Plant Archives Vol. 23, No. 2, 2023 pp. 262-268 e-ISSN:2581-6063 (online), ISSN:0972-5210

Plant Archives

Journal homepage: http://www.plantarchives.org
DOI Url : https://doi.org/10.51470/PLANTARCHIVES.2023.v23.no2.044

ENVIRONMENTAL EDUCATION AND ITS POLICIES IMPLEMENTATION IN INDIAN EDUCATION SYSTEM: A PERSPECTIVE

Sunil Kumar[1], Puja Singh[2*], Anoop Yadav[3] and Pradeep Kumar[1]
[1]Department of Industrial Waste Management, Central University of Haryana-123031, India
[2]Amity School of Earth and Environmental Science (ASEES), Amity University Gurugram-123001, India
[3]Department of Environment Sciences, Shri Vishwakarma Skill University, Gurugram-121102, India
*Corresponding Author Email: pujaenviro@gmail.com

ABSTRACT

Humans' haphazard activities have increased stress on nature, resulting in local, regional, and global issues such as pollution, loss of natural resources and biodiversity, Global Warming, Climate Change, and Ozone Layer depletion, all of which have an adverse effect on health and security of food. Environmental deterioration and substantial and persistent impediments to sustainable development are caused by changing drivers such as population expansion, economic activities, and consumption habits. Environment education is a key step that helps people to know about the significance of the environment and its benefits for living beings as well atmosphere also. Environmental policies are the framework for the revolutionary and optimistic change for the understanding of the importance of environmental health and their valuable resources for the future generation. Educational institutions (schools, colleges, universities) are the source point of environmental education policies, their awareness and implementation among students and other people towards protection and sustainable development to achieve a circular economy. Thus, the study aims to fill the gap in research and assessment by critically analysing the system of environmental education at different levels. It would bridge the gap in research for policymakers and society to execute their franchise for environmental conservation and sustainable development by highlighting the difficulties in environmental education with authentic evidence.

Keywords: Environmental Education, Policies, Implementation; Environment health; Resources; Sustainable development.

Introduction

The world is a place brimming with limitless possibilities. As the world has progressed in terms of technology, it appears that environmental degradation has increased in the quest of development. In this scenario, the Sustainable Development Goals (SDGs) have emerged as a top priority until 2030, requiring a coordinated effort, one of which is education on the environment. Environmental education is a term that refers to the entire process of studying how nature works and growing environmental consciousness in order to ensure that students gain knowledge, skills, values, and a desire to take action on environmental issues (Bhat *et al*., 2017).

Worldwide, living beings depend on a healthy environment for life to sustain. During the last fifty years, it has been increasingly recognized that the life-sustaining forces on earth have rapidly evolved and may possibly endanger the biosphere's basic existence. The main cause of damage to the earth's life-sustaining environment is environmental degradation due to human-caused activities. Water, soil, and air pollution, depletion of the ozone layer, climate change, deforestation and species destruction are just a few of the environmental challenges that impact the entire planet. Environmental deterioration has become a severe issue in today's globe. Over the last 20 years, the continuously increasing environment problems started the attention of scientific community and policy maker towards the environment protection. Environmental concerns are serious threat unless the problems of nature can be solved or neglected then future generations may find the earth unsuitable for life (Singh, 2018).

The study focuses on the relationship and interaction between nature and human systems to the depths of the earth and how to properly care for it to make it a better place is known as environmental education. Environmental educators must equip students to be critical thinkers, decision-makers, and communicators about a variety of global issues, notably environmental degradation and its influence on the ecosystem. Environmental education will aid in the acquisition of environmental knowledge, which will aid in the development of a positive attitude toward the environment and a sense of empowerment (Kumari, 2021). Learning about the environment, on the other hand, requires dedication and determination while acquiring environmental education. People will be more curious and enthusiastic to investigate and engage in the proper path for environmental conservation as a result of increased awareness. To transfer environmental education, the educational system must undergo significant changes and should place a strong

emphasis on Education and Training (ESD). Experiential teachings should be incorporated into school programs that help pupils connect with nature and develop the skills necessary to preserve and protect it (Singh, 2018).

Environmental education is a new educational theme and its main aims are:

- Assist students in gaining a thorough understanding of the environment, especially in terms of how the ecosystem works and the human impact on the environment
- Promote constructive views on natural value
- Develop environmentally friendly practices, such as recycling and waste disposal
- Student involvement in rehabilitation programs and activities
- Develop learner's psychological and spiritual relationships with nature

So, it is a critical component of any integrated environmental strategy that aims to aid in the construction of an environmental training centre in order to contribute a crucial step in establishing the country's environmental education approach and agenda (Kartikeya, 2000; Brien, 2007). The purpose of this study is to fill the knowledge gap by reviewing environmental education, its necessity, policy, and implementation in the educational system.

Environment education and its policies

Fien, (1993) discussed that the environment has become "Too short for the normal sense of learning," says the author. Education about the environment has had a significant influence on preserving ambiguous behaviours. It assists in the management of advanced planning and unregulated economic expansion, trains engineers and managers, conducts research, and develops technologies that are harmful to the environment. Environmental protection begins with the establishment of new educational concepts that regulate the holistic, interdependent integration of environmental processes, market pressures, cultural values, equitable judgment, government acts, and the ecological influence of human activities.

At a United Nations meeting in 1972, the Indian government took steps to safeguard and develop the environment, as well as the country's forests and wildlife, by delegating responsibility to state governments. Following that, the Indian government developed and implemented several other laws/acts for environmental protection and conservation in the education system. As a result, the sub-rule was revised at the ground level to safeguard and promote Forests, lakes, rivers, and fauna, as well as empathy for living beings, are examples of the natural environment.

In response to environmental concerns, the Government of India formed the Ministry of Environment in 1980, which was later renamed the Department of Environment and Forestry in 1985. The national education policy (NEP) 1986 and subsequent education policies (NCFSE, 2000, NCF 2005) provided environmental education. It was a prominent feature of school education. In today's, the focus on Environmental knowledge and comprehension has become an important aspect of every student's education (formal or informal). This includes allowing students to investigate and comprehend their own surroundings, leading to educated knowledge and values, as well as active participation in resolving the current environmental issue (Bhat *et al*., 2017). The NEP, 1986 states that "environmental protection is a value that should be at all stages of education. Environmental education is also an important part of the school education modules (Das, 2020).

Due to a major lack of current systems, increased environmental consciousness and deteriorating environmental circumstances, the necessity for informal education and training became essential. Environmental education, such as in environmental studies, begins at an early age. According to the national curriculum statement (NCF)-55, environmental education is a major component of several subjects such as political science, biology, history, art, health & physical education, Physics, mathematics, chemistry and music just a few examples. According to the NCF-2005 follow-up, the National Council for Educational Research and Training (NCERT) prepared the study materials for all grades of school instruction (Das, 2020). Environmental studies (EVS) portions were connected with language and mathematics in classes I and II, while it is tied to the study of our environment in classes III to V (physical, biological and social and cultural). The NCERT has produced the EVS study materials for the science and social sciences sections. (NCF 2005) (Uppal, 2006; 2007; Kartikeya, 2000; Brien, 2007).

Environment policies in NEP 2020

NEP-2020 offers us a roadmap to rediscover, redefine and reorganize bhartiya himself to become a world leader (vishwaguru) in which equality, equality and brotherhood will be celebrated. They add nothing to the current system of environmental education. Satisfied with current environmental education arrangements. It provides importance to the goals of sustainable development related to environmental benefits (Sujata Kumari, 2021). The policy also emphasizes the dissemination of traditional knowledge that is particularly beneficial in improving problems with the environment. However, India's school system fails in environmental education, and there is a lack of understanding of greater ecosystem and ecological education. As a result of this approach, India lags behind in environmental research. As a result, it was critical that we discuss the much-needed improvements in the environmental education learning and teaching system (Sujata Kumari, 2021).

The current level of environmental degradation is different from human history, and if left unevaluated at the current level. Excessive use of natural resources is a threat to the environment, in that case, environmental education should teach control to use, and that we can ultimately promote biodiversity conservation and other natural well-being through the change in use patterns. This education have certain challenges and for that we require to re-evaluate how we conduct research for training of environmental experts, how the rules we develop, and how we educate the mainstream audience about environmental issues. This can be accomplished by beginning to review natural science texts in order to debate current challenges in educational institutions. For example, many books in India still refer to the depletion of the ozone layer as a problem. Following the discussion of the Montreal Protocol in 1987, Over the Antarctic, the ozone layer has been rapidly shrinking. Many people believe that this global problem has been solved. The focus of these

books should be on individual environmental challenges rather than just a handful of the world's most well-known. Exposing kids to the environment is one method to help them develop more personal motivations for saving it. Students in India, for example, should be familiar with their country's biodiversity (plants and animals). They are not harming the Indian ecosystem if they only see leopards, elephants, and rhinos as the most endangered animals in the country. They won't be able to do anything to conserve such species unless they invest in their protection, which is also a very indirect linkage to the cause. In aspects of biotic and abiotic community of ecosystem such as temperature, geography, geology, race, flora and fauna, society, and economics, India is a vastly distinct country. As a result, environmental education must be localized and disseminated throughout the country (Sujata Kumari, 2021).

The importance and need of environment education

The number of consumers or population will grow in the future decades, which will have a direct impact on world resource availability. The world's wealth is already under strain, and it is eroding at a quicker rate than ever before as a result of global population increase and rising human needs. In accordance with the assessments, the worldwide human population will reach up to 9.07 billion people by 2050, with 62 percent of the population living in Africa, South Asia, and East Asia. These figures should serve as a stark reminder of how humans may destroy the environment, and why they must seize this ecological opportunity and work to ensure that the present and future are based on values of environmental justice, equality, and human progress. As a result, education provides an important role in these challenges as a pillar of modern society. Better education can help to determine social progress and plan for global development in the future. As a result, education should focus on current environmental challenges, and it will not suffice to just qualify someone for the job. People should be equipped with principles that will help them comprehend their interactions with the community and the environment as a result of their education. As a result, environmental education becomes a one-hour requirement in addition to information transfer, and it will be the ideal procedure for promoting children into responsible and educated citizens of the future (Singh, 2018; Das, 2020; Sarita *et al*., 2016).

India plays a major role in the world contributing about one-third of the world's poor people population. However, it continues to struggle to deliver essential public services to its citizens, such as clean air, water, food, health care, and education. In terms of education, India guarantees everyone the right to free education. So, despite recognizing the standards for teaching the environment, the 1986 education policies document underlines that "there is a strong need to increase awareness of the environment." The National Council for Research and Training (NCERT) emphasizes population, land and utilization, diversity of resources, land pollution and human and environmental relations. Environmental education begins at a lower level with building foundations using conventional practices and teaching a kid a sense of accountability for the natural world. Children are introduced to out-of-school activities, problem-solving, and community programs relating to environmental issues at the second level. This includes teaching kids about the fundamentals of nature, such as nature, resource distribution, population dynamics, population equality, and hunger and malnutrition issues (Bhatia and Bhatia, 2013; Das, 2020; Kumari, 2021). Mainly six components i.e., knowledge, education (related to environmental health, benefits, issues), awareness, behaviour (social-emotional development), environmental education, participation and implementation are taking part in major role for the development of environmental education (Fig.1).

Environment education in the education system is crucially important for employing a healthy environment for the future generation. The component of environmental education that play a significant contribution are:

(i) Start awareness about environmental issues

(ii) Gain of facts about environmental education

(iii) Changing people's perspectives

(iv) Gain skills to solve the issues

(v) Motivate people to motivate others

These components are essential for solving the problem of the environment in our ecosystem because without these people would not be able to recognize the actual problems or facts of the current critical situation of the environment.

The students in educational institutes need to know about the environmental issue as early as possible and to understand the concept of protection of nature, the importance of their behavior, a contribution to the environment, etc. Through this, the educational institute can create a healthy mindset in the students. Environment education help to be aware of the students about necessary knowledge and facts about the environment such as environmental concerns, their origins, how they can fix the problems, and what function they play in this system. If students are aware of the environment education, it can help to adopt new habits in the youngster and take steps for the protection and preservation of their surrounding environment. Several actions or steps were taken by the student in educational institutes for the protection of our environment such as recycling, riding a bicycle instead of a fuel vehicle, planting trees, turning off the light when it is not in use, planting a mini garden, avoid use of plastic bags, wasting less natural resources such as water. Students or children are high influencers, so environmental education promotes students to influence their guardians and parents to drive less, quit smoking, save energy, etc.

After getting the environment education, students can voluntarily participate in different activities like cleaning, starting environmental awareness workshops, take participating in recycling movements, participating in ecological restoration and aquatic environment conservation, etc.

Environment education in India

In the case of India, although environmental considerations have always been part of living culture, environmental education officially Environmental themes were only included in official publications in the 1980s as part of the national module for basic education, designed by the NCERT (Sonowal, 2009). The Indian government also attempted to raise awareness about environmental exploitation and protection through the Environmental Orientation to School Education (EOSE) program, which was supported by the Ministry of Human Resource and

Development (Iyengar and Bajaj, 2011). Although education commissions have mandated environmental education and environmental protection laws since independence (Table 1). It was only a matter of necessity when the Supreme Court of India ordered all Indian provinces to teach "green education" in 2003.

Haydock and Srivastava (2017) conducted a study in Madhya Pradesh to analyse sub-curriculum ideas, environment education study materials in India. Although there was no consensus on philosophical views, the researchers observed in their comments that– for example, the chapter that opened the door on the industrialization of pollution and closed down mainly by holding the garbage dumpster–suggested solutions are often on the road. Individually, without attracting attention to the formal ecosystem problems, and thus the necessity for a systematic reply. The fact that class time was spent increasing the scientific component of the answer rather than attracting awareness to the bigger picture of society was also taken into account. In reality, the researchers found that neither textbooks nor classroom education addressed the social aspects of natural disasters and the dynamic factors at play. Although the causes and solutions for the environmental disaster appeared to differ from person to person in the teacher's conversations, there was agreement on the importance of not jeopardizing India's economic development and the necessity to balance environmental conservation with the development agenda. Another key finding throughout the board was a positive perception in the idea of 'natural balance' (Dsouza *et al*., 2021).

Researchers explain why this allegation is based on no scientific evidence. They considered ecological balance as not a stable condition in which the earth will return if humans can interfere with it. When remedies to the current problem are raised, and learner students grow up with some new and innovative idea that are raised, the article makes it plain that this belief is problematic (Haydock and Srivastava, 2017). Krishna Kumar (1996), in his discussion of the environmental education curriculum in relation to the broader school curriculum, points out that the two spouses' beliefs serve different goals. The curriculum's science education is plainly predicated on murdering the child's feelings for the environment with a resource-intensive approach, yet the same curriculum's environmental education calls for the child to look at the world with compassion. Given the importance of science education in India, conflicts over basic principles will not only confuse children but will also ensure that environmental education is ignored (Krishna Kumar, 1996). Other research conducted in Bhopal reveals that local content and context are lacking from Indian textbooks (Iyengar and Bajaj, 2011). Despite the fact that, a largest environmental accident, the Bhopal gas disaster, occurred in a neighbouring location, the study indicates that it is not included in the natural textbooks of local Bhopal schools. Individual, technologically focused solutions to problems like trash management begin to bypass major industry difficulties and waste generation, according to the report (Dsouza *et al*., 2021).

The Government of India established NCERT as an independent agency to assist both government and private institutions in the creation and implementation of policies to improve school education. NCERT's key tasks include textbook preparation and publication, as well as pre-work teacher training, the development of novel teaching practices, and serving as an important agency for guaranteeing universal primary education (NCERT). NCERT creates natural textbooks that, in accordance with the National Curriculum Framework, connect a child's health at school with his or her personal experience (NCF) 2005. The declared goal of these publications is to promote student-centred reading while avoiding stark divisions between courses. (Uppal, 2006; 2007).

Issues and Challenges for Environmental Education in India

Due to the existence of several issues, human is struggling to protect the environment's quality and its resources. There is a need for change in habits and behavior toward the environment and take active participation and participation. Air, water, and land are the most significant environmental challenges. Pollution, global warming, garbage disposal, deforestation, climate change, overcrowding, and species extinction are just a few of the issues facing the world today. CEE (2002) claims that, the challenges in the Indian context are

- To establish the correct balance of centralized and decentralized approaches and efforts
- Getting the word out to a big number of people at a low cost
- Making environmental issues relevant and meaningful to a variety of people
- Effectiveness of environmental education, its need at different levels and sustainable development concerns among environmental policymakers as well as agenda
- Economic resources for Environmental Education.

Conclusion

The current study concludes that various international and national efforts have been initiated that played a key role in the transmission of to communities and educational institutions, environmental education is provided. A plan adopted by both governmental and non-governmental entities provides the foundation for a sustainable and caring environment. Students already have a great deal of knowledge about their environment. The main aspects of environment education should be for children to learn about the processes that occur in the natural world. Environmental education should be able to provide concrete answers to environmental issues as well as a platform for student and teacher participation in field-based Educating and learning. The goal of this education research is to highlight the interconnection of social, political, economic, and environmental situations that are global in scope and have global implications. The study also highlights a number of elements that encourage excellent citizen behaviour and, as a result, lead to long-term development. True environmental conservation will only occur when people see the value of nature and adjust their attitudes toward it by exhibiting behaviours that are in tune with it. Participation of young people in environmental education programs increases their understanding of human interaction with the environment and increases their sense of environmental responsibility. In order to promote sustainable development, various campaigns/events (trips, seminars, conferences, workshops) require planning targeted at different level for the larger

involvement. As a result, the study seeks to fill a research void by evaluating the proposal proposed by the Indian government in 2003 and directed by the Supreme Court in the hopes of facilitating further upgrading of the existing system of environmental education in order to develop eco-literates.

Table 1 : Different laws and policies for environmental protection in India

Sr. No.	Law/Policy/Act	Year
1	Indian Forest Act	1927
2	Wildlife Protection act	1972
3	National Wildlife Action Plan	1973
4	Environment Protection Act	1986
5	National Forest Policy	1988
6	Foreign Trade (Development and Regulation Act)	1992
7	1st Five Year Plan	1951
8	2nd Five Year Plan	1956
9	3rd Five Year Plan	1961
10	4th Five Year Plan	1969
11	5th Five Year Plan	1974
12	6th Five Year Plan	1978
13	7th Five Year Plan	1980
14	8th Five Year Plan	1992
15	9th Five Year Plan	1997
16	10th Five Year Plan	2002
17	11th Five Year Plan	2007
18	Forest Conservation Act	1980
19	Public Liability Insurance Act	1991
20	Biological Diversity Act	2002
21	National Green Tribunal Act	2010
22	Easement Act	1882
23	Indian Fisheries Act	1897
24	Factories Act	1948
25	Merchant Shipping Act	1970
26	Water Prevention & Control of Pollution Act	1974
27	Water (Prevention & Control of Pollution) Cess Act	1977
28	Water (Prevention & Control of Pollution) Cess Rules	1978
29	Coastal Regulation Zone Notification	1991
30	Air (Prevention & Control of Pollution) Act	1981
31	Air (Prevention & Control of Pollution) Rule	1982
32	Air (Prevention & Control of Pollution) Amendment Act	1987
33	The objective of Hazardous Waste (Management & Handling) Rules	1989
34	Manufacture, Storage, Import, Export, and Storage of hazardous Micro-organisms/ Genetically Engineered Organisms or Cells Rules	1989
35	National Environmental Tribunal Act	1995
36	National Environment Appellate Authority Act	1997
37	Biomedical waste (Management and Handling) Rules	1998
38	Environment (Siting for Industrial Projects) Rules	1999
39	Municipal Solid Waste Management & Handling Rules	2000
40	Ozone Depleting Substances (Regulation & Control) Rules	2000
41	Batteries (Management & Handling) Rules	2001
42	Noise Pollution (Regulation and Control) (Amendment) Rules	2002
43	Ganga Action Plan	1986
45	Namami Gange Programme	2014
46	Yamuna Action Plan	1983

Fig. 1. Different stages of environmental education integrating sustainable development

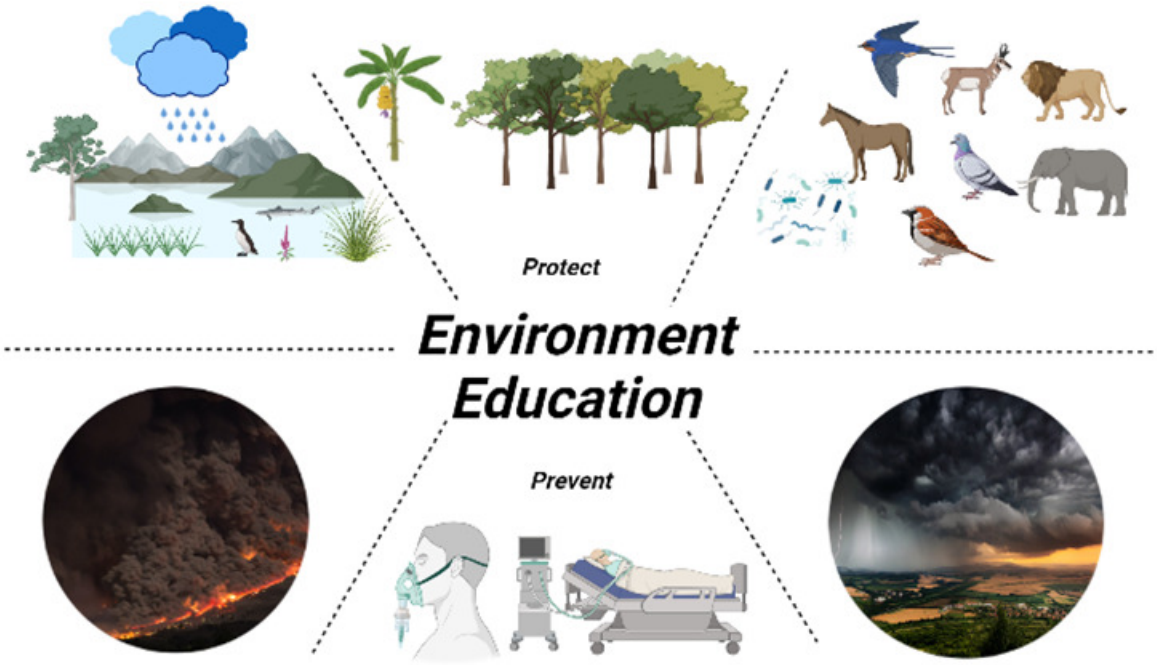

Fig. 2 : Graphical Abstract

Acknowledgments

The author would like to acknowledge Amity School of Earth & Environment Science, Amity University, Gurugram for providing support for research.

References

Bhat, S.A., Zahid, A.T., Sheikh, B.A. and Parrey, S.H. (2017). Environmental education in India: An approach to sustainable development. *FIIB Business Review*, 6(1): 14-21.

Bhatia, G. and Bhatia, M. (2013). A Study of Environmental Awareness among Post-Graduate Students of Distt Yamuna Nagar, Haryana. *IOSR Journal of Humanities and Social Sciences*, 11(5): 43-46.

D'Souza, C., Brahme, M. and Babu, M.S. (2020). Environment education in Indian schools: the search for a new language. *Journal of Education for Sustainable Development*, 14(2): 174-189.

Das, S. (2020). Environmental Education Prospects in Schools. (Source: http://womenforindia.org/wp-content/uploads/2020/11/Environmental-Education-Prospects-in-Schools.pdf).

Environmental Education System in India. (Source: https://www.yourarticlelibrary.com/india-2/environmental-education-system-in-india/84854).

Fien, J. (1993). Education for the Environment: critical curriculum theorising and environmental education (Geelong, Deakin University).

Haydock, K. and Srivastava, H. (2017). Environmental philosophies underlying the teaching of environmental education: A case study in India. *Environmental Education Research*, 25(5): 1–28.

Iyengar, R. and Bajaj, M. (2011). After the smoke clears: Toward education for sustainable development in Bhopal, India. *Comparative Education Review*, 55(3): 424–456.

Kartikeya. (2000). Strategies in Environment Education–Experiences from India, International Meeting of Experts in EE, UNESCO, November, 202-204.

Kumar, K. (1996). An agenda of incoherence. *Down to Earth*, 4(17): 32-34.

Kumari, S. (2021). Environmental Education In Context Of New Education Policy 2020. *International Journal of Engineering and Technology*, 8(3): 1929.

O'Brien, S.R.M. (2007). Indications of environmental literacy: using a new survey instrument to measure awareness, knowledge, and attitudes of university-aged students. Retrospective Thesis and Dissertations. 15055. (Source: https://lib.dr.iastate.edu/rtd/15055).

Sarita, Dahiya, R., Kusumlata (2016). A comparative study of environmental awareness of boys and girls of secondary and higher secondary schools. *International Journal of Applied Research*, 2(9): 247-251.

Singh, A. (2018). Review of Importance of Environmental Education and Awareness Strategies. *G-Journal of Environmental Science and Technology*, 5(4): 46-48.

Sonowal, C.J. (2009). Environmental Education in Schools: The Indian Scenario. *Journal of Ecology,* 28(1): 15-36.

Uppal, S. (Ed.) (2006). Looking around: Environmental studies textbook for Class III (December 2018 ed.). National Council of Educational Research and Training.

Uppal, S. (Ed.). (2007). Looking around: Environmental studies textbook for Class IV (December 2018 ed.). National Council of Educational Research and Training.