Identify & recruit pilot schools													
Plan launch event (collaboration with partners)													
Hold launch events													
ECO-SCHOOLS 7- STEPS WORKSHOP FOR TEACHER &													
Confirm date with schools													
Plan workshop & prepare workshop material													
Carry out workshop													
ECO-SCHOOLS 7- STEPS WORKSHOP FOR STUDENTS													
Confirm date with schools													
Plan workshop & prepare workshop material													
Carry out workshop													
ECO-SCHOOLS THEME- BASED WORKSHOP													
Plan workshop & prepare workshop material													
Carry out workshop													
RECRUIT SECOND BATCH OF SCHOOLS													
Publicize and recruit schools													
Brief schools													2020
PREPARE FOR FIRST ROUND OF EVALUATION (Q1 20__)													
Recruit & train volunteer evaluators													
Build online award application system													

Table retrieved from:

*Eco -Schools*. (2019). *Eco Schools- E-Handbook*. Retrieved 3 April 2019, from <https://www.ecoschools.global/ecoschools-ehandbook>

Table 2 -Program Partners

	<p><b>EARTH CHARTER-</b> an international declaration of fundamental values and principles for building a just, sustainable, and peaceful global society (Earth Charter, 2019)</p>
	<p>UNEP- Eco-Schools is recognized among UNEP's preferred global model programmes for environmental education, management, sustainability and certification at the international level. UNEP is “the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment”(UNEP 2019).</p>
	<p>UNESCO- In 2010, FEE formalized its connection with UNESCO, so FEE is now an NGO Official Partner of UNESCO (consultative status). UNESCO is the “United Nations Educational, Scientific and Cultural Organization. It seeks to build peace through international cooperation in Education, the Sciences and Culture” (UNESCO, 2012).</p>
	<p>EAUC- the Foundation for Environmental Education has become a Strategic Partner of the EAUC, and Eco-Schools International is the key contact. They consider themselves to be the “alliance for sustainability leadership in education (EAUC, 2019).</p>
	<p><b>WRIGLEY COMPANY FOUNDATION-</b> the Eco-Schools program has been running the Litter Less Campaign sponsored by Wrigley since before 2011. Schools from 22 Eco-Schools countries are involved. Since it was founded, the foundation has awarded “Over 55 million USD with a focus on oral health and sustainable local initiatives, that continue to improve communities around the world (Wrigley, 2019).</p>
	<p><b>TOYOTA FUND FOR EUROPE-</b> Eco-Schools has been collaborating with Toyota since 2005. Currently, 15 countries are running a Biodiversity Campaign which is sponsored by Toyota. According to their website they “provide financial and practical contributions to projects that seek to improve the lives and sustainability of our communities “(Toyota Fund for Europe, 2019).</p>





	<p><b>ALCOA FOUNDATION</b>-Thanks to the generous support of Alcoa Foundation, Foundation for Environmental Education’s (FEE) Eco-Schools program was able to launch a global K-12 environmental literacy initiative focused on Green STEM. Additionally, their mission is to “invests where Alcoa has a presence, partnering with communities to address local needs in a sustainable manner. With our nonprofit partners, we contribute to environmental excellence, economic success and social responsibility around the globe”(ALCOA, 2019).</p>
	<p><b>THE GOALS.ORG</b>- TheGoals.org is a platform which can be accessed on any phone, tablet or computer. Through it, all the Sustainable Development Goals (SDGs) will be available as an educational resource for FEE programmes. In partnership with the UNDP, they work on “finding practical solutions to challenges like poverty, hunger, sickness, illiteracy, climate change, and species loss (The Goals, 2019).</p>

Table retrieved from: *Eco Schools*. (2019). *Eco Schools- E-Handbook*. Retrieved 3 April 2019, from <https://www.ecoschools.global/ecoschools-ehandbook>

Table 3 –Detailed Budget

BUDGET ITEM	QUANTITY	COST PER UNIT	TOTAL
<b>PERSONNEL</b>			
Eco-Schools BiH National Operator	1	\$10,000.00	\$10,000.00
Part-time administrative Assistant	3	\$2,500.00	\$7,500.00
Part-time school coordinator	3	\$2,500.00	\$7,500.00
<b>PROJECT EQUIPMENT &amp; SUPPLIES</b>			
Print Materials, Handbooks, Brochures, Educational Materials			\$12,000
<b>HARDWARE and SOFTWARE</b>			
Equipment and Maintenance (Laptops, Tablets, printers, Microsoft Office)			\$3,000.00
<b>FEES AND ADDITIONAL COSTS</b>			
Registration fee	3	\$681.45	\$2,044.35
Onsite Assessment	3	\$454.30	\$1,362.90
Teacher Workshops, continuing education, training	3	\$1,500.00	\$4,500.00
<b>MISCELLANEOUS EXPENSES</b>			
Travel, lodging, meetings			\$2,000.00
			<b>TOTAL COST:</b>
			<b>49,907.25</b>

## Appendix 1. Eco-Schools USA “The 5E Instructional Model”

Retrieved from Eco Schools (2019). Positive Actions for the Sustainable Development Goals

Adapted from NASA’s 5E Overview: “The 5E instructional model”



The 5E instructional model is a constructivist set of teaching stages that allow teachers to **Engage, Explore, Explain, Extend, and Evaluate** students. This model reflects best practices in student learning and can be utilized in any subject area.

### Engage

During this first stage you want to capture student’s interest – similar to the hook of a book or the first line in a short story and get them personally involved in the lesson. Here students will make connections to prior knowledge as you lay the foundation for further learning.

### Explore

Now that you have their attention it is time to allow them to explore the content or concept, thus building new learning based on their understanding. Acting as the facilitator, the teacher provides guidance as students work in groups sharing and communicating their common experiences. Emphasis is placed on questioning, data collection, and analysis, as well as critical thinking.

### Explain

The purpose of the explained stage is to provide students with an opportunity to communicate what they have learned so far and figure out what it means. Explain is the stage at which learners begin to communicate what they have learned. The language motivates sequencing events into a logical format. Communication occurs between peers, with the facilitator, and through the reflective process.

### Elaborate

This stage allows students to use their new knowledge and explore their implications. Students are now ready to elaborate upon this new learning and apply its new situations and other related concepts.

### Evaluate

Evaluation serves both the teacher and the students as a tool to see how much learning and understanding has taken place. Evaluations can be both formative in nature, small snapshots along the way and summative, a culminating look at overall knowledge and understanding. Types of assessments include utilizing, rubrics, teacher observations, student interviews, portfolios, and problem and project-based learning products.

Appendix 2. Eco-Schools USA Sample Lesson Plan Curriculum Plan

Retrieved from Eco Schools (2019). Positive Actions for the Sustainable Development Goals



LESSON 1: A GREEN REVOLUTION -An Introduction to Eco-Schools USA

Greening the school building, grounds, curriculum, and student experience; students are introduced to the Eco-Schools framework and pathways to sustainability. Utilizing our environmental audit students will begin the process necessary to guide their campus community towards efficiency and sustainability.

LESSON 2: LIGHTS, CAMERA, ACTION-Conducting and Energy Audit

The nation's school districts spend more than \$7.5 billion a year on energy. Schools are the largest energy consumer in many municipalities. But up to 30 percent of that energy is used inefficiently or unnecessarily. Students dive into the audit process by assessing their school's energy efficiency. Actively engaged, students will collect and analyze data, and develop action plans in an effort to raise energy awareness and reduce carbon emissions.

LESSON 3: AN ENERGY MIX-Renewable and Nonrenewable Resources

Our natural resources contribute significantly to society's needs and wants. Students will learn the division of our natural resources into renewable and nonrenewable categories, determine the reasoning behind their placement within each group, and understand what these natural resources are used for in our everyday life

LESSON 4: BY AIR, LAND, OR SEA-The Formation and Location of Our Natural Resources

As students learn about the formation process regarding Earth's natural resources students will also make observations as to their locations within the Earth system; is there an observable pattern?

LESSON 5: IT'S ALL IN THE NAME-Climate and Weather

Students commonly use weather and climate interchangeably. In fact there is a difference. Students will investigate the meaning of each word via online portals and distinguish between their meanings. This lesson will provide a basis for understanding in later lessons.

LESSON 6: HOT, HOTTER, HOTTEST-Extreme Weather's Impact on Our Resources

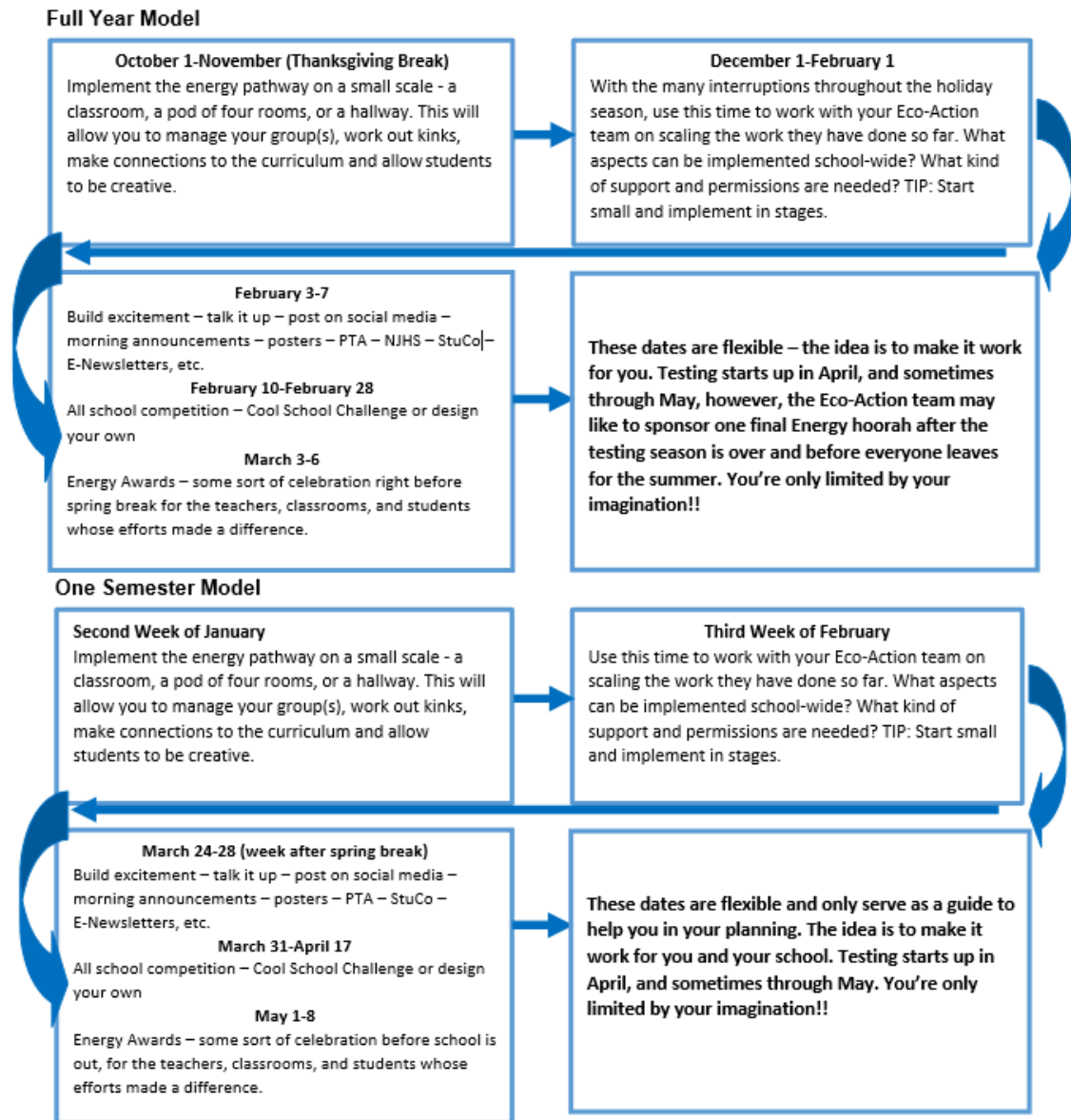
Scientists project global warming will bring more uncertainty, potentially causing both more extremely dry periods and more heavy rainfall events. These extreme events will exacerbate the problems we face with water management and protection in the U.S. Students will analyze national and state drought maps and investigate how these conditions impact the national, state, and local community.

LESSON 7: WHY ALL THE WIGGLING ON THE WAY UP?-CO<sub>2</sub> in the Atmosphere Students will have the opportunity to examine the CO<sub>2</sub> data from Mauna Loa, Alaska, and their home location. They will use this data to explore how the seasonal growth and die-off of vegetation in temperate and colder regions influences CO<sub>2</sub> levels.

## Appendix 3. Timeline for Implementation



Retrieved from Eco Schools (2019). Positive Actions for the Sustainable Development Goals



## Appendix 4- Eco-Schools Primary Environmental Review

### Eco-Schools Primary Environmental Review

*This review is a suggested format, designed to be an audit tool for the Eco-Committee to use in your school. The questions are labelled so that you can tell which will require investigation by the pupils, which they will need to ask a member of staff about and which may take a bit of research.*

*The Eco-Schools program does not require that you complete all the suggestions in this document. It is designed to be a stimulus that you can use to assess what happens in your school at the start of the program and as a baseline audit each year. You may not know all the answers to all the questions in each section but if you choose to work further on a topic the answers should be found by the next time you complete the review. It also might not include every possible idea that you could carry out, so please don't take the questions as exhaustive.*






*The questions will help Eco-Committee members to think of actions that can be undertaken in the school to improve the environment and the school's impact on our planet. The 3 chosen topics (1 major and 2 minor) for the year should then be put into an Action Plan.*

*Take the time to investigate every year as a lot can change over 12 months.*

Date completed: \_\_\_\_\_

Completed by: \_\_\_\_\_





### Key

	These are suggested links to the UN Sustainable Development Goals (SDGs). For more ideas and information visit our website.
	Pupils can find the answers themselves by looking carefully around the school.
	Pupils may need to ask an adult to find the answers to these questions.
	A little bit more investigation is required, maybe a survey or asking questions to other pupils.
	This is a way of <b>measuring</b> the impact that you are having on the environment so you can show how much you are improving. This is an important part of being an Eco-School.






### Litter

Inside the school:






Is the inside of the school free from litter?		Yes	No
Are there enough bins inside the school?		Yes	No
Are the bins in the right places?		Yes	No
Are the bins emptied often enough?		Yes	No




### School grounds:

Are the school grounds free from litter?		Yes	No
Are there enough bins around the school grounds?		Yes	No
Are the bins in the right places?		Yes	No
Are the bins suitable? E.g. does the litter blow out or are they too small/big?		Yes	No
If litter is present, is it coming from children in school or from outside the school grounds?		School	Outside

### Outside the school:

Is your community generally litter free?		Yes	No
Are there enough bins in the community?		Yes	No
Does the school help to keep the community clean?		Yes	No

### General:

Does the school have a clear policy on litter?		Yes	No
Do all pupils know the problems caused to the environment and wildlife by dropping litter?		Yes	No
Do you keep a record of what, where, when and amount of litter found?		Yes	No

### Litter action points/comments:

Please note Eco-Schools consider balloon releases a form of mass littering. Having a balloon release at school may put your Green Flag status in doubt. Please consult the litter topic section of the Eco-Schools website for more information.



### Waste

#### Reduce:




Does the school use email to send newsletters?		Yes	No
If you send letters, is it one per family?		Yes	No
Do teachers photocopy back to back when they can?		Yes	No
Do pupils bring their packed lunch in reusable containers?		Yes	No

#### Reuse:




Is there scrap paper trays in the classrooms?		Yes	No
Are the toilet paper and hand towels made from recycled paper?		Yes	No
Does the office and photocopier use recycled paper?		Yes	No
Do you reuse any packaging in the classrooms (e.g. junk models)?		Yes	No
Do you have a swap shop for school uniform/games/ books/DVDs?		Yes	No

#### Recycle:




Which of the following do you recycle? (circle or highlight)						
Paper	Plastic	Cans	Cardboard	Clothing/Material		
Batteries	Phones	Stamps	Glasses	Food	Ink Cartridges	
Do you have a compost bin/area that is in use?						
					Yes	No

Do you use your compost on the school grounds?		Yes	No
Are there enough recycling bins around the school?		Yes	No
Do the recycling bins always have the right things in them?		Yes	No




**Information:**

Do you measure how much waste you are preventing from going to landfill sites?		Yes	No
If so, does everyone in the school know how much waste you are saving from landfill?		Yes	No
Do pupils in the school know the issues of landfill?		Yes	No


**Waste action points/comments:****Energy****Gas / Oil:**

Are windows and doors always kept shut when the heating is on?		Yes	No
Does each classroom have a thermometer so you can try and keep the temperature at 18 degrees centigrade?		Yes	No
Is there insulation in the roof of the school building to reduce heat loss?		Yes	No



**Electricity:**


Are lights <b>always</b> turned off in empty rooms?		Yes	No
Are lights turned off as soon as there is enough daylight?		Yes	No
Are projectors/whiteboards, computers and monitors switched off when not in use?		Yes	No

**General:**

Do pupils understand how our energy is generated, how it effects the environment, and the benefits of renewable energy?		Yes	No
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




Do pupils or an adult keep track of the electricity readings?		Yes	No
Has the school investigated possible sources of renewable energy?		Yes	No

What is your Display Energy Certificate (DEC) score? You should be able to find it in your school or <a href="#">online</a> . It's a really useful document to track your school's energy efficiency between years.			
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### Energy action points/comments:

#### Water












Is the school free from dripping taps?		Yes	No
Do pupils always turn the taps off fully?		Yes	No
Do you have water saving devices in the toilet cisterns? <i>e.g. a Hippo bag or bottles filled with water</i>		Yes	No
If you have push taps, do they dispense the right amount of water at the right speed?		Yes	No
Do you have a water butt to collect rainwater for watering plants?		Yes	No
Is rainwater collected and used for anything else around the school? <i>e.g. flushing toilets or maintaining pond levels</i>		Yes	No
Do you learn about water issues in other countries?		Yes	No
Is the school involved in any river or coast conservation projects?		Yes	No
Are pupils or an adult able to take water readings from the meter or from the utility bill? (NI Water may be able to help you with this)		Yes	No

### Water action points/comments:

#### Transport













Do most pupils walk, cycle or catch the bus to school?		Yes	No
Do you survey how people travel to school?		Yes	No
Is there somewhere dry and safe to store bikes?		Yes	No
Does the school provide cycle instruction for pupils?		Yes	No
Do you hold regular walk or cycle to school events/days?		Yes	No
Is it safe to walk or cycle to school?		Yes	No
Do cars park away from the entrance to the school?		Yes	No
Do pupils understand the environmental benefits of sustainable transport?		Yes	No
Have you taken part in a sustainable transport challenge i.e. the Translink Travel Challenge?		Yes	No

**Transport action points/comments:**

**Outdoor Learning**














Are there games painted on the playground?		Yes	No
Are there murals, mosaics, sculptures or other artwork?		Yes	No
Are there plenty of things for climbing and balancing on, jumping and swinging from?		Yes	No
Are there quiet places to sit and talk?		Yes	No
Do you grow your own vegetables or fruit in the school grounds?		Yes	No
Do you have an outdoor classroom/log circle area?		Yes	No
Do you have friendship stops or buddy benches?		Yes	No

Are any lessons held in the school grounds?		Yes	No
Do you keep count of how many lessons are held in the school grounds?		Yes	No
Do all pupils have the opportunity to suggest what changes or new things they would like in the school grounds?		Yes	No

### Outdoor Learning action points/comments:

#### Biodiversity



Does the school have trees in the grounds?		Yes	No
Does the school have more hedging than fencing around the perimeter?		Yes	No
Are some of your trees and hedging native species?		Yes	No
Does your school have a pond or marshy area?		Yes	No
Does your pond have an exit route for frogs, toads, newts and hedgehogs?		Yes	No
Does your school have a wildflower meadow?		Yes	No
Does your school have areas of long/undisturbed vegetation linking habitats together?		Yes	No
Does your school have any of the following aids to biodiversity? Please circle/highlight the ones that you have:		Yes	No
<p><i>Log pile      Stone pile      Minibeast hotel      Scented flowers/herbs</i></p> <p><i>Butterfly bushes      Bird feeders      Water for birds</i></p> <p><i>Bird boxes      Bat boxes      Swift houses      Bee homes</i></p> <p><i>Hedgehog House      Hedgehog passages (i.e. under/through fencing)</i></p>			
Are the school grounds free from herbicides and pesticides?		Yes	No
Do you always use peat-free compost?		Yes	No
Have you carried out a biodiversity survey of your school grounds?		Yes	No

## Biodiversity action points/comments:





Global Perspective

Does your school have an active link with a school in another country?		Yes	No
Do the teachers have Fair Trade tea and coffee in the staffroom?		Yes	No
Are there any other Fair Trade products used in school? (fruit juice, footballs, bananas)		Yes	No
Do pupils recognise the Fair Trade symbol and understand its meaning?		Yes	No
Do you have any visitors from the local community/Eco-Schools delivery partners to talk about local or global issues?		Yes	No
Are pupils aware of their Rights and Responsibilities (linked to the UN convention on the Rights of the Child)?		Yes	No
Do you have any whole school awareness days to support people in other countries/situations?		Yes	No
Do you ever raise money or collect clothing/toys for charities working in developing countries?		Yes	No
Are pupils aware of, or are lessons linked to, the UN Sustainable Development Goals?		Yes	No
Do pupils understand that choices/behaviours in the developed world can effect people in the developing world in an unfair way?		Yes	No

## Global Perspective action points/comments:

Healthy Living








Do you have a fruit tuck shop that is run by pupils?		Yes	No
Are pupils encouraged to bring fruit for break?		Yes	No
Do you measure how many pupils bring a healthy break/lunch to school?		Yes	No
Do pupils have the opportunity to suggest what healthy choices they would like to include in the dinner/canteen menu?		Yes	No
Is there free drinking water available to pupils all day?		Yes	No
Do all pupils get to experience growing and then eating their own food at school?		Yes	No

Is there a fitness programme established in the school?		Yes	No
Does the school invite outside health agencies to come and talk to pupils about their health?		Yes	No
Does the school have an anti-bullying policy?		Yes	No
Does the school run any mindfulness and meditation lessons?		Yes	No

Healthy Living action points/comments:

Climate Change



Do pupils understand the difference between weather and climate?		Yes	No
Is there an understanding of the contributing factors to climate change i.e. the use of fossil fuels and the release of greenhouse gases into the atmosphere?		Yes	No
Do some classes study the effects of climate change on different people and wildlife around the world?		Yes	No
Do pupils understand their carbon footprint and know ways to reduce it?		Yes	No
Which of these things do you do to reduce the school's carbon footprint: Circle all that you are doing:  <i>Walk/cycle/take the bus to school      Recycle all the waste you can</i>  <i>Buy local food      Carpool to school      Save energy</i>  <i>Plant trees      Use less plastic and paper      Save water</i>  <i>Offset air travel through the Global Forest Fund</i>		Yes	No
Do you measure any of the above actions you have taken?		Yes	No
If yes, have you used an online carbon calculator to see how much carbon you are saving? <i>Hint one is available in the Eco-Schools Resource Library.</i>		Yes	No

Climate Change action points/comments:

## Appendix 5- Eco-Schools Post Primary Environmental Review

### Eco-Schools Post Primary Environmental Review

*This review is a suggested format, designed to be an audit tool for the Eco-Committee to use in your school. The questions are labelled so that you can tell which will require investigation by the pupils, which they will need to ask a member of staff about and which may take a bit of research.*

*The Eco-Schools programme does not require that you complete all the suggestions in this document. It is designed to be a stimulus that you can use to assess what happens in your school at the start of the programme and as a baseline audit each year.*

*You may not know all the answers to all the questions in each section but if you chose to work further on a topic the answers should be found by the next time you complete the review. It also might not include every possible idea that you could carry out, so please don't take the questions as exhaustive.*






*The questions will help Eco-Committee members to think of actions that can be undertaken in the school to improve the environment and the school's impact on our planet. The 3 chosen topics (1 major and 2 minor) for the year should then be put into an Action Plan.*

*Take the time to investigate every year as a lot can change over 12 months.*

Date completed: \_\_\_\_\_

Completed by: \_\_\_\_\_





### Key

	<p>These are suggested links to the UN Sustainable Development Goals (SDGs). For more ideas and information visit <a href="#">our website</a>.</p>
	<p>Pupils can find the answers themselves by looking carefully around the school.</p>
	<p>Pupils may need to ask an adult to find the answers to these questions.</p>
	<p>A little bit more investigation is required, maybe a survey or asking questions to other pupils.</p>
	<p>This is a way of <b>measuring</b> the impact that you are having on the environment so you can show how much you are improving. This is an important part of being an Eco-School.</p>






### Litter






### Inside the school:

Is the inside of the school free from litter?		Yes	No
Are there enough bins inside the school?		Yes	No
Are the bins in the right places?		Yes	No
Are the bins emptied often enough?		Yes	No





### School grounds:

Are the school grounds free from litter?		Yes	No
Are there enough bins around the school grounds?		Yes	No
Are the bins in the right places?		Yes	No
Are the bins suitable? E.g. does the litter blow out or are they too small/big?		Yes	No
If litter is present, is it coming from children in school or from outside the school grounds?		School	Outside

### Outside the school:

Is your community generally litter free?		Yes	No
Are there enough bins in the community?		Yes	No
Does the school help to keep the community clean?		Yes	No

### General:

Does the school have a clear policy on litter?		Yes	No
Do all pupils know the problems caused to the environment and wildlife by dropping litter?		Yes	No
Have you run a pupil led anti-litter campaign at school?		Yes	No
Do you keep a record of what, where, when and amount of litter found?		Yes	No

## Litter action points/comments:

**Please note Eco-Schools consider balloon releases a form of mass littering. Having a balloon release at school may put your Green Flag status in doubt. Please consult the litter topic section of the Eco-Schools website for more information.**

Waste

## Reduce:








Does the school use email to send newsletters?		Yes	No
Does your school control the use of resources such as paper?		Yes	No
If you send letters, is it one per family?		Yes	No
Do teachers photocopy back to back when they can?		Yes	No
Do pupils bring their packed lunch in reusable containers?		Yes	No
Do pupils use reusable lunch boxes and water bottles?		Yes	No
Are there fresh water fountains/taps available to refill water bottles?		Yes	No

## Reuse:





Is there scrap paper trays in the classrooms?		Yes	No
Is paper <b>always</b> used on both sides before it is recycled?		Yes	No
Are the toilet paper and hand towels made from recycled paper?		Yes	No
Does the office and photocopier use recycled paper?		Yes	No
Do you reuse any materials in the classrooms (e.g. for art/technology models)?		Yes	No
Do you have a swap shop for school uniform/games/ books/DVDs?		Yes	No

## Recycle:






Which of the following do you recycle? (circle or highlight)				
<i>Paper</i>	<i>Plastic</i>	<i>Cans</i>	<i>Cardboard</i>	<i>Clothing/Material</i>
<i>Batteries</i>	<i>Phones</i>	<i>Stamps</i>	<i>Glasses</i>	<i>Food</i> <i>Ink Cartridges</i>
Do you have a compost bin/area that is in use?			Yes	No
Do you use your compost on the school grounds?			Yes	No
Are there enough recycling bins around the school?			Yes	No
Do the recycling bins always have the right things in them?			Yes	No


**Information:**




Do you measure how much waste you are preventing from going to landfill sites?		Yes	No
If so, does everyone in the school know how much waste you are saving from landfill?		Yes	No
Have pupils visited a local waste/recycling facility?		Yes	No
Do pupils in the school know the issues of landfill?		Yes	No

**Waste action points/comments:****Energy****Gas / Oil:**




Are windows and doors always kept shut when the heating is on?		Yes	No
Does each classroom have a thermometer so you can try and keep the temperature at 18 degrees centigrade?		Yes	No
Is there insulation in the roof of the school building to reduce heat loss?		Yes	No


**Electricity:**

Are lights <b>always</b> turned off in empty rooms?		Yes	No
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

Does the school use energy efficient bulbs?		Yes	No
Are lights turned off as soon as there is enough daylight?		Yes	No
Are projectors/whiteboards, computers and monitors switched off when not in use?		Yes	No




**General:**

Do pupils understand how our energy is generated, how it effects the environment, and the benefits of renewable energy?		Yes	No
Do pupils or an adult keep track of the electricity readings?		Yes	No
Has the school investigated possible sources of renewable energy?		Yes	No

What is your Display Energy Certificate (DEC) score? You should be able to find it in your school or online. It's a really useful document to track your school's energy efficiency between years.			
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**Energy action points/comments:****Water**











Is the school free from dripping taps?		Yes	No
Do pupils always turn the taps off fully?		Yes	No
Do you have water saving devices in the toilet cisterns? <i>e.g. a Hippo bag or bottles filled with water</i>		Yes	No
If you have push taps, do they dispense the right amount of water at the right speed?		Yes	No
Do you have a water butt to collect rainwater for watering plants?		Yes	No
Is rainwater collected and used for anything else around the school? <i>e.g. flushing toilets or maintaining pond levels</i>		Yes	No
Have pupils led a campaign about saving water?		Yes	No

Do you learn about water issues in other countries?		Yes	No
Is the school involved in any river or coast conservation projects?		Yes	No
Are pupils or an adult able to take water readings from the meter or from the utility bill? (Water may be able to help you with this)		Yes	No

### Water action points/comments:

#### Transport














Do most pupils walk, cycle or catch the bus to school?		Yes	No
Do you survey how people travel to school?		Yes	No
Is there somewhere dry and safe to store bikes?		Yes	No
Does the school provide cycle instruction/maintenance workshops for pupils?		Yes	No
Do you hold regular walk or cycle to school events/days?		Yes	No
Does the school have a network of safe routes to walk or cycle to school worked out?		Yes	No
Do cars park away from the entrance to the school?		Yes	No
Do pupils understand the environmental benefits of sustainable transport?		Yes	No
Does the school have a travel plan?		Yes	No
Have you taken part in a sustainable transport challenge i.e. the Translink Travel Challenge?		Yes	No

### Transport action points/comments:

#### Outdoor Learning










Are walking or sports areas available to pupils at break and lunch time?		Yes	No
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Are the school grounds an inviting and appealing place to spend time? If no, list some possible improvements below.		Yes	No
Is there a variety of resources to use for learning outside the classroom i.e. a pond area, woodland area, greenhouse, vegetable garden?		Yes	No
Are there quiet places to sit and talk/read?		Yes	No
Do you grow your own vegetables or fruit in the school grounds?		Yes	No
Do you feel pupils and teachers are aware of the cognitive benefits of learning outdoors?		Yes	No
Do classes go beyond the school gates for learning i.e. field trips and residential trips?		Yes	No
Are any lessons held in the school grounds?		Yes	No
Do you keep count of how many lessons are held in the school grounds?		Yes	No
Do all pupils have the opportunity to suggest what changes or new things they would like in the school grounds?		Yes	No
Have pupils looked into the heritage of the school grounds?		Yes	No

#### Outdoor Learning action points/comments:

#### Biodiversity





Does the school have trees in the grounds?		Yes	No
Does the school have more hedging than fencing around the parameter?		Yes	No
Are some of your trees and hedging native species?		Yes	No
Does your school have a pond or marshy area?		Yes	No
Does your pond have an exit route for frogs, toads, newts and hedgehogs?		Yes	No
Does your school have a wildflower meadow?		Yes	No
Does your school have areas of long/undisturbed vegetation linking habitats together?		Yes	No

Does your school have any of the following aids to biodiversity? Please circle/highlight the ones that you have:		Yes	No
<i>Log pile      Stone pile      Minibeast hotel      Scented flowers/herbs</i>			
<i>Butterfly bushes      Bird feeders      Water for birds</i>			
<i>Bird boxes      Bat boxes      Swift houses      Bee homes</i>			
<i>Hedgehog House      Hedgehog passages (i.e. under/through fencing)</i>			
Are the school grounds free from herbicides and pesticides?		Yes	No
Do you always use peat-free compost?		Yes	No
Have you carried out a biodiversity survey of your school grounds?		Yes	No

### Biodiversity action points/comments:

#### Global Perspective



Does your school have an active link with a school in another country?		Yes	No
Do the teachers have Fair Trade tea and coffee in the staffroom?		Yes	No
Are there any other Fair Trade products used in school? (fruit juice, footballs, bananas)		Yes	No
Do pupils recognise the Fair Trade symbol and understand its meaning?		Yes	No
Do you have any visitors from the local community/Eco-Schools delivery partners to talk about local or global issues?		Yes	No
Are pupils aware of their Rights and Responsibilities (linked to the UN convention on the Rights of the Child)?		Yes	No
Do you have any whole school awareness days to support people in other countries/situations?		Yes	No
Do you ever raise money or collect clothing/toys for charities working in developing countries?		Yes	No
Are pupils aware of, or are lessons linked to, the UN Sustainable Development Goals?		Yes	No
Do pupils understand that choices/behaviours in the developed world can effect people in the developing world in an unfair way?		Yes	No

## Global Perspective action points/comments:







Healthy Living

Do you have a fruit/healthy tuck shop?		Yes	No
Do any vending machines in the school offer healthy options?		Yes	No
Are pupils encouraged to bring fruit for break?		Yes	No
Do you measure how many pupils chose a healthy break/lunch option?		Yes	No
Is salad/vegetables offered/a popular option in the canteen at lunch time?		Yes	No
Do pupils have the opportunity to suggest what healthy choices they would like to include in the dinner/canteen menu?		Yes	No
Is there free drinking water available to pupils all day?		Yes	No
Do pupils get to experience growing and then eating their own food at school?		Yes	No
Is there an 'off curriculum' fitness programme established in the school?		Yes	No
Does the school invite outside health agencies to come and talk to pupils about their physical/mental health?		Yes	No
Does the school run digital detox campaigns?		Yes	No
Does the school have an anti-bullying policy?		Yes	No
Does the school run any mindfulness and meditation lessons?		Yes	No

## Healthy Living action points/comments:

Climate Change

Do pupils understand the difference between weather and climate?		Yes	No
Is there an understanding of the contributing factors to climate change i.e. the use of fossil fuels and the release of greenhouse gases into the atmosphere?		Yes	No

Do some subjects study the effects of climate change on different people and wildlife around the world?		Yes	No
Do pupils understand their carbon footprint and know ways to reduce it?		Yes	No
Which of these things do you do to reduce the school's carbon footprint: Circle all that you are doing:  <i>Walk/cycle/take the bus to school</i> <i>Recycle all the waste you can</i>  <i>Buy local food</i> <i>Carpool to school</i> <i>Save energy</i>  <i>Offset air travel through the Global Forest Fund</i> <i>Plant trees</i>  <i>Use less plastic and paper</i> <i>Save water</i>		Yes	No
Do you measure any of the above actions you have taken?		Yes	No
If yes, have you used an online carbon calculator to see how much carbon you are saving? <i>Hint one is available in the Eco-Schools Resource Library.</i>		Yes	No
Have pupils lobbied their local politicians on the issues of climate change and local solutions?		Yes	No

**Climate Change action points/comments:**

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