



User Role in Boosting Landscape Positive Effect

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Landscape Damage, Sustainability, Improving Environment, Global Warming, Covid-19.

Abstract— Many studies agree that communication and living within landscape have positive impacts that are reflected on the members of the society and the environment. To avoid the destruction of landscape, the community cooperation always stimulates the human essence in promoting and developing easy and sustainable environmental actions. Sometimes this strong relationship between humans and the environment is not clear and prominent. This research will focus on elucidating this relationship. Therefore, the study aims to reduce the negative effects on the landscape and to shed the light on how people may destroy or save the environment.

The study explains solutions of: how people can deal with and care for landscapes; to contribute to their prosperity and their presence everywhere on earth. This promotes the sustainability of the earth's resources as well. The research data was collected and analyzed to find that most of the respondents willing to contribute to improving landscapes were young people. This is promising, as the youth are the pillars for all future improvements and will have a clear impact on the needed change. The most important results were related to the user's role in protecting and using the environment correctly, which is the first and most important factor that everyone should strive to raise awareness and shed light on the positives of being present and paying attention to natural environments because of their many helpful effects.

I. INTRODUCTION

HUMANS have developed technology to maintain their daily life more easily, but they ignore the effect that could happen to the environment and landscapes around them. That disregard of environmental enhancement leads to pollution which affects the human population's health in an unbelievably risky way. It also affects the landscape (Khan & Ghouri, 2011). Furthermore, researchers found that a huge change happened to the urban green areas which are lowering their number because of the

incredible growth in industrialization and population (Sari, Sari, and Karaşah 2015).

Likewise, another side affected by pollution is the soil. Humans' well-being is threatened by danger due to the amount of polluted metal that has been found in the soil, which can provide a large amount of heavy minerals or metals in the soil that are used to grow the vegetables (Onder, Dursun, Gezgin, and Demirbas, 2007). Water availability is also another side that is affected so directly due to pollution presence. Some researchers found that by 2030 the population growth will lead to consumptive water use, people will survive with a shortage of water availability around the world, and it will lead to drought (Martin, 2008).

Beside pollution, there is a huge issue people face, which is global warming. It is caused by the gases that absorb radiation reflected from the earth and re-radiate to the earth surface, the amount of re-radiation will heat and cause global

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warming (Somaya, 2012). Pollution becomes the number one issue the earth faces these days.

The paper will figure out solutions to decrease pollution and increase the knowledge of landscape culture and its positive impacts. Also, explain how to make negative aspects turn into helpful aspects that contribute to the sustainability of the earth's resources in the presence of landscapes. Briefly, the target is to increase the awareness of landscape importance, provide actions to maintain global warming, try to participate in fixing the Ozon layer, and enhance the environment by reducing pollution. All these points were evaluated through elevating user role and understanding of his surrounding and environment.

II. METHODOLOGY

Data for this research was collected using articles and scientific websites as a primary source for the research. As for the secondary resource, an electronic questionnaire was published to come up with user's opinion about the landscape impact. Data and results were analyzed and discussed in the paper.

The scientific articles provided general information on the people negative effects on landscapes, the positive effects of landscape on humans, and how to take care of landscapes. The quantitative model was used to collect data and people's opinions about reasons affect landscapes, what are the landscape advantages and sound effects from all aspects, and suggestions by everyone to maintain and take care of landscapes.

The research relied on a quantitative approach to collect statistically correct data from people at the same country which is the Kingdom of Saudi Arabia, and a particular province was selected which is the Eastern province. The questionnaire took place electronically for one month to collect needed data starting at November 1, 2020 to December 1, 2020. The number of surveyed people was calculated according to 95% confidence level. As proved by (Navarro-Rivera and Kosmin 2013) the questionnaire is useful in analyzing experiences and reality. The questions were multiple choices and short answers.

The questions were for general information about the respondents. For example: the age group. Then the questions were about the landscape, and how can people improve and adjust society to be cooperative in that matter. Also, the factors affecting landscape negatively and the reasons behind people inability to provide and take care of the landscape, and at the end a short answer box to allow the respondents to give some suggestions that are beneficial to improve the landscape impact.

III. CAUSES OF LANDSCAPES DAMAGE

There are many negative destructive and influential causes on the environmental landscape in many ways. These include the following:

A. Lack of Environmental Awareness of the Individual and the Society

There is a strong relationship between man and nature, so now more than ever, everyone must know more about this relationship and how to maintain and develop it. Environmental awareness is a responsibility stemming from everyone in society that leads everybody to take care of the environment and the nature, also to carry out activities that protect and preserve the environment while determining the extent of the danger of human practices and their negative impact on the earth in general (Opdam 2018).

Sustainability has been defined as a "form of progress that meets the needs of the present without compromising the ability of future generations to meet their needs" (Khalil et al. 2011, P.3). The negative impacts of environmental unconsciousness are many and dangerous. At the beginning of the Industrial Revolution, the rate of greenhouse gases inflated, and accordingly, global warming as well as climate changes such as drought, desertification, and ecosystem change occurred for many living creatures that people are unable to adapt, and some of them were actually extinct (Khalil et al. 2011) (Anderson, 2019).

Life on Earth deals with water, air, and soil, thus the quality of life on earth is negatively affected. Examples of human activities those are contrary to the concept of environmental awareness such as:

1. plastic industries,
2. burning and cutting forests,
3. killing living creatures important for landscapes such as insects that help in pollination of plants,
4. plant growth and burning fossil fuels,
5. the deposition that pollutes the most important resources of life,
6. the excessive consumption of natural resources,
7. the abusive behaviors in dealing with plants such as the destruction of plants in the landscape,
8. the insufficient knowledge of how to care for plants and,
9. the failure to set limits by organizations and the government for reprehensible behaviors towards landscapes, such as throwing garbage in water bodies (Zwolinski and Schmidt 2013) (Anderson, 2019).

Therefore, the lack of environmental awareness and inexcusable behaviors towards nature and landscapes is a global issue and problem that has serious implications. Environmental awareness is a responsibility of all members of society, including landscape designers. Education and guidance are the tasks of everyone, especially with children for generations that understand and appreciate the great importance of the environment and landscapes (Zwolinski and Schmidt 2013) (Deniz 2016).

B. Environmental Pollution

Environmental pollution affects the existence and the quality of landscapes. This includes:

1) *Water Pollution*

Water is one of the most important necessities for all creatures on this earth. Water pollution is one of the common pollutants around the world. Contaminated water may be due to industrial pollutants such as oil spills into the ocean, household waste such as sewage water, polluted rainwater (Ashraf et al. 2011) (Gambhir et al. 2012) This negatively affects landscape quality, and many phenomena can appear to harm the landscape.

For example, the deposition of acids, which are acidic gases and other acidic substances, which spread into the atmosphere as a result of the combustion of fossil fuels and then fall to the ground and water bodies, thus increasing the acidity of water. Lack of nutrients in the water, which is the decrease in the number of bacteria and fungi in the water, which impairs the decomposition of organic matter, so many types of plants in the landscape will be greatly affected by acidic water. In addition, the deposition of organic materials, detergents, and agricultural chemicals, all of which lead to the death and poisoning of plants in the landscape.

2) *Soil Pollution*

Soil pollution is also a factor that has a significant negative impact on soil productivity and plant growth, and it is a hidden pollutant because we are unable to notice it by eye. The main cause of soil pollution is the lack of proper management of solids (Khan and Ghouri 2011). Soil pollution is the presence of pollutants that damage the physical, chemical, and biological properties of soil, thus impairs its productivity (Harrison and Alloway 2016). Soil pollution may appear due to human or natural pollutants. Examples of pollutants for soil include plastic, paper, pesticides, radioactive waste, and increased mineral content in the soil. All these examples cause toxic soil and its inability to use it for landscaping.

3) *Air Pollution*

Air is an essential component of human and plant health. Air pollution is the presence of toxic chemicals and compounds in the air that cause health risks (Environmental Pollution Centers, 2020). Air pollution negatively affects biochemical factors that hinder plant growth and development in the landscape (Rai 2016). Air pollution is very common, especially in developed countries. The causes may be divided into polluting human activities and natural processes also polluting the air. Examples of polluting air: mining, transportation fumes, factory gases, pesticides, heating, power generation, etc. (Khan and Ghouri 2011) (Environmental Pollution Centers, 2020). This leads to the spread of toxic substances through the air and becomes an obstacle to the development of landscapes in the world.

C. *Global Warming*

Global warming is the phenomenon of increasing air temperature when levels of greenhouse gases in the near-Earth atmosphere increase (Packia Lekshmi and Viveka 2011) (Michael and Henrik, 2020). The causes of global warming can be both human activities and natural factors. Examples of human activities causing global warming: the industrial

revolution, burning fossil fuels, deforestation, manure management methods, changes in land-use methods, changes in soil moisture, poor ventilation in landfills. All of this contributes to an increase in the percentage of carbon dioxide, methane, nitrogen dioxide, chlorine, and bromine in the atmosphere (Packia Lekshmi and Viveka 2011) (Abouelfadl 2012).

This leads to qualitative and quantitative changes in agriculture, horticulture, and forestry. This will negatively affect the processes of photosynthesis and the nutrition of plants, and this has a great impact on the quality and longevity of landscapes (Packia Lekshmi and Viveka 2011). Examples of natural factors that cause global warming are volcanoes, melting of ice in the Antarctic and Arctic, forest fires, (Michael and Henrik, 2020) all of these factors also contribute to the emission of greenhouse gases and are the main cause of an increase in the rate of harmful global warming on the environmental landscape.

D. *Loss of the Ozone Layer*

The ozone layer is the lower atmosphere of the planet, and it is an ozone gas that consists of three atoms of the element oxygen (Admin, 2020). The function of the ozone layer is to avoid the negative effect of ultraviolet rays on living creatures on the earth (OpenStax et al, 2020). The hole of the ozone layer causes an increase in the proportion of ultraviolet rays of the type of ultraviolet radiation with wavelengths between 290 and 320 nm "UV-B", which is one of the most dangerous rays. The reasons for the existence of the ozone hole have several factors such as human chemical factors. An example of chemical substances and gases, methyl chloride is used as a cleaning liquid, carbon tetrachloride is used in dry cleaning, and methyl bromide is used in pesticides, chlorine gas emitted from factories.

As for natural factors such as volcanic eruptions, methane gas, which is formed from swamps, water vapor, and all of the above mentioned are considered to be depletes of the ozone layer (Eissa Piri 2011) (Admin,2020). There are serious damages that negatively affect the landscape and plants (Ratti et al. 2007), as it adversely affects the life cycle and growth of plants, causes a negative change to plant cells and the organic functions of the plant, and also contributes to the destruction of vegetation cover and plant genetic material, which will affect the balance of vegetation in the landscape on the ground (Eissa Piri 2011) (Canada, E, 2013).

E. *Loss of Biodiversity*

Biodiversity is defined as biological diversity, which is the diversity of the various types and forms of life on earth and is also considered a measure of the quality and health of biological systems of the genetic structures of plants and animals and the richness of biological diversity on earth (Biodiversity, 2020). Biodiversity contributes to enhancing several beneficial aspects for societies and preserving the living creatures, helps in meeting the needs of societies and develops in several areas such as agriculture and medicine,

and contributes to the prosperity of ecotourism and the strengthening of the state's economy with the availability of plant and animal wealth.

When the valuable biodiversity is lost, it will have a serious impact in several aspects, including the destruction of landscapes, and the main reason for the loss of biodiversity is climate change, which will cause desertification, change in the land and marine ecosystem, and because of inappropriate human activities such as burning and deforestation and replacing it with modern facilities, excessive depletion of resources (Duodu 2019), natural agricultural activities, wrong activities, hunting, unlimited use of pesticides, and chemicals. The negative impacts of the loss of biological diversity are numerous, as follows: the destruction of living organisms' habitats, the great losses of natural plant and animal resources, the weakness of agricultural capacity, and the generation of diseases (Powell, Chase, and Knight 2011) (Biodiversity, 2020) (Duodu 2019). Therefore, the loss of biological diversity is a major reason for the maintenance of landscapes.

IV. SOLUTIONS TO HANDLE THE DAMAGE OF LANDSCAPES

To handle the causes of landscapes damages, there are many ways:

A. Increase Human Awareness

The main cause of the pollution and damages to the environment is the industrial revolution. By the time, humans kept developing the industrial field so fast to maintain their needs, and that has affected the environment and the global in a very negative way. So, there is a responsibility to recover the damages and increase users' awareness of the importance of landscapes and green areas (Anderson, 2019). Everyone can start by himself; even small changes can help the environment to recover (Sanz 2019).

The small actions done every single day contribute to the amount of environmental pollution. For example, humans lay on the trees to provide them their basic needs from food to medications, so they cut a huge number of trees in the Amazon and other forests. But in fact, the Amazon is considered as the lung of the globe, as known, trees take the carbon dioxide and then it provides the oxygen to us (Anderson, 2019). Humans should be wise in using nature, teaching the children how nature is important, and that people & the nature are connected to each other, where one completes the other. It is an important responsibility to elevate the people awareness to maintain the future generation's needs.

B. Reduce the Global Warming

It is one of the biggest issues the world face, people should reduce the pollution as it is the main cause of global warming. Atmosphere, oceans, sediments, and biosphere are contained by nature carbon so, this can be maintained by:

1) Capturing Carbon into the Earth Ground or Oceans Grounds

Capturing carbon dioxide into grounds and oceans can reduce the negative impact on the environment and the changes in the climate. This mechanism works when pressurizing the carbon dioxide gasses and then pushing them into the earth or oceans grounds through a well to a layer of sand rocks, which has a 200-meter thickness that contains saltwater in it, but this technique needs very good control to prevent any accidents (Somaya, 2012).

2) Use the Renewable Energy

This kind of energy is available in wide-ranging ways, and it does not need any burning gasses to work. These renewable energies can be found in solar radiation, wind, and ocean waves. For example, the African desert has the largest amount of solar radiation, which if people use just 0.3% of its total area will provide whole Europe electric energy for the whole year (Somaya, 2012). Almost all governments are now working on this kind of energy to take a place in their responsibilities to save their communities and the globe.

C. Fixing Ozone Layer

Ozone layer depletion is an issue that makes the earth's temperatures high and causes a lot of problems on the earth, so governments have put programs to maintain this issue worldwide. Governments have been working on a protocol called the Montreal Protocol, this protocol aims to reduce the number of chemical gasses that caused Ozon depletion so, this protocol has reduced chlorofluorocarbons or CFCs (Fisher, 2018). But this step needs a budget to provide the needed supplies and make it possible to happen, if people dispense the use of chemicals, they need to find and develop other technologies to replace it.

Also, there are other ways to help this issue such as, trying to avert the using of pesticides which is considered as a chemical product that affects the environment, instead trying to use the natural products which work as the chemical products and even better. In addition, trying to lower using vehicles, which produce a huge amount of chemicals that contributes to increasing the greenhouse effect in the whole world.

Eco-friendly cleaning products needs to be activated, the chemical ones produce chlorine and bromine, which they by the time affect the Ozon layer, at last, Nitrous Oxide consider as a dangerous chemical so governments should disallow it (Admin, 2020). All these solutions will take time to detect their effectiveness in fixing the Ozon layer; people just need the patient and faith in saving the future.

D. Environmental Procedures Enrichment

Humans are the main reason for the pollution of air, water, and soil, the solution is human too. People need to assign programs and standards to maintain this pollution and should take real actions against it (Khan& Ghouri, 2011). Furthermore, when the people join in this stage to make

changes that would help the environment to get better, it is the best way to solve this problem (Khalil, Husin, Mahat & Nasir, 2011) (Khan & Ghouri, 2011). So, people should stop throwing their garbage in rivers and nature, and they need to start some programs that gather them to do a cleaning campaign to clean rivers and forests from the thrown garbage.

One way to clear the polluted water is to use natural materials that have the ability to clean the water from any impurities, Seeds of Moringa Oleifera tree is one of these materials, and studies showed that seeds of Moringa Oleifera tree are the most effective material that can clean any small impurities (Gambhir, Kapoor, Nirola, Sohi & Bansal, 2012).

Because of human and their behaviors against the environment, there should be a strict rule to follow by people to manage the pollution. In fact, the situation that the world facing currently COVID-19: researchers noticed that the amount of pollution in air and water has been reduced. They assume that this happen because the activities of human get less during COVID-19 lockdown.

According to (Rume & Islam, 2020), If a comparison between the year 2020 and 2019, there are reduction in air pollution in CO and N₂ O, which almost reaches 50% (Henriques, 202) (Caine, 2020). Also, the emission of NO₂ has reduced, this emission of NO₂ is the biggest reason of pollution in the entire globe because of the high amount of fossil fuels burning (Biswal, 2020) (Ghosh, 2020). This suffering, "Covid 19", that the world is going through now, brings a positive effect. Healing the globe from its illness, which people have been trying to fix it for years became a reality. It is not the perfect solution for the economic and social life of the human being, put in one year at separated time of shut down in many areas around the world people noticed that healing in the globe is possible.

V. USER ROLE AND PERCEPTION OF LANDSCAPE IMPORTANCE

The below data was collected through an online questionnaire. Through the data analysis the below points arise as per the following:

A. Factors Affecting Landscape through Users' Point of View

The respondents were in three age groups, where 59.5% were between 20 and 30 years old, 33.6% from 15 to 20 years old, and only 6.9 older than 30. This indicates the youth willingness in participating in the development and the enrichment of the future quality of life. The fact that it never can be discarded; pollution is the major reason of most global issues since the huge industrial revolution in 18th to 19th centuries. Researchers found that poor countries are the main targets that pollution affects in a very dangerous way; almost 80% of polluted water has been used in these poor countries due to their need in providing the supplies that help to clean the drinking water. These poor countries are facing all kind of pollution (Khan and Ghouri, 2011).

As it shown in (Figure.1) "factors affect landscapes

negatively". It will be found that pollution is number three with approximately 24%. The respondents rate the lack of awareness of landscape importance as number one factor that affect the landscape adversely with 39% of respondents. The extreme use of natural resources is rated in the second place with approximately 30%. The governmental related rules are less effective according to people's opinion. Hence, 93% of respondents agree that the user and his activities are the main factors that affect landscapes negatively.

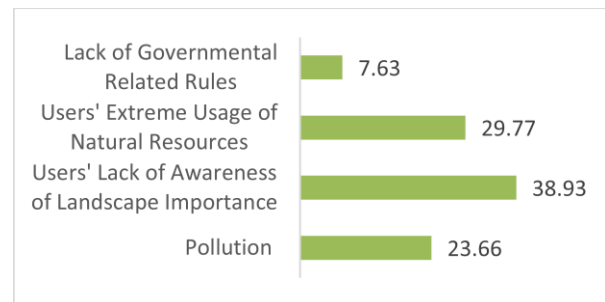


Figure.1 Factors Affecting Landscapes Negatively.
From survey results by the researcher

Pollution can affect human's psychology. As discussed early, it damages landscapes that play a role in enhancing psychological feelings of human being. People feel better when they interact with landscapes and when practicing activities in nature every day (Hamel, R, 2009). When respondents were asked which aspects will change in the presence of landscaping, most of them agreed it will enhance the psychological, mental, and human physical abilities which proof the importance of landscaping and the need for it in everywhere. (Figure.2). 84% from all respondents agreed that landscape existence will enhance the natural life of human, plants, and animals alike.

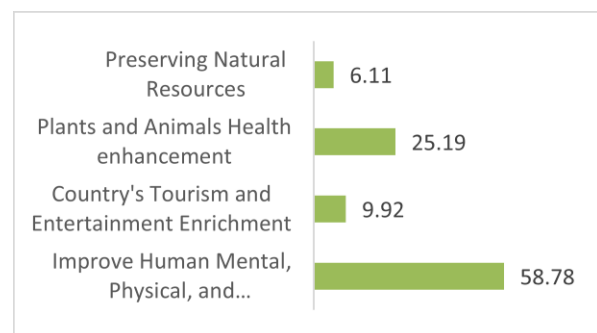


Figure.2 Aspects that Thrive the Existence of the Landscapes

VI. RELATIONSHIP BETWEEN COVID-19 AND REDUCTION IN POLLUTION

COVID-19 caused a lot of losses in economic and social aspects but, according to NASA due to the shutdown a lot of countries did to handle the pandemic; they noticed a reduction

in polluted air in the globe. Nitrogen dioxide is the main gas in the atmosphere found in large amount in the air has reduced about 20% since February 2020 (Berman and Ebisu, 2020). This reduction is caused by the changes that happen in people's behavior; they stop their activities during shutdown such as, using vehicle, factories and other activities that produce Nitrogen dioxide into the air (Berman and Ebisu, 2020) (NASA, 2020).

So, that approving the huge impact of human activities on the pollution can be managed if people change their behaviors against the pollution triggers. From the questionnaire, it was obvious that the lack of users' awareness of the landscape importance is the most vital factor. In addition, the open-ended question for anticipating users' perception in solving the landscape current situation, and asking them directly about the solutions to enhance landscape importance, some solutions evolved, and they contain the below points:

- Imposing penalties and strict laws for cutting existing trees or throwing dirt.
- Promote awareness and volunteering in the field of environment and sustainability.
- Increase the interest in afforestation, as this increases people's awareness of its importance.
- Stimulate gardening in private projects and set incentive rewards for those who care about agriculture and afforestation in their homes.
- Forming committees of specialists and those with tendencies in this regard.
- Creating easy investment opportunities to attract capital and exploit resources and develop them to ensure the continuity of their preservation.

VII. RESULTS

People are interested in landscaping and green areas to be present around them, but there is a lack of awareness in landscape importance according to what is discussed in this paper. There is a scarcity of the positive impacts that landscape can boost on the individual and the society levels. In addition, there are some factors that cannot be ignored because it is a global issue such as, Pollution and Global warming that cause a lack of natural resources and environmental changes (Wu, 2013) (Khan and Ghouri 2011). The response to the published questionnaire agreed that the presence of landscapes and green areas will provide them more relaxing and better health which is one of the United Nations goals to increase the quality of lives, and at the same time agrees with (Abdelrahman, Al-Hagla, and Saadallah 2018) where they confirmed that engagement with nature allows people to relax.

The paper also found that pollution is still one of the important issues people still face to manage the damages to the environment, according to researchers and to the survey respondents, Pollution has to start from the exposure of industrial factories, and it quickly escalated over the years then became a global issue that threatens human lives on the earth (Wu, 2011).

If people handle these issues, they can enhance human physical, mental, and psychological health, and that will make growth in the country's entertainment and tourism, enhance the plants and animal's health, and will preserve natural resources from getting lost. So, people and governments should work together to reach these factors to help the globe to get back to its normal state, as these issues were caused by people who lived on the earth.

VIII. CONCLUSION

It turned out that environmental destruction is a big issue, and the cause of the biggest is the disparaging human activities, and the proof of that was the cessation of human activity after the emergence of the Covid-19 pandemic, and this resulted in positive aspects such as:

- An increase in the quality of air and water,
- A decrease in the prevalence of greenhouse gases, and
- A great possibility of repairing the system. Natural environmental vitality

Everyone should bear responsibility because the human being is the largest part of the influence on this earth (Rume, 2020).

The research also clarified the deep relationship between man and his environment, and how to contribute to reducing the destruction of the environment and landscapes. Therefore, the human being must respond immediately and fight an environment of ideal quality for all creatures on the earth. All the information and tools become available, so it is time to put in the work. Now people can start to behave more consciously for the environment, and this starts with changing the daily lifestyle of every individual.

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ARABIC TITLE

دور المستخدم في تعزيز التأثير الإيجابي للمساحات الخضراء

ARABIC ABSTRACT:

تتفق العديد من الدراسات على أن الحياة في البيئات الطبيعية الغنية بالمساحات الخضراء له العديد من الآثار الإيجابية والتي تنعكس على الفرد والمجتمع على حد سواء. ولتجنب إهمال دور المساحات الخضراء في رفع جودة حياة الأفراد، يحفز تعاون المجتمع دافعاً الجانب الإنساني في تعزيز وتطوير إجراءات بيئية سهلة ومستدامة. فحياً تكون هذه العلاقة القوية بين الإنسان، والبيئة ليست واضحة وبارزة. لذلك سيركز هذا البحث على توضيح هذا الارتباط بين الفرد وبيئته الطبيعية.

وتهدف الدراسة إلى تقليل الآثار السلبية على المساحات الخضراء وإلقاء الضوء على كيفية قيام الأشخاص بإحراق الضرر بالبيئة أو قدرتهم على إنقاذها. تناقش الدراسة الحلول حول كيفية تعامل الأشخاص مع المساحات الخضراء والعناية بها للمساهمة في وجودهم ورفاهيتهم في كل مكان على وجه الأرض، مما يساهم في استدامة موارد الأرض بشكل عام.

لذلك تم عمل استطلاع رأي وجمع بيانات البحث وتحليلها، وأسفرت النتائج أن معظم الراغبين في المساهمة في تحسين البيئة الطبيعية كانوا من فئة الشباب، وهو أمر واعد، حيث إن الشباب هم الركائز لجميع التحسينات المستقبلية وسيكون لهم تأثير واضح على التغيير المطلوب. ومن أهم النتائج أن دور المستخدم في حماية المساحات الخضراء واستخدامها بالشكل الصحيح هو العامل الأول والأهم على الإطلاق والذي يجب أن يسعى إليه الجميع لرفع الوعي وإلقاء الضوء على إيجابيات التواجد والاهتمام بالمساحات الخضراء لما لها من العديد من التأثيرات الإيجابية.