

Current Status of Environmental Education in India: An Overview

Sonali Roy Chowdhury¹ and Dr. R.D. Bharati²

Research Scholar, Department of Education¹

Associate Professor, Department of Education²

OPJS University, Churu, Rajasthan, India

Abstract: *India is home to several governmental and non-governmental organizations that work to preserve the environment, but considering their wide variety of objectives and methods of operation, they can provide us with the biggest obstacle of our lives. It is our responsibility and privilege as scientists, professionals, and educators in India to investigate, understand, build upon, and use this complicated resource situation. We will collaborate with groups and individuals that share our values in order to achieve our common goals of protecting the environment. The way we now prioritize environmental education will have long-term effects on the quality of living in the future. We must devote substantial attention to providing meaningful and effective environmental education if we hope that future generations will benefit from our natural inheritance. This article outlines some of the problems that environmental education in India is now and potentially experiencing and offers suggestions on how to resolve them.*

Keywords: Environment, challenge, education, future, responsibility, India

I. INTRODUCTION

Environmental education is the most crucial component of any country's efforts to solve environmental challenges. Despite their complexity, they must be pertinent to the needs and desires of India's rural and urban inhabitants, and they must constantly adapt to the country's rapidly changing social and technical environment. Raising awareness and educating people about environmental issues are the first steps in initiating a struggle in every country. Any effective environmental program has to include people who are aware, knowledgeable, and driven. Education professionals in developing countries such as India will have to develop new competencies, approaches, and solutions in the twenty-first century to address the environmental challenges that are constantly evolving in both urban and rural settings. Environmental education must take into account the needs and interests of the community within the ever-evolving social and technological context. We must constantly evaluate, revise, and modify the ways in which we conduct research or provide training to environmental professionals and educators in light of these barriers to environmental education. In addition, a few crucial communication techniques are necessary for meaningful and successful environmental communication with the general population.

Improving environmental education for the general population has already made great progress. Particularly in terms of determining the objectives of environmental education, this is valid (Ruskey and Wilkie, 1994). Environmental educators in North America have been at the forefront of developing mechanisms that will increase the strength and reach of environmental education standards throughout the last several years. The groundwork for environmental education is already solid. Why not in any other developing country, such as India? Under the Environment Protection Act of 1986, notifications are given out on a regular basis. The Ministry of Environment and Forests is in charge of most environment-based projects, with an emphasis on the management and control of hazardous wastes, chemicals, and microorganisms. With 507 monitoring stations dispersed around the country, the Central Pollution Control Board can confidently claim that it has found 26 medium- and 13 heavily-polluted river segments (India, 2001). However, more has to be done in terms of public awareness campaigns about the environment, conservation, and pollution prevention and management. The Ministry has developed a network known as the Environmental Information System (ENVIS) to improve environmental education and awareness for all age groups and to disseminate information "to all concerned" (India, 2001). Composed of 25 subject-oriented centers spread around the country in diverse organizations,

the ENVIS network is a decentralized information network for collecting, storing, retrieving, and distributing environmental education with an emphasis on environmental priority areas. Still, it's possible that the typical individual is ignorant of its existence. The much-discussed National Environmental Awareness Campaign has also been overseen by the Ministry since 1986. Even if it is appreciated, a month-long awareness campaign that is mostly restricted to India's cities is insufficient to successfully instruct the general populace. Governmental and non-governmental organizations abound in India, but considering their disparate objectives and modes of operation, we could be dealing with a once-in-a-lifetime problem. As scientists, workers, and educators in India, we have the opportunity to investigate, examine, understand, build upon, and use this complex resource scenario, cooperating with like-minded individuals and organizations to achieve a common goal. Future living standards will be significantly impacted by the public education tactics we now use on the environment. Effective and meaningful environmental education is a critical undertaking if we are to reap the benefits of our natural heritage for present and future generations. This article outlines a few of the problems that environmental education in India is now and potentially experiencing and offers suggestions on how to resolve them.

1. The Need to Manage the Complexity of the Indian Situation

Understanding and evaluating environmental challenges in India has become more difficult. However, rather than being reasoned through to workable solutions that protect the environment, the environmental issues that often make headlines are usually communicated via disorderly demonstrations and confrontations. Furthermore, prudent management of environmental issues may sometimes be subordinated to the political aspirations of individuals having a stake in an unsustainable, resource-extractive approach to economic development. Because it is essential to convey the complexity of today's environmental difficulties in a clear and understandable manner, science will always be a key component of environmental analysis, interpretation, and problem-solving. Moreover, the difference is bigger when considering other environmental issues. A certain level of scientific ability is necessary to comprehend these issues, and data suggests that US science and math education lags below that of other industrialized countries. Environmental protection requires public education about the importance of healthy ecosystems, but the traditional approaches to environmental education are facing challenges from the rapid advancement of science, the rapidly expanding role of information technology, and the increasingly complex nature of modern society. Despite growing public awareness of environmental challenges, environmental illiteracy continues to be a major obstacle to protecting our life support system. Although some of the examples and teaching models may pertain to freshwater systems, the concepts underlying the instructional strategies may be applied to other environmental environments. A portion of the information provided here may be helpful to other developing countries who are having trouble with environmental education. The lack of clean water and supplies is one of the biggest problems the developing world is now experiencing. When water is scarce, people need to use it carefully. This might include offering a place to wash, clean, and store pots and pans in addition to sharing a water supply for drinking and cooking. It may also include giving household animals access to water. The amount of pollution in the water rises a little bit each time a lot of people utilize it for various purposes. Imagine a river, like the Gomati, a tributary of the Holy Ganga in Northern India, that provides a multitude of agricultural settlements along its banks with their only source of water. It is possible that the people living in the first village will take extra precautions: they will collect their drinking water from above the settlement, wash everything a little farther downstream, and let their animals drink from the river as it flows by the hamlet. They could make an effort to keep themselves healthy by being very cautious and maintaining basic hygiene. They cannot protect themselves against diseases and parasites that wild animals carry into the water or from dead animals that rot in the river upstream. The river's water will have been tainted as it leaves their community by food remnants from scrubbed pots and pans, excrement from farm animals, and washed corpses. The people who live in the neighboring village will be exposed to this tainted water and will get the associated diseases. Even if an animal perishes and falls into the only water source for kilometers around, people still need to drink the water. If the only water available has significant concentrations of chemicals, dirt, sediments, or suspended particulates, people must drink it. The problems in developing countries are the same whether the water source is a lake, river, or well: when there is not enough water, everything must use the same source, which raises the risk of pollution and disease. Assume that the locals are well aware of how serious the situation is. They would be better able to evaluate and understand the consequences of contaminated water. In terms of conserving water and preventing pollution, they would be exceptional.

As a result of their decisions and their ability to carry them out honestly, students will participate in shaping and planning their own futures. The intricacy of the scenario would increase their ability to think critically and solve problems. The context of the need for effective environmental education is the degradation of global natural resources (e.g., Gleick 2000, Postel 1999). Due to changes in lifestyle and population expansion that would need more water resources, it is anticipated that the problems of pollution and water shortages will intensify in the near future (Postel 1992, 1998). The treasured economic and cultural assets of society are increasingly under jeopardy due to the depletion of natural resources and the ecosystems that sustain them. Firth (1998) highlights three concepts: Since scientific information is the basis for informed decision-making, everyone in our society should have access to it. Understanding scientific information, especially how to use it most effectively and how it helps society, is equally crucial for people. The growth of the body of knowledge on interactions between humans and their environment is mostly dependent on science and academics. Since public concern often acts as a spur for policy creation, scientists need to effectively and more regularly communicate technical knowledge to the public (Bernabo 1995). Administrative and curricular changes that put an emphasis on educating law-abiding residents and future legislators on the stewardship of aquatic resources are desperately needed for the world's lakes, streams, and wetlands. The next generation of scientists will add to the body of knowledge required to undo the harm already done to these natural resources and protect them for future generations, therefore the changes also address their education. Christensen and colleagues (1996) provided a thorough list of requirements for science-based ecosystem management, including the critical need for effective instruction that integrates cutting-edge methods at every level of society, from students to government officials. Moreover, basic science research is just as important and challenging as effective environmental communication and education. The relationship between the condition of natural resources and the social and economic structures that the general public uses is either unknown to or unimportant to the majority of people, particularly those in positions of policymaking authority. The scientific community must effectively communicate with policy authorities about environmental knowledge and the significance of relevant research results if public policies are to reflect conservation ideals. To meet the demands of the modern environment and society, science's conventional methods of interacting with it must be reconsidered and updated (Karr 1993, 1999, Clark 1999). Taking into account India's conditions, people, and richness and diversity Environmental education programs must adapt to the requirement for:

to create new programs based on past experience and learn from successful education and outreach initiatives in order to foster an open discussion on effective environmental education and outreach initiatives. to draw attention to the need for more adaptable, thoughtful, creative, and responsive outreach and education systems. to inculcate in the average person a set of values about the preservation, enhancement, and care of the environment. offering chances for the general public to actively participate in solving and working toward the resolution of environmental problems at all levels; bringing to light philosophical and administrative issues that impede significant advancements in the field of public environmental education; assessing environmental policies and education initiatives in light of social, economic, ecological, and educational considerations; and investigating significant environmental issues from a local, national, regional, and global perspective. Initiatives and programs that result in noticeable changes in the distribution of resources and policies are necessary to supplement effective leadership and communication. Partnership efforts between different organizations, such as government agencies and educational institutions, private enterprises and nonprofit environmental groups, are among the procedures that might result in the effective implementation of environmental education. The Department of Environment in India has compiled a directory of over 150 programs related to environmental education and awareness. Although there are many excellent examples of these collaborative efforts taking place all around the world (Bjorkland et al. 1997, Clarke 1999, Allen 2001, Newton 2001, and Hudson 2001, for example), more must be done given the extent of environmental problems. Non-governmental organizations may also modify school curriculum to reflect changing society norms and perspectives. Over the last 10 years, scientists have made it abundantly evident that environmental education and outreach are essential for educating our communities and ourselves about the conservation of aquatic resources (Firth 1998). Environmental education programs need to effectively influence public opinion via the media, newspapers, and press. Scientists may learn how to communicate with the media and educate the public about their findings. This will support the people' education by ensuring that they fully comprehend and actively participate in all major environmental awareness issues. Understanding, establishing alliances, growth, goal-setting, funding, and implementation would all logically follow in the community. He examines

the effectiveness of a few of the group's environmental education and outreach programs, including contributions to elementary and secondary education, national advertising campaigns, demonstration projects, local community outreach, and national papers. We may learn important lessons from Newton summary and other large-scale efforts that apply to other environmental education programs. Professional scientific organizations with a unique ability to influence public perception and understanding of our natural resources are the Indian Science Congress and the National Academy of Sciences. By working proactively with different government and nonprofit organizations, scientific societies may influence and shape laws and useful projects that help protect aquatic environments.

2. The Important Role of Science at Every Stage

Furthermore, in an effort to further an agenda centered upon an extractive, unsustainable mode of economic development, efforts have sometimes been made to repress or minimize the scientific underpinnings of environmental understanding. This movement argues that issues like biological diversity loss, human-caused climate change, and the depletion of water supplies are not significant enough to warrant concern. It attacks environmental education in almost every aspect. In order to effectively supplement the deeply rooted value judgments and belief systems that are already common in communities, teaching about science and the scientific method is crucial for environmental education. The typical individual will find it simpler, more effective, and more efficient to evaluate environmental dangers and take necessary action as a result. When teaching materials minimize the value of science and the principles of scientific inquiry, the field of environmental education suffers. They don't leave a lasting impression and their effects are limited. This does not relieve educators of their duty to explain science in a way that is understandable and straightforward so that those who might be turned off by scientifically complex subjects are inspired to study more. Depending on each town, area, or district, a distinct method may be required while accounting for local knowledge, skills, beliefs, and language. The Indian government's development of tools that elucidate scientific findings and provide pathways for more inquiry is among the most consequential elements of environmental education. This kind of technique is shown by a number of resources, but two in particular stand out: the Paryavaran Abstracts. These publications provide information and guidance for learning more about aquatic resources, along with exercises that may help improve scientific learning skills. The extraordinary range of eminent scientists who contributed editorial input and took part in the peer review process was beneficial to both volumes. Thus far, science has provided the most convincing evidence of the damage that people have caused and now inflict to the planet. However, research is still needed to support environmental education programs and materials, so scientists, employees, and non-governmental groups must discover creative ways to communicate with the public and communicate their findings.

3. The Need to Plan Keeping Demographic Trends in Mind

India's huge population changes must definitely be taken into account while planning for environmental education in the nation. Which demographic trends are they, and what effect do you think they will have on the kind of environmental education offered? Changes in both rural and urban regions cannot be disregarded. Initiatives pertaining to community development must include aspects of growth and development as well as possible environmental circumstances. Minority populations that might spur population growth must be ignored. They must be given the opportunity to decide for themselves and accept the consequences. A more diverse society, an increase in the number of young Indians living in cities, and family life that value routines over free time will all have a big impact on environmental education. It goes without saying that access to and interest in environmental education must span a range of audiences. In order to cultivate critical thinking and problem-solving skills, a range of instructional strategies and methods will undoubtedly be needed. It's not easy to put up presentations for different audiences in different locations. Although interpreting words is just one aspect of language, it is nonetheless very important. These programs also need to be designed for long-term sustainability in the areas they want to serve. Different services are needed in India's rural regions than in the fast-paced urban society, and a number of creative efforts show how this may be achieved. There are around seven centers of excellence in India that focus on education, research, and awareness-building. A few effective examples include the Environment Educational Centre in Ahmadabad, the Centre for Ecological Sciences in Bangalore, and the Environment Educational Centre in Chennai. More has to be done for the average person that engages with his community in his area. The National Wildlife Federation, for example, publishes materials for National Wildlife Week in both Spanish and English and especially targets African-American student groups via its Earth Tomorrow program (Flicker 1998, Rogers 1998, Turnstile 1998). The Jane Goodall Institute's

Roots & Shoots program has worked with several local Los Angeles organizations to create a curriculum that is appropriate for a wide range of learners, with a focus on culturally diverse locations (McCarty et al. 1998). So what about India? Is it not possible for the government of our country to create such open, well-run programs? Other demographic concerns in India, such the family unit and the nation's rapidly growing population, must also be addressed. It's fascinating to note the role that NGOs play: They may include women, youth, and senior citizens in the monitoring of the quantity and quality of aquatic or forest resources by appealing to their commitment to volunteerism and the environment. The demographic changes in India in the twenty-first century will have a big effect on environmental education. If environmental education keeps up with this changing scenario, the environmental movement as a whole will benefit from being relevant to future generations and from inspiring people to take action to protect the environment and natural resources. Lessons from industrialized nations may also help other countries build their environmental education programs and materials, particularly those that address how to effectively reach individuals from different ethnic and cultural backgrounds.

4. The Need to Involve Educational Institutions

Despite considerable attempts by the Ministry to include the issue in the curricula at all levels of formal education—primary, intermediate, and tertiary—only Maharashtra has included environmental education in the school curriculum. The Ministry also provides funding to encourage the formation of eco-clubs in schools and the organization of environmental-related symposiums, seminars, and other events. Every school in the country should have access to a uniform, required, thorough, realistic, and down-to-earth environmental education curriculum that takes into consideration the different regional environmental concerns and language variances. The program must take root on a personal level so that each enlightened child or adult knows how their own efforts contribute to the change that will occur in the future. Under the existing system, reform efforts will have to start with the ministers and bureaucracy and filter down to the common citizen, making for a bleak future. Money is so full of opportunities for misuse and loopholes that it seldom reaches the bottom of the pyramid or is utilized for its original purpose. Change cannot occur without the complete educational awareness and participation of the population. Initiatives and endeavors must begin from the bottom and go upward, encouraging accountability and integrity at all levels. The National Policy of Education sought to instill environmental protection as a virtue in the curriculum of educational institutions when it was put into effect in 1986. Analogously, the 1988–1989 Environment Orientation to School Education effort seeks to assist nonprofit groups in implementing innovative programs that facilitate the curriculum's integration with the surrounding environment in schools. Support is also provided to the states for program assessments and activities aimed at introducing environmental ideas to the next generation of students at the primary, secondary, and university levels.

5. The Need to Respond To Childhood and Families

In contrast to children of today, it seems that we adults had more opportunities as children to interact directly with nature rather than via "virtual realities." But today's children probably have access to more environmental knowledge than we do. These children, who take their cues from the media, can become enraged and fight to save Orissa's turtles or Northern India's vultures. The challenge with this approach is to complement more modern information sources—such as experiential learning and outdoor education—with a menu of relevant activities that foster a continuum of experience and learning. To include families, the government should use doable strategies that allow caregivers—parents and other adult family members—opportunities to interact with children via fundamental community-based programs that may be developed in partnership with the Forest Department. These and other outdoor-oriented programs could be comparable in that they acknowledge the value of "family time" and the diversity of families from different socioeconomic backgrounds, including those from rural and urban areas. It is especially important to design outdoor education programs to provide families opportunities to spend valuable time together. These programs must, above all, be entertaining and engaging, and their outcomes must be evident and gratifying to the participants in order to compete with other demands on families' time. The variety and availability of outside environments are more beneficial to the development of the body, mind, and emotions than are artificial inside settings (Rivkin 1995). Put another way, because kids are growing up and moving around a lot, environmental education programs should provide a variety of experiences, from virtual to real-world. Additionally, television programs teach children about nature more than in-person interactions with the natural world do. Instead, there is enough potential to ensure that instructional materials

concerning, instance, aquatic resources include both standard cognitive learning materials and hands-on experiences, such as doing water quality tests or restoring the ecology of a village pond.

6. The Need for Activity-Based Learning in Educational Institutions

It seems that, in contrast to children of today, we adults had more opportunities as children to interact directly with nature rather than via "virtual realities." But today's children probably have access to more environmental knowledge than we do. Taking their cues from the media, young children may become enraged and fight to save the Orissan turtles or the Northern Indian vultures. This approach presents a challenge since it depends on a menu of relevant activities that complement more modern information sources, such as outdoor education and experiential learning, to provide a continuum of experience and learning. The government should put into place practical strategies that provide parents and other adult family members the opportunity to interact with children via simple community-based programs that may be developed in conjunction with the Forest Department, in order to involve families. These and other outdoor-oriented programs may be comparable because they acknowledge the value of "family time" and the diversity of families from different socioeconomic backgrounds, including those from rural and urban areas. Outdoor education programs need to be created with the intention of giving families the opportunity to spend valuable time together. Above all, these programs need to be interesting and entertaining in order to compete with other demands on families' time, and their outcomes need to be evident and fulfilling to the participants. The variety and accessibility of external environments are more favorable for the growth of the body, mind, and emotions than artificial indoor environments (Rivkin 1995). Put another way, because kids are growing up and moving around a lot, environmental education programs should provide a variety of experiences, from virtual to real-world. In addition, youngsters get more knowledge about nature via television programs than from direct interactions with the real world. Instead, there is enough potential to ensure that learning materials on, instance, aquatic resources include both standard cognitive learning materials and hands-on activities, such as evaluating the water's quality or restoring a community pond's ecology.

7. The Need for a Positive Sustained Approach at All Times

In general, learning more about the environment entails learning more about the harm that people have done to it as opposed to the things that we have done to keep it safe. In the next decades, even while understanding nature's resilience is definitely important for environmental education, educators and students will probably find it most clear to concentrate on the list of damages. The danger is in assuming that none of us can change things on our own and giving up on the future. We must recognize that there are no quick cuts to hard work and that effort alone will keep the psychology of pessimism at bay when evaluating the environmental challenges we face on a local and global level, as well as the progress we achieve. The achievements of those who are transforming the world should be recognized and celebrated, especially those from the younger age. There are also strategies to reduce pessimism by fostering the belief that every individual's responsibility and action matters. After seeing the harm to the environment directly for more than 40 years, renowned environmentalist Jane Goodall has many reasons to be pessimistic about the future. Even yet, she recognized the challenges we faced and infused messages of hope into her well attended lectures across the world, sharing stories of individuals who had transformed the world. All in all, Dr. Goodall conveys a message of hope. Four things give birth to optimism for the future, according to Good (1999): the human spirit, the durability of nature when handled with respect, the creative and problem-solving abilities of the human brain, and the power and vigor of young people worldwide. Even while the study of nature would be insufficient without an interdisciplinary approach stressing the hazards to the natural world, an appreciation of nature shouldn't be lacking from environmental education programs. Above all, teaching students about the marvels of nature will foster a creative and sustainable learning environment.

II. CONCLUSION

India has made great strides in protecting the environment, but the country's expanding population and increasing industrial use of its natural resources will pose significant challenges to the preservation of these vital resources. However, environmental education is frequently overlooked and seen as less important than other aspects of environmental protection. Through environmental education, future environmental advocates and problem solutions are created. It is critical to mold and develop young minds in order to produce a new generation of environmental leaders and workers. Environmental education must raise the general public's understanding of and concern for the

environment while posing the difficulties necessary for them to respond responsibly. Utilizing educational institutions is a good way to combine opportunities for experience learning with more recent knowledge sources.

REFERENCES

- [1]. Allen W.2001.A news media perspective on environmental communication. Biosciences 51: 289-292
- [2]. Bernabo CJ.1995.Communication among scientists, decision makers and society: Developing policy-relevant global climate change research. Pages 103-117
- [3]. Zwerver S, van Rompaey Bjorkland R, Shreves C, Pringle C. 1997. Riparian Environments: Values, Threats, Management and Restoration. An educational outreach slide show and text, available through the North American Ethnological Society.
- [4]. Bjorkland R, Pringle C, Newton B.1998.Introduction to Stream Ecological Assessment Course, Instructor's Manual. Washington (DC): US Department of Agriculture, Natural Resources Conservation Service.
- [5]. Clark J, R. 1999. The ecosystem approach from a practical point of view. Conservation Biology 13: 679-681.
- [6]. Christensen N, L.et.al. 1996. The report of the Ecological Society of America Committee on the Scientific Basis for Ecosystem Management. Ecological Applications 6: 665-691.
- [7]. Firth P, L.1998. Fresh water: Perspectives on the integration of research, education and decision making. Ecological Applications 8: 601-609.
- [8]. Flicker J, D. 1998. Building diversity at Audubon. Audubon (March-April). Gleick P, H. 2000. The World's Water 2000-2001: The Biennial Report on Freshwater Resources. Washington (DC): Island Press.
- [9]. Good all J. 1999.Reason for Hope. New York: Warner Books.
- [10]. Hammond W, F. 1997. Educating for action. Green Teacher 50: 7.
- [11]. Hudson S. 2001. Challenges for environmental education: Issues and ideas for the next century. BioScience 51: 283-288.
- [12]. Karr J, R. 1993. Advocacy and responsibility. Conservation Biology 7: 8.
- [13]. Karr J, R. 1999. Defining and measuring river health. Freshwater Biology 41: 221-234.
- [14]. Keniry J, Lyon J.1998. Green Investment, Green Return. Vienna (VA): National Wildlife Federation.
- [15]. Knox PA. 1995. Brainchild. Boston Globe Magazine, 5 Nov, p. 23.
- [16]. McCarty J, et al. 1998. Roots & Shoots LA. Washington (DC): Jane Good all Institute. Ministry of Information and Broadcasting, Government of India, Patiala house, New Delhi. 2001. India 2001.
- [17]. Newton B.2001.Environmental education and outreach: Experiences of a federal agency. Biosciences 51: 297-300.
- [18]. Rivkin MS. 1995. The Great Outdoors: Restoring Children's Right to Play Outside. New York: National Association for the Education of Young Children.
- [19]. Rogers CS.1998. Earth tomorrow: Meeting the urban challenges. Michigan Natural Resources Magazine (May-June).
- [20]. Ruskey A, Wilkie R 1994.Promoting Environmental Education. Stevens Point (WI): National Wildlife Federation and the University of Wisconsin Stevens Point Press.
- [21]. Tunstall M. 1998. 1998. Nature's Web: Caring for the Land. Vienna (VA): National Wildlife Federation.
- [22]. Postal S, L.1998. Water for food production: Will there be enough in 2025? Biosciences 48: 629-637.
- [23]. Postel S, L.1999. Pillars of Sand: Can the IrrigationMiracle Last? New York W. W. Norton.