

Raising Awareness for Pollution Prevention Measuring Individual Pollution Indicators

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ABSTRACT

The research study aims to assess and raise awareness about pollution at the level of an individual, which would contribute to that individual being more careful and aware of the pollution he does and thus reduce the level of pollution in the future. As part of the project, software for measuring and analyzing the individual environmental footprint will be developed and the target will be the younger generation, students and high school students. All those that have been measured with a smaller environmental footprint and who passed the test and have been trained as part of project seminars and have been appointed ambassadors for environmental protection will receive a certificate. As part of the project, a seminar has been organized for education and to raise awareness about pollution. After all, all the ambassadors have been trained and went to other high schools and there they will hold in the presence of their mentors and the lectures about their experiences and awareness-raising and what are the benefits and show them how to use the online calculator that has been developed as part of the project. Research on the ecological footprint has been realized as an indicator of pollution and preservation of the environment. The project examines the current situation in issues related to energy management (increased energy use, limited reserves of raw materials, global warming, etc.). The findings discuss the results and recommendations are provided.

Keywords: ecology; pollution; biodiversity; information system; energy management; raising public awareness

INTRODUCTION

Nature can renew its resources only at a certain pace. Humans consume more renewable resources than nature can regenerate. An urgent transition to the sustainability of natural resources and bio-capacity is therefore needed. Assessing the individual environmental impact on a personal level through the ecological footprint indicator is also essential for sustainability. The purpose of this research is to prove that the current way of life is not sustainable. Pollution is defined as the introduction into the environment of substances harmful to humans and other living organisms. Pollutants are harmful solids, liquids, or gases produced in higher than usual concentrations that reduce the quality of our environment. Human activities have an adverse effect on the environment by polluting the water we drink, the air we breathe, and the soil in which plants grow. Although the industrial revolution was a great success in terms of technology, society, and the provision of multiple services, it also introduced the production of huge quantities of pollutants emitted into the air that are harmful to human health. Without any doubt, global environmental pollution is considered an international public health issue with multiple facets. Social, economic, and legislative concerns and lifestyle habits are related to this major problem.

Urbanization and industrialization are reaching unprecedented and upsetting proportions worldwide in our era. Human activity has a major effect on the environment. The ecosystems and the planet as a whole have changed dramatically as a result of efforts to support the growing population. Humanity is more than ever threatened by its actions because the natural resources are being depleted at an alarming rate, while human activity is considered the number one cause of global climate change which is the greatest challenge the human race has ever faced in history. And the scientists fear that the outcome cannot be good without immediate actions to reduce the human impact on the environment.

LITERATURE REVIEW

The review used a number of systematic review methods, including identifying a question, developing a well-defined search strategy, using pre-defined select criteria, and completing data extraction sheets for each study [12]. The main advantage of this approach is that it seeks to implement the standard strategy that can be easily be repeatable from other researchers in their analyses and draw the same conclusions. The effects of environmental pollution on humans are mainly physical, but can also turn into neuro-affectations in the long term.

The best-known troubles to us are respiratory, in the form of allergies, asthma, irritation of the eyes and nasal passages, or other forms of respiratory infections. Notably, these well-spread affections can be observed when air pollution is high in cities, when the weather gets hot, for instance. In developing countries (7), the problem is more serious due to overpopulation and uncontrolled urbanization along with the development of industrialization. This leads to poor air quality, especially in countries with social disparities and a lack of information on sustainable management of the environment. The use of fuels such as wood fuel or solid fuel for domestic needs due to low incomes exposes people to bad-quality, polluted air at home. It is of note that three billion people around the world are using the above sources of energy for their daily heating and cooking needs (8). In developing countries, the women of the household seem to carry the highest risk for disease development due to their longer duration of exposure to indoor air pollution (8, 9). Due to its fast industrial development and overpopulation, China is one of the Asian countries confronting serious air pollution problems (10, 11). The lung cancer mortality observed in China is associated with fine particles (12). As stated already, long-term exposure is associated with deleterious effects on the cardiovascular system (3, 5). However, it is interesting to note that cardiovascular diseases have mostly been observed in developed and high-income countries rather than in the developing low-income countries exposed highly to air pollution (13). Extreme air pollution is recorded in India, where the air quality reaches hazardous levels. New Delhi is one of the more polluted cities in India. Flights in and out of New Delhi International Airport are often canceled due to the reduced visibility associated with air pollution. Pollution is occurring both in urban and rural areas in India due to the fast industrialization, urbanization, and rise in the use of motorcycle transportation. Nevertheless, biomass combustion associated with heating and cooking needs and practices is a major source of household air pollution in India and in Nepal (14, 15). There is spatial heterogeneity in India, as areas with diverse climatological conditions and population and education levels generate different indoor air qualities, with higher PM2.5 observed in North

Indian states (557–601 $\mu\text{g}/\text{m}^3$) compared to the Southern States (183–214 $\mu\text{g}/\text{m}^3$) (16, 17). The cold climate of the North Indian areas may be the main reason for this, as longer periods at home and more heating are necessary compared to in the tropical climate of Southern India. Household air pollution in India is associated with major health effects, especially in women and young children, who stay indoors for longer periods. Chronic obstructive respiratory disease (CORD) and lung cancer are mostly observed in women, while acute lower respiratory disease is seen in young children under 5 years of age.

However, as long as development reduces the negative impact of human activities on the environment by reducing carbon dioxide emissions, waste, consumption of natural resources, creating a retreat for wildlife, or any other way, it can be defined as sustainable. And the same counts for the activity of an individual because industry and building are not the only factors that affect the environment. On the contrary, the actions of an individual are just as important. After all, there will be 7 billion individuals by the end of the year 2011. And for that reason, the transition to a sustainable system requires the participation of the wider population although political and economic adjustments are not negligible because the implementation of full-scale sustainability needs a complex and centrally led strategy. A good example is recycling which is an important part of sustainable development. Households and industrial facilities cannot recycle if there is no separate waste collection for instance. On the other hand, the central and local authorities can take all the necessary measures but they will remain without any effect if the people do not actively contribute to the efforts to reduce the human impact on the environment. Transition to sustainability is a process that requires the participation of everyone.

RESULTS

There were many sources available to and utilized by the author. Electronic searches of databases such as Google Scholar, ProQuest, Science Direct, and Synergy were completed and articles were selected.

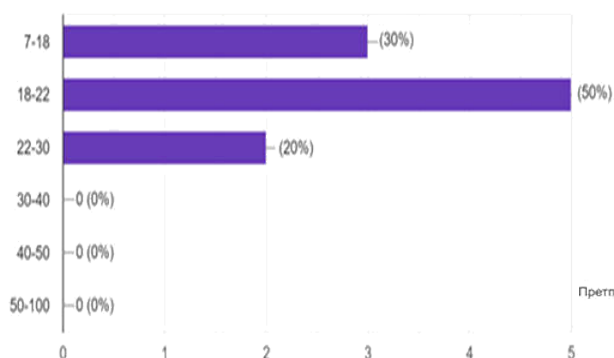


FIGURE 1: Age assessment for Ecological Footprint

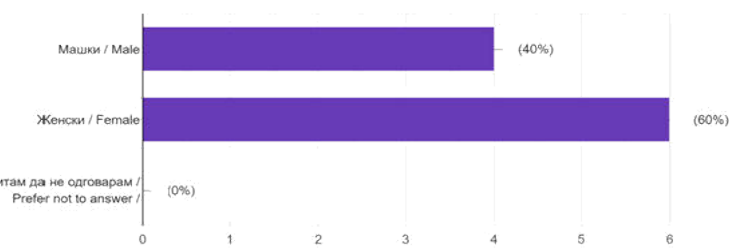


FIGURE 2: Gender assessment for Ecological Footprint

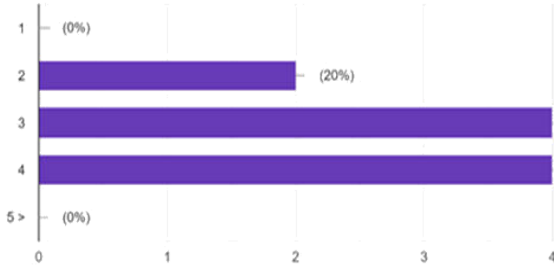


FIGURE 3: Household assessment for Ecological Footprint

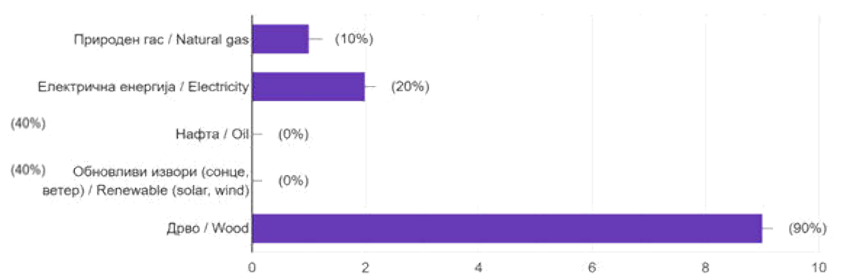


FIGURE 4: Heating type assessment for Air pollution

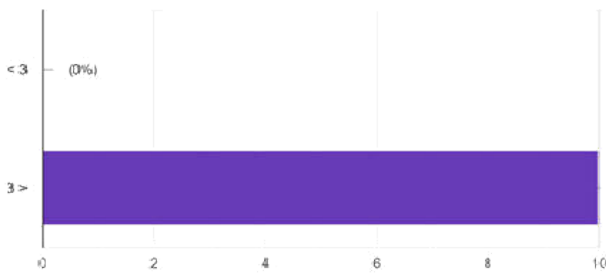


FIGURE 5: Water assessment for Water pollution

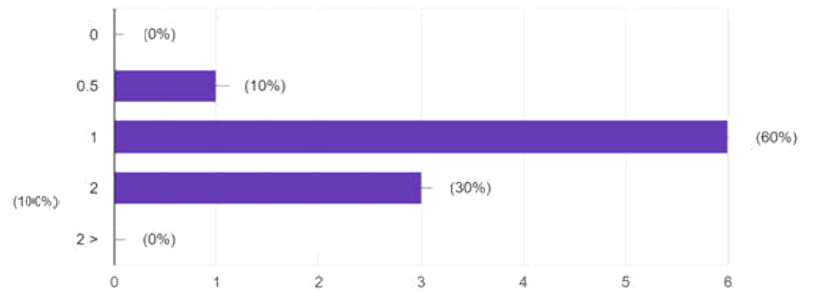


FIGURE 6: Waste assessment for Water pollution

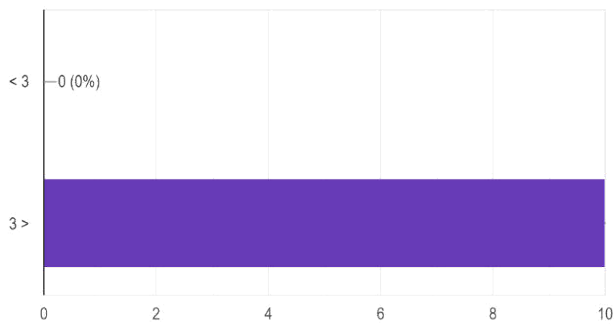


FIGURE 7: Bath tabs at household for Water pollution

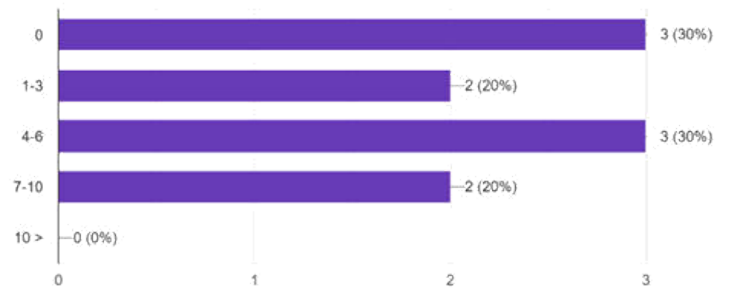


FIGURE 8: Waste assessment for Water pollution

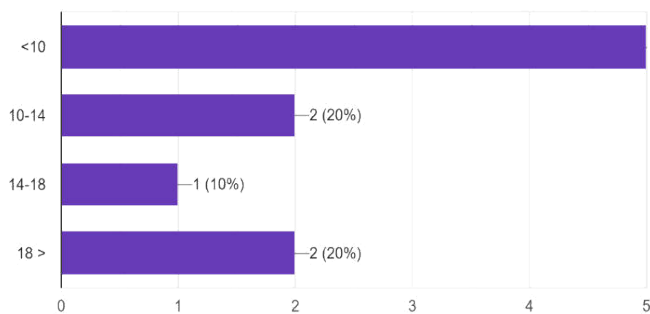


FIGURE 9: Fresh Food assessment for Soil pollution

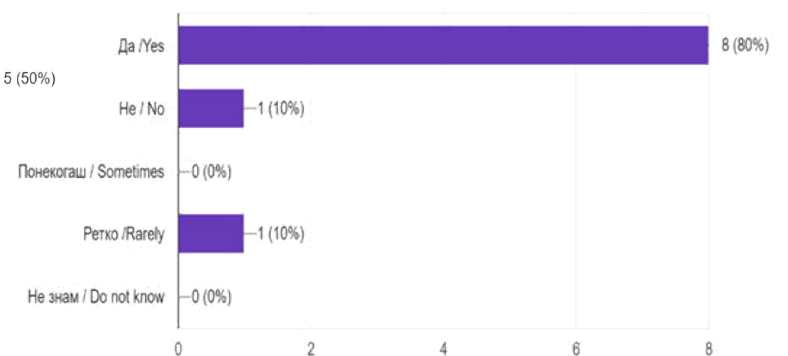


FIGURE 10: Local Bio food assessment for Soil pollution

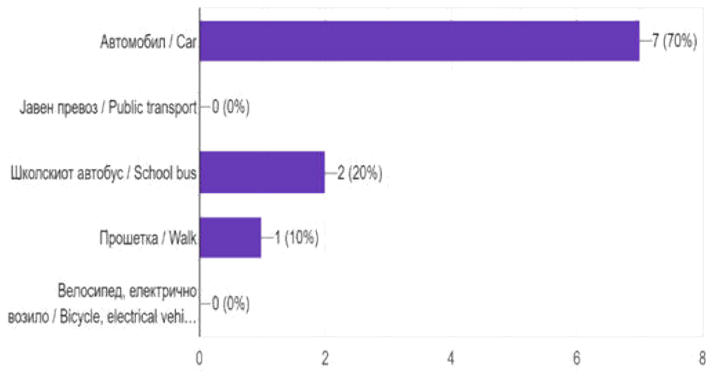


FIGURE 11: Travel assessment for Air pollution

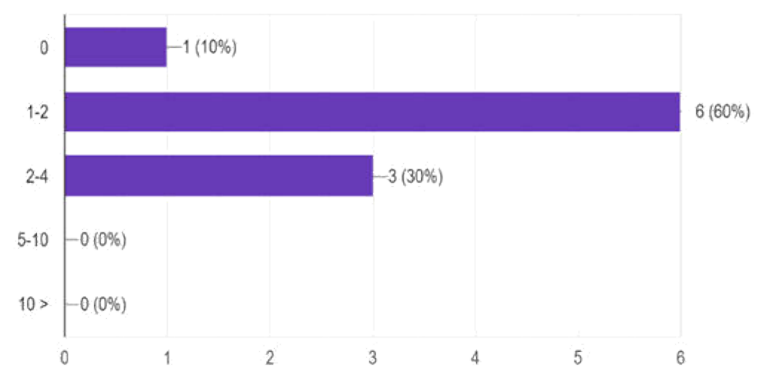


FIGURE 12: Travel Gas exaction assessment for Ai pollution

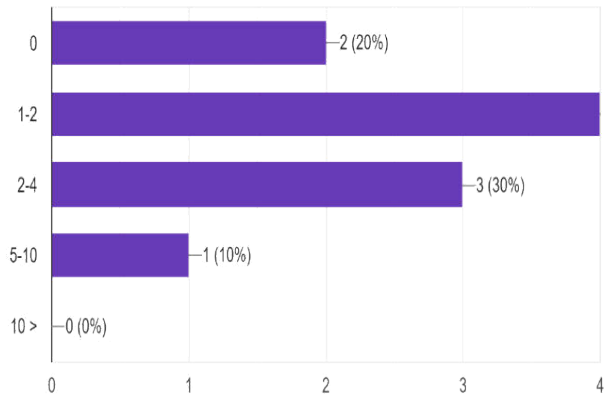


FIGURE 13: Waste assessment for Waste pollution

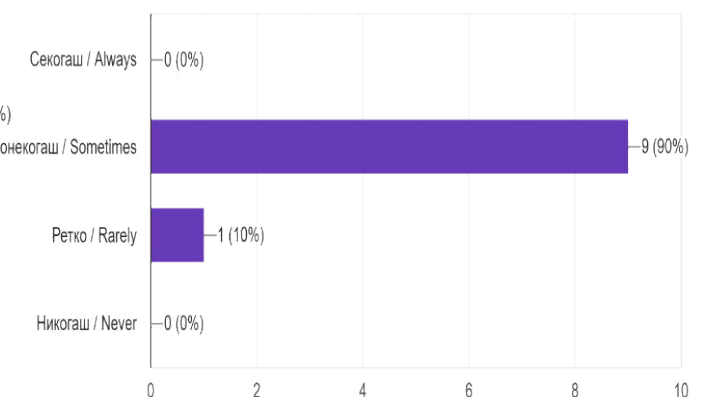


FIGURE 14: Energy Efficient assessment

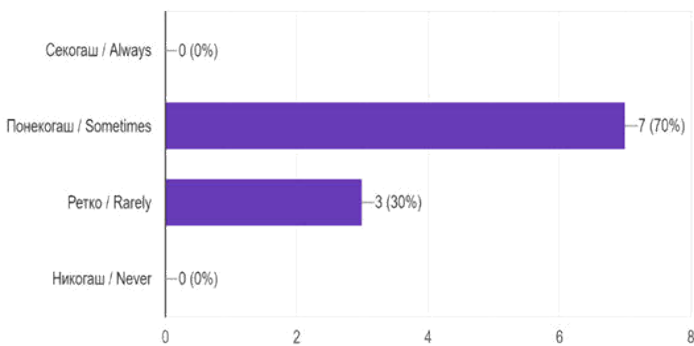


FIGURE 15: Home Food assessment

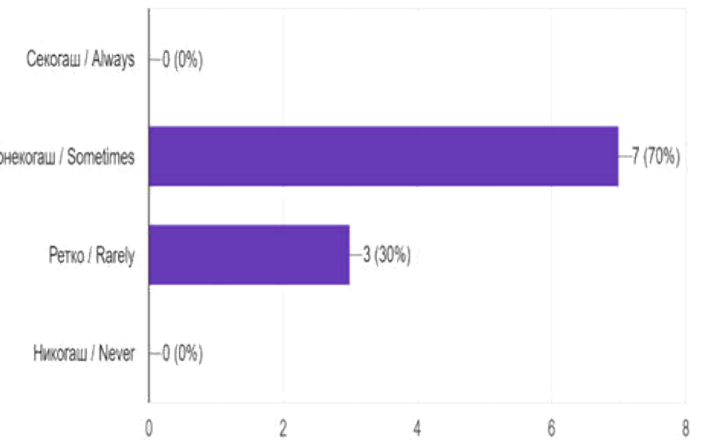


FIGURE 16: Waste recycling assessment

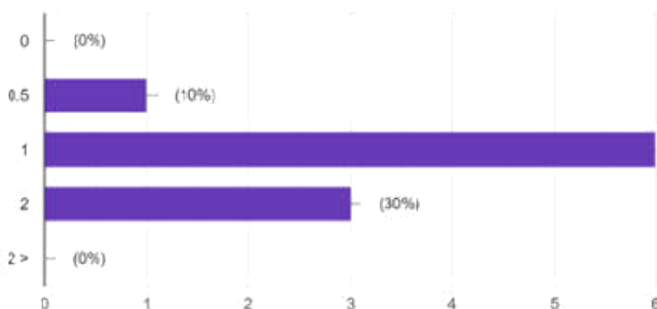


FIGURE 17: Waste Rubbish bag assessment

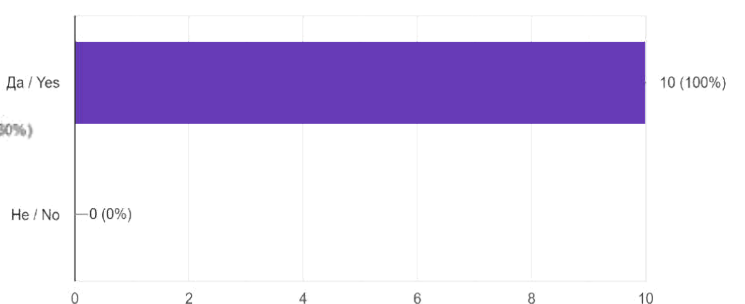


FIGURE 18: Waste Management assessment

CONCLUSION

The research study aims to assess the individual ecology indicator. It also tries to lower the pollution level by raising public awareness among citizens, especially among the younger population, students, and high school students by measuring their impact on pollution.

By doing so, they would encourage a sense of responsibility in the protection and promotion of the environment, by animating the young population in taking measures to prevent or reduce environmental pollution. Sustainability may sound like something that requires a complex approach and strategy from "the above", however, an individual is not as helpless as it may seem at a first glance. On the contrary, every individual counts in the transition to better sustainability and reduction of resource consumption.

There are many ways to contribute to sustainability as an individual. For a start, follow the directions of your local authorities. If there are separate waste containers, make sure to sort your waste and dispose of it properly. It does not cost you anything to sort your waste according to different materials and helps the transition to sustainability more than you may think. Most of the things we throw away on a daily basis can be reused and recycled, while each reused and recycled item significantly reduces the pressure on non-renewable resources as well as helps reduce waste pollution.

The results presented here suggest that the gain from improving awareness of pollution may be very beneficial by also focusing on health impacts. Insofar as air and water pollution may lead to reduced cognitive performance, the consequences of pollution may be relevant for a variety of everyday activities that require mental acuity.

As such, the results presented here highlight a channel by which the consequences of pollution are vastly understated by a narrow focus on the immediate and acute consequences, and suggest that improvements in air quality may yield tremendous benefits in welfare.

RECOMMENDATIONS

As such and according to the results of the study, some recommendations can be given: The data analysts must raise their seriousness in developing secure and serious data analytics recommendations. The ecology awareness applications should be user-friendly and usable, so that will increase the clients' satisfaction. By having serious dissemination and presentation of the data and providing sufficient training, can raise the impact to lower pollution by considerable measures.

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