



Harnessing the Potential of Green Spaces in the Sustainable Development of Urban Areas

Shweta Suhane

Assistant Professor, Institute of Architecture and Planning, Nirma University, Ahmedabad, Gujarat, India

Abstract:

Due to increased opportunities in terms of social, economic, and healthcare facilities, there has been a significant change of population from rural to urban areas. This has created rapid urbanization in a very short amount of time, leading to the haphazard development of cities. Moreover, it has also caused the environment to deteriorate, highlighting the need for sustainable and environmentally friendly development. Sustainable development in cities is crucial for maintaining overall health and improving urban green spaces (UGS). It has a crucial part in climate change adaptation and mitigation. Awareness among people is essential for successful adaptation, and educating children at the school level about the benefits of UGS and their environmental significance is crucial. Implementing laws and policies will be ineffective without this awareness. This paper talks about the importance of education of urban greens among people and the ways in which it should be inculcated into the education system. Through a literature review of different cases around the world, the paper attempts to understand the different approaches in the education system and the challenges faced. Based on the outcomes of the studies conducted, the paper suggests an approach that can be utilized in the education system to spread awareness about the importance of greens in the living environment. This will help in the proper optimization of urban green infrastructure. Urban areas lacking green spaces as well as spaces for outside recreations leading to unhealthy life choices, distorted natural environment perception. Increased awareness is crucial for successful urban greens incorporation, promoting a more natural environment.

Keywords: Education, Urban Green Spaces (UGS), Sustainability, Urban green infrastructure

Introduction:

Sizeable population is moving to cities as availability of opportunities is more in cities and is raising. The increase in population in a short period of time to satisfy their requirements has led to the haphazard development of the cities. Especially when talking about the Indian scenario, the shortage of land and huge migration to cities have led to the concrete

construction of metropolitan areas that are damaging both environment and biological species that inhabit them. The amount of green space is diminishing every day as built spaces continuously encroach on the city's green spaces, giving rise to global warming. This has led to the ever-changing, intense climatic conditions in cities. The green spaces are vital to preserving the environment, which is necessary for our survival. They are important for sustainably

Abbreviations: Urban Green Spaces (UGS), Sustainable Development (SD), Environmental Education (EE), Sustainable Development Goals (SDG), National Curriculum Framework (NCF)

developing the world around us and are intertwined with different interdisciplinary approaches. Hence, for the improvement and development of urban green, political, economic, socio-cultural, managerial, and planning factors must be considered (Haq, 2011).

The efficient development of sustainable cities is one of the most significant challenges that many nations across the globe are experiencing. Introducing urban green spaces in this context can be one of the solutions, as it provides social, economic, cultural, and psychological benefits to the residents. Moreover, improved environmental quality has emerged as a sensible objective that supports sustainable and low-carbon development. (Shi & Woolley, 2014) By introducing greens at the city level, the connection between people and the environment can be restored, which overall helps improve the liveability of the area. UGSs have the potential to have a good impact on people's social lives and psychological behaviour by expanding the amount of nature that people may access, which is otherwise constrained due to the rising complexity of urban life (S & K, 2021). Hence, the main objective of SD in cities is to ensure that the overall health of urban areas is maintained and improved through UGS.

The main highlight of the study is the awareness among people and its importance in education systems. Even though there are actions taken for sustainable development, the general public is unaware of them. Awareness regarding sustainable actions can make people sensible towards them, making the actions taken successful. Through awareness, residents are informed and take part in the policy-making process, resulting in the comprehensive and effective long-term growth of their surroundings.

There are multiple ways through which awareness can be raised among citizens, but awareness raised through education at a young age can be more effective. Considering what is known from the available literature, it is clear that creative, practical, and appealing methods of educating pupils about the SDGs are required. (Manolis & Manoli, 2021) “The SDGs may act as a source of inspiration and motivation for academic researchers seeking solutions; therefore, increasing students' understanding of them is crucial for both their implementation and upcoming breakthroughs.” Hence, the paper talks about different cases across the world that have included sustainable development goals in the early education system. Through this, the challenges and way forward on the scenario are gathered that can help in finding ways to inculcate in the education system in the Indian context.

Sustainable Development & Urban Green Spaces

Sustainable development is defined as “development that meets current demands without risking future generations' ability to meet their own needs (Sustainable Development Commission, 2019).” It has been observed over the past two decades that economic growth has had a negative impact on environmental conservation. Resources on Earth have been used in ways that are inefficient and unfriendly to the environment, leading to negative outcomes, including declining air quality and global weather conditions. Sustainable development therefore means embracing expansion while using resources more wisely and taking into account both the immediate and long-term benefits. There are three primary objectives of Sustainable development namely growth of the economy, protection of the environment, and inclusion of all communities.



Figure 1: Sustainable development objectives (Steinbrink, n.d.)

Narrowing down to environmental protection, the paper talks about how preserving urban green spaces is related to sustainable development. The World Urbanization Prospects Report states that urban regions house 53.40 percent of the total population of world, with population increase by 0.5% per year. Urban green spaces (UGS), such as roadside plantations, institutional plantations, parks and household gardens, are critical for ecosystem services while accounting for only 4 percent of the world's land (Pradhan et al., 2020). Numerous functions served by urban green spaces enhance citizens' standard of living. There is therefore general agreement on the importance as well as application UGS for creation of environmentally friendly urban areas in the 21st century. Particularly in emerging nations, urban heat and the continually growing traffic conditions do not only hurt the environment; they also have a detrimental impact on socio-economic conditions of the inhabitants. It is hard to disregard the ecological benefits afforded by green areas in today's sustainable planning. It ranges from maintaining and

safeguarding nature to contributing in the management of change.

Green areas present in the inner parts of cities are extremely vital for improving the quality of the air because they absorb the gases and particles that lead to respiratory illnesses. The energy expenses of adequately cooling buildings are also reduced due to green landscapes. Additionally, green spaces add to the visual and amenity value of a property. However, the neurological and societal benefits of green open spaces in an urban area are those that are most sought after. Public parks and gardens, as well as urban green spaces, provide recreational opportunities.

Urban Greens and Sustainable Development

Woodlands, parks, gardens, squares, cemeteries, and allotment gardens are examples of open, vegetation-rich environments in cities. They are part of the urban green fabric or system and encompass the preservation of the natural environment and landscape (Smaniotto Costa, Mathey, & Šuklje Erjavec, 2008). "The sum of all green spaces that comprise the urban green fabric or system is referred to as urban green (Smaniotto Costa, Mathey, & Šuklje Erjavec, 2008)."

Cities are facing increased population growth, resource constraint, and the consequences of climate change, demanding UGS for sustainable, healthy areas to address these issues. (WHO, 2017) Urban eco-friendly infrastructure is increasingly being recognized as a vital structural element of urban centers and as being essential to the global development of sustainable practices. "Urban green infrastructure design, provision, management, conservation, and restoration are increasingly acknowledged as essential elements of any comprehensive and practical strategy for urban sustainability as a result of the growing interest in

sustainable development (Hanna & Comín, 2021).”

The performance of urban settings, community resilience, and socially responsible lifestyles are all enhanced by adopting greenery and other nature-based strategies, which also benefit the health and wellbeing of urban residents. We are dependent on the trees and vegetation; if we do not continuously work toward sustaining them, they will not last. Green spaces provide a variety of diverse and broad purposes.

However, due to its connections to societal and environmental issues, transportation, and the health of the environment and people, sustainable development is based on a variety of additional factors other than urban green spaces (Hanna & Comín, 2021). The role of urban greens in the creation of liveable spaces is not common knowledge among the majority of human beings. This makes them insensible towards the attempt to restore it. Inculcating this basic knowledge in children from an early age can make future generations more aware of the environment and how to care for it.

UGS and Ecosystem

UGS are ecosystems within cities that provide ecosystem services like purification of air and microclimate mitigation. They are made up of shrubs, trees, soil, water and grass (Hirabayashi, 2021). Urban green spaces provide numerous benefits to people, including the enjoyment of natural features like flowers, trees, and wildlife, educational and social opportunities, and healthy leisure spaces. They enable interpersonal connections, group involvement initiatives, and healthy leisure activities. Linkages are drawn between walkable green spaces and better health as well as outdoor exercise, and urban senior people may live longer if they live in walkable green spaces. Among

various health benefits, it has been observed that a greener environment also helps in the reduction of deaths related to stroke. The utilization of green areas for recreational and physical activities depends on environmental variables.

In places such as eateries, environmental centres, museums, libraries, and cafes, urban greens become a necessity. They offer sports, events, and social capital, promoting social inclusion and community cohesion among residents. Green areas also act as a space for strengthening socio-cultural ties and building communities, impacting social capital positively. Residential green spaces are more beneficial when people engage in passive activities like walking, socializing, and observing their surroundings.

They help in regulating the climate, improving the quality of air in dense urban environments, promoting outdoor recreational activities, and positively impacting biodiversity. All these ecosystem services impact the inhabitants. Thus playing a crucial role in an inhabitant's lifestyle and quality of life. It impacts the overall ecosystem, i.e., the protection of wildlife, by stopping the fragmentation and seclusion of wildlife. Thus playing a crucial role in ecosystems.

Lower ambient temperatures are one of the many contributions of urban greens. It provides a comfortable temperature for human body and better quality of air. Though greens help in reduction of UV rays, maintaining a conducive temperature for human body and so on but at micro level the building's orientation, expanse, compactness decides the extent of heat reduction the greens surrounding can provide. There are also some studies that discuss how little the significance of greens is in contributing to quality of air.

As discussed above, various factors associated with a building play a role in the

amount of heat reduction. Similarly, green space scale is a term used that refers to the expanse of greens in a particular area and how it directly impacts the amount of temperature regulation that happens in that area. Various studies indicate the role of mature trees in cooling the surrounding area and reducing the temperature in green areas. They manage the urban climate by providing shade, thermal comfort, and relief from the heat island effect.

We have by now discussed in detail the crucial role of urban greens and gardens in temperature regulation, but we should also know that the distribution of pollutants in cities depends on the architecture as well as the location of urban greens. Apart from this, inhabitants' personal experiences also depend on the kind of green areas one has in their locality and the amount of pollution at the household and community levels. The streets with a line of trees tackle pollution better in comparison to narrow streets without greens.

The various levels of greens and greens of different species have varied effects on their surroundings. It is directly related to the amount of heat reduction it can provide in that specific area. A dense green space that provides greater relief from heat is one such example of dense green space. When a continuum is maintained between green areas in an urban setting, its effect on heat reduction is large when compared to isolated green spaces.

We have already explored the benefits of green spaces for heat regulation and their ability to do so from the city to the neighborhood level. Moving forward, consider the building level. The methods of heat reduction at building level include greening the walls and roofs to reduce pollution and provide a shield from outside heat. Green roofs, when placed in a direction opposite the wind, reap more benefits. Evapotranspiration helps with heat reduction, which is a result of greening

walls. While these methods do produce similar levels of heat reduction and pollution control as an urban forest might provide, But the maintenance and installation expenses are higher. Carbon sequestration happens when green infrastructure in urban spaces captures carbon. It balances carbon emissions and maximizes carbon sequestration.(Hernandez et al., n.d.)

Urban Greens and its Benefits

UGS, which includes an array of areas such parks at many levels from society to city, sports grounds, urban forests, and more, are vital and diverse elements of community development. These areas offer a sense of continuity, respite from the stress of city life, and locations for social gatherings and celebrations with others. They are sustainable and diverse.

UGS can be further be classified into public involvement, active sports spaces, children's spaces, natural green areas, formal green areas, informal green areas, land management policies, and recreational activities. In addition to public parks, reserves, athletic fields, streams, riverbanks, greenways, walks and paths, neighborhood shared gardens, street trees, and other locations, they can be found in number of constructions and forms.

UGS come in many forms and are crucial for the growth of communities. Green areas protect the environment, social components, and economy while bridging the gap between the urban and natural worlds. Ecosystem services are also supplied by public woods, green roofing on all types of buildings, and abandoned and reclaimed land. Long-term regeneration projects are guaranteed by productive land use, and green areas can generate income by putting sustainable urban projects like drainage systems into place.

Communities place a high value on green spaces because they are horizontally maintained at the same level, unfenced, and may be thought of as a continuity. They help inhabitants feel more connected to one another, communicate with one another, form social bonds, and maintain community cohesion.

One of the most significant indicators of neighborhood satisfaction is how green a community is. To summarize, UGS play a crucial part in community development by offering a variety of sustainable locations where individuals can find respite from the stress of city life, gather and celebrate with others, and feel a sense of continuity. Communities may create a livelier and sustainable environment by integrating green spaces into planning of urban areas.

Benefits

UGS have positive effects on the wellbeing of inhabitants and other components of an ecosystem in both direct and indirect ways. Unlike artificially built infrastructure, there is no recognized way for objectively evaluating the function of green infrastructure. (Hirabayashi, 2021) The vulnerability and adaptability of cities are heavily reliant on the quantification of ecological services. (Pradhan et al., 2020) But functionality of Urban forests cannot be quantified. Urban forests are frequently constructed with qualitative outcomes in mind, such as aesthetics and prosperity (Hirabayashi, 2021). Moreover, as they produce less pollution, communities that support green infrastructure are more liveable and healthier. The benefits provided by UGS are translated into ecosystem services. Ecosystem services are distinguished by their contribution to human welfare because they are the recipients of these services that humans enjoy, consume, or use. There are numerous advantages to having urban green spaces, which are listed below:

a. Environmental Benefits

i. Ecological Benefits

There are large variations in solar rays, temperature of air, wind velocity, and absolute humidity due to the built structure of urban areas. In cities, surfaces absorbing heat, when paired with the consumption of high energy, result in the effect of urban heat islands. If proper forest planting is not followed, it has been shown to raise temperatures in cities by 5 °C (Bolund & Hunhammar, 1999).

i. Reduction in Pollution

Some of the contributors to the pollution caused in urban areas are biological waste manifesting into liquid droplets, particles of solid or gas, particulate waste, and chemicals. Children, the elderly, and those with respiratory problems are the groups most impacted by harmful chemicals (Sorensen, Smit, Barzetti, & Williams, 1996).

The total cost of noise has been estimated to be between 0.2% and 2% of the European Union's GDP (Bolund & Hunhammar, 1999). In densely populated cities, urban green spaces can dramatically reduce noise levels. Complex urban ecosystems are considered in contemporary urban greening research. Conservation of green space helps in maintaining natural ecosystem networks for ecological sustainability in cities. Various factors, such as quantity, quality, and proximity, play a role in helping urban green areas reduce noise levels in dense cities. Various factors such as quantity, quality and proximity play a role in helping urban green areas to reduce the noise levels in dense cities.

ii. Biodiversity and Nature Conservation

Urban green spaces are critical to safeguarding the ecological elements of sustainable urban landscapes. They offer seasonal variety, visual comfort, and connection with nature. Through the use of

green spaces and plant species that are self-sufficient and sustainably adapt to local conditions, sustainability can be achieved. Biodiversity conservation can benefit from highlighting the socio-cultural context of biodiversity and archiving traditional knowledge. The importance of plant species on farm boundaries, as well as traditional knowledge about their use and practices in farming households, is evident (Nautiyal & Goswami).

b. Economic and Aesthetic Benefits

- i. **Energy Savings** - Plants not only provide shade and improve air flow, but they also sweat, which provides cooling. A study conducted in Chicago and it was discovered that a 10 percent increase in tree cover might lower total heating and cooling power demand in a city by 5-10 percent" (Sorensen, Smit, Barzetti, & Williams, 1996). A 1.2 kilometer x 1.0 kilometer park can measure temperatures up to 4 kilometers away from the park and neighbouring cities (Heidt & Neef, 2008).

i. Property Value

Urban areas with a lot of greenery are also more aesthetically pleasing and appealing to investors as well as locals. There is strong evidence that landscaping and green space increase a land developer's housing values and economic returns by up to 15%, based on the type of project. One of the components that attracted large foreign funding in Singapore and Malaysia was the beautification of their urban areas (Oguz, 2000).

c. Social and Psychological Benefits

i. Recreation and Wellbeing

Inhabitants of the residential neighborhood meet the majority of their leisure needs. As

per (Nicol and Blake, 2000), cities house above 80 percent population in the United Kingdom, so UGS contribute significantly to all outdoor leisure activities. According to a study conducted, 97% of city dwellers in Helsinki, Finland, participate in some aspect of nature every year. A daily or alternate-day visit to the outdoors is made by half the population (Neuvonen, Sievänen, Tönnies & Koskela, 2007). The green environment of the city provides nearby resources for emotional warmth and relaxation (Heidt & Neef, 2008). In Mexico, conveniently located 'Chapultepec Park' attracts around 30 lakh people each week. (Sorensen, Smit, Barzetti, & Williams, 1996).

ii. Human Health

Those connected to natural areas exhibited rapid relief in stress, as opposed to those connected to urban environments, where stress levels continued to increase. (Bolund & Hunhammar, 1999). According to the same analysis, a patient in a hospital whose room faced a park recovered at a faster pace and needed half as many strong pain relievers as a patient whose room faced a concrete wall. This demonstrates emphatically how city inhabitants' physical and emotional health can be enhanced by urban green spaces. A different investigation carried out in a Swedish city discovered that the stress levels of people depended on the amount of time spent in green areas. If more time is spent outside in green areas, people are less stressed. (Grahn & Stigsdotter, 2003). Urban sacred natural sites, which offer cultural and environmental advantages are under growing threat from urbanization. These locations, which range from Nepal to Poland offers spiritual advantages in addition to ecosystem services like reducing environmental pollution. Some of them have been listed as UNESCO World Heritage Sites, drawing visitors. Diverse management approaches and users should

be considered in future conservation initiatives. (Ormsby, 2021)

People's Perception of UGS

It has been quite clear that UGS benefits humans in multiple ways, ranging from pollution control to social and psychological benefits. However, in general, humans are not aware of the benefits of it and hence do not take any actions towards conserving it. No long-term conservation initiative can ever be successful in any country without environmental education and awareness among regular citizens, as well as without enlisting the common people as significant stakeholders in the process of preserving our natural habitats.

The Need for Inclusion of Sustainable Development in Education System

Learners must be educated in order to comprehend the situation at hand as well as its future impact. Genuinely desire to preserve the earth and its environment, there is need to modify our methods of interaction with it, the ways in which we exist, produce, and use it. Sustainable development education must be a fundamental shift everywhere (Vieira, Rumenos, Gheler-Costa, Toqueti, & Spazziani, 2022).

Studies have revealed a substantial correlation between lower levels of education, the human development index, and higher rates of deforestation (Godoy, Groff, & O'Neill, 1998). UNESCO (2021) has insisted that EE become a required subject in all nations' curricula by the year 2025 so as to successfully promote citizen participation and action on major global concerns. Introducing education on the environment from an early age can have an impact on children as well as parents. A child's environmental literacy can help them develop a lasting love of and connection to the natural environment.

People may become callous due to a loss of connection to nature and a lack of ecological knowledge, which makes them uninterested in creating eco-friendly socioeconomic systems and lifestyles that are in harmony with the environment. Building awareness among the community regarding the issues the environment faces can help in forming effective policies and creating remedies for these issues. In this manner, environmental education would support environmental protection and nature connection through a top-notch framework that includes consciousness, awareness, attitudes, capability, and engagement, in which individuals engage with the ecological environment to promote people's health (Vieira, Rumenos, Gheler-Costa, Toqueti, & Spazziani, 2022). Without education, which requires evaluating, decoding, comprehending, incorporating, and acting for the greater good, humanity has no future (Brandao, 2008).

The significance of environmental education at this time is because of the critical requirement for ecological responsibility and consciousness to more efficiently promote the repair and restoration of the environmental surroundings by battling the detrimental impacts of our activities during the preceding decades. The primary goal of EE is to provide both conceptual and applied activities in order to: encourage public engagement in order to lessen the negative repercussions of human activity; and strengthen civic responsibilities concerning nature and environmental control (LAYRARGUES, Pomier, & Ferreira, 2011). Both of these can enhance the wellbeing and quality of life of people and other creatures, as well as the environment (Vieira, Rumenos, Gheler-Costa, Toqueti, & Spazziani, 2022). Particularly for primary school students, initial and consistent exposure to the environment

may be more important for optimal learning and achievement.

Through environmental education, engagement among people can help improve and enhance the green spaces around them. As the students in cities are surrounded by a lack of nature, they grow detached from the environment and their duty towards maintaining it. A child's growth of the cognitive intellect, the nervous system, psychological wellbeing, and well-being are all enhanced by exposure to the environment. Stress, anxiety, and aggression are also decreased, as is the risk of cardiovascular disease, obesity, and diabetes (Frumkin et al., 2017). (Bhat, Zahid, Sheikh, & Parrey, 2017) in their paper has explained how educating the citizens about environment impact sustainable development.

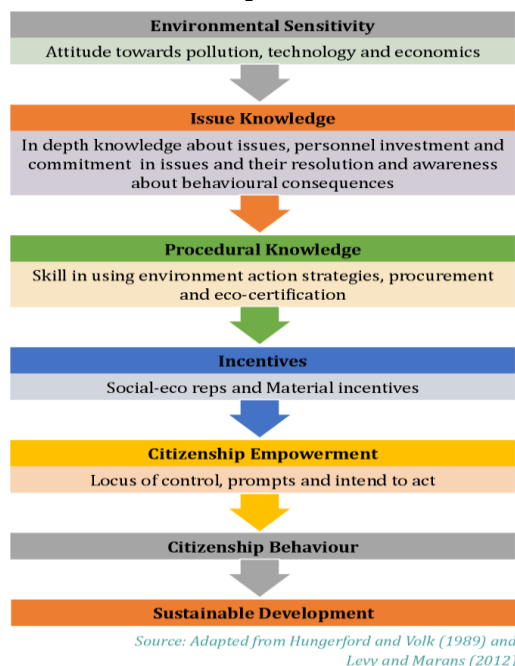


Figure 2: Environment Citizenship Behavioural Flowchart (Bhat, Zahid, Sheikh, & Parrey, 2017)

Scenario of Environmental Education in India

Environmental education is an important part of a lifetime education program that

adapts to global changes by understanding major issues and developing qualities and abilities for improving life and conserving the environment while considering ethical values. Environmental education's primary goal is to help people and communities acknowledge how the environment and built environment behave as a consequence of on-going interactions between biological, physical, social, economic, and cultural factors. It also strives to give people the information, morals, and practical abilities they require to actively participate in recognizing and resolving environmental problems as well as managing the environmental quality (UNESCO, 1977).

India's supreme court has mandated environmental education in India, and the NCERT is in charge of implementing it. NCERT created the "Protection of the Environment" component of the National Curriculum Framework (Global Environmental Education Partnership, n.d.). Several funding mechanisms, such as government grants, trusts, and CSR programs, may be used to support environmental education efforts in India.

Supreme court has made environmental education compulsory to be included in the curriculum. The NCERT is responsible for monitoring the directive. According to Article 48A, the Indian constitution, along with the respective states, notes to "take measures to protect and improve the environment and to safeguard the forests and wildlife of the country (*THE CONSTITUTION OF INDIA.Pdf*, n.d.)." Along with it, another article 51-A states that "it is a fundamental duty of every citizen to protect and improve the natural environment, including forests, lakes, rivers, and wildlife, and to have an ecological compass for the living creatures (*THE CONSTITUTION OF INDIA.Pdf*, n.d.)." The only way to protect it is by providing education and awareness among

the people. The current position of environmental education in Indian schools stems from the 1986 National Policy of Education, which designated "Protection of the Environment" as a common core for the NCF (Global Environmental Education Partnership, n.d.).

When the Indian Supreme Court (Supreme Court of India, 1991) ruled that environmental literacy should be integrated into all academy levels, it brought great progress to the country. The court has ordered environmental courses to be mandatory for students as an opportunity to integrate an interest in sustainable development into higher education. The University Grants Commission (UGC), which is liable for setting policy groundwork for colleges and other higher education systems, received further plans of action from the court to aid and ensure the delivery of this course. Even though earlier environmental education was part of the education system of India, it was not adequately directed, and no specific steps were taken to incorporate it into the system. However, in recent years, due to the grave necessity of raising awareness among people regarding the environment, appropriate steps have been taken by the government.

Challenges faced

One of the few nations across the globe that have formal ENVIRONMENTAL EDUCATION curricula is India. However, according to Yale University, 65% of Indians are still unaware that climate change is a threat. 80% of the remaining 35%, who are primarily educated individuals, view it as a major threat. There have been many initiatives taken throughout the years to incorporate environmental education into the education system, but the topics covered are unrelated to the current issues of climate change.

Environmental education in India has been significantly impacted by the country's rapid economic expansion because of the numerous environmental problems brought on by the depletion of natural resources. "Additionally, the Indian educational system has changed to develop consumers who can contribute to the global economy due to the level of pollution, overpopulation, fast deforestation, and overexploitation of natural resources in the drive to become a global economy (Foundation, n.d.)."

There is a lack of practical knowledge regarding the environment. This can help students' associations with environmental issues become stronger. Students will be inspired to come up with answers once they understand how directly connected environmental challenges are to their existence and development. It will cause them to adjust their attitude. This should then be related to the complicated international environmental issues. Moreover, to encourage students to actively participate in addressing environmental issues in their immediate surroundings, curricula should encourage practical training. Students should be educated about world realities outside of books.

Conclusion

The world of today is in grave danger of a climate crisis. One of the ways to mitigate the crisis is through sustainable development in urban areas. The cities of today are deprived of nature, and their impacts are seen all over the world. Their needs include the inclusion of UGS in the cities in order to sustainably develop them. Urban green spaces provide multiple ranges of benefits to the people that help in the cities' overall sustainable development. There have been several policies and laws passed in order to accomplish the growth of UGS. But one of the major problems

hindering successful implementation is lack of awareness among people. This lack of environmental awareness is due to both the lack of literacy and the lack of proper environmental education in the schooling system.

Awareness in an individual can make them sensible to the damage and encourage them to take part in efficiently developing cities. India has taken various measures and is one of the few countries with official environmental education. It is time to redesign our educational systems so that learning is based on sustainability, conservation, and nature.

Further research on the study can explore the ways in which environmental education can be improved. There has been enough literature on the challenges in the Indian education system. Improvement strategies can help decrease environmental illiteracy among citizens and overall help in the development of cities that are both environmentally friendly and resilient.

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