A Brief Review on Environmental Components and Issues in Developing Countries

Mr. S. M. Gage,
Lect. Department of Mechanical Engg
S.K.B.P.Polytechnic, Kopargaon

Mr. M. A. Gawand,
Lect.Department of Mechanical Engg
S.K.B.P.Polytechnic, Kopargaon

Mr. S. B. Jangame,,
Sr. Lect. Department of Mechanical Engg
S.K.B.P.Polytechnic, Kopargaon

***Abstract*—**

Today India is facing the biggest challenge of survival, degradation of ecosystem, depletion of natural resources; increasing levels of pollution pose major threat to the survival of mankind. The need of the hour, therefore, is to concentrate on the area of environmental aspects, which shall provide an insight into various environment related issues. Environmental studies are an interdisciplinary academic field that integrates physical, chemical and biological sciences, with the study of the environment. It provides an integrated, quantitative, and interdisciplinary approach to the study of environmental system & gives an insight into solutions of environmental problems.

***Index-Terms*: environmental studies, ingredient of environment, agile environment, component of environment, set of environment, environmental component environmental problems.**

1. INTRODUCTION

To keep environment alive and healthy, as human knows the importance of environment very well. The environmentalist and the researcher around the globe are always finding the solution to restore the sustainable environment. World facing the problems like global warming, climate change, Deforestation, poaching of wild life, loss of biodiversity, increase in worlds population and so many crisis related to environment and this environmental issues is the biggest challenge of the 22nd century. Now a day every country are focusing to resolve the problems related to environment and every one discuss the environmental problems on the priority and gives prime importance to environmental issues.

Environmental issue includes

[1] Climatic change or global warming: where the earth's temperature increase day by day since 1901 the rise in earth's surface air temperature has increased by about 1.8^0 F which is alarming situation to whole world that might be possible in the next 50 years it is a difficult to survive of planet earth.

[2] Deforestation is the cutting down of trees and the destruction of natural vegetation leads to rise in concentration of greenhouse gases such as carbon-di oxide and carbon related compound in the atmosphere and decreasing the level of fresh air (oxygen) in the atmosphere.

[3] Rapid urbanization and industrialization have destroyed a green vegetation layer of the earth, loss of habitat for many wild animals and most importantly we are losing our biodiversity.

[4] Ozone depletion: Due to large use of AC, refrigerators, coolant in aerosol industries releases CFC'S in the atmosphere and it causes reduction of the amount of ozone (layer) in the stratosphere

[5] Overconsumption which encourages the acquisition of goods in ever increasing amounts

[6] Desertification: Desertification is the degradation process by which a fertile land changes itself into a desert by losing its flora and fauna; this can be caused by drought, deforestation, climate change, human activities or improper agriculture.

Environmental studies refer to a systematic study of human interaction with natural and built environment. Environmental studies connect principles from the physical sciences, commerce/economics, the humanities, and social sciences to address complex contemporary environmental issues. It is a broad field of study that includes the natural environment, the built environment, and the relationship between them.

Environment studies are all about learning the way we should live and how we can develop sustainable strategies to protect the environment. It helps individuals to develop an understanding of living and physical environment and how to resolve challenging environmental issues affecting nature [1]

2. SET OF SURROUNDING

Greek word environ means envelop or surrounding where human interact with living and non-living things. It plays a major role in the healthy living of human beings. As shown in Figure 2, environment includes living things such as plant, animal; microorganism such as bacteria, fungi etc whereas non-living things includes sunlight, soil, air, water, minerals etc. Everyone may be affected by environmental issues like global warming, ozone layer depletion, energy resources, acid rain, nuclear accidents, loss of global biodiversity, etc.

- Physical or Living Environment: Environment can be divided into abiotic or non-living and biotic or living environment. Physical or abiotic components are solid, liquid, and gas. These three elements termed as lithosphere, hydrosphere, and atmosphere respectively. Living component consists of plants (flora) and animals (fauna) including human beings. The physical elements of the planet earth, such as land, aqua, climate, flora and fauna formed man's environment [2]
- Artificial environment: manmade environment includes every material and non-material concept created by man. It includes bridge, road, building, monuments, aquariums, cities, community parks, and laboratories [1][2]
- Biodegradable environment: Relates to the concerns for environmental conservation and improved health of the environment. This includes supporting practices like informed consumption, conservation practices and investment in renewable energy.it includes green energy technologies, which is a group of practices includes use of non-toxic chemicals and chemical process, clean energies and environmental monitoring[4]
- Agile environment:

  Cook and Das define smart environment as "a small world where different kinds of smart device are continuously working to make inhabitants' lives more comfortable." Smart environments aim to satisfy the experience of individuals from every environment, by replacing the hazardous work, physical labor, and repetitive. The objective of agile environment is to improve the quality of life of citizens. Increases efficiency and sustainability. Works with an open and interoperable platform [7]

3. INGRADIENTS OF ENVIRONMENTAL STUDIES

Environmental studies are a field with wide scope. It is concerned with the issues of sanitation, health, pollution control, biodiversity conservation, solid waste disposal, and conservation of natural resources

- Ecosystem: An ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscape, work together to form a bubble of life. Ecosystems contain biotic or living, parts, as well as abiotic factors, or nonliving parts. Biotic factors include plants, animals, and other organisms. The environment consists of the following four segments. Fig [2] shows interaction within ecosystem.

a. Lithosphere: The lithosphere is the solid, outer part of Earth. The lithosphere includes the brittle upper portion of the mantle and the crust, the outermost layers of Earth's structure. It is bounded by the atmosphere above and the asthenosphere (another part of the upper mantle) below.

b. Hydrosphere: A hydrosphere is the total amount of water on a planet. The hydrosphere includes water that is on the surface of the planet, underground, and in the air. A planet's hydrosphere can be liquid, vapor, or ice. On Earth, liquid water exists on the surface in the form of oceans, lakes, and rivers.

c. Atmosphere: An atmosphere is made of the layers of gases surrounding a planet or other celestial body. Earth's atmosphere is composed of about 78% nitrogen, 21% oxygen, and one percent other gases.

d. Biosphere: The biosphere is made up of the parts of Earth where life exists. The biosphere extends from the deepest root systems of trees, to the dark environment of ocean trenches, to lush rainforests and high mountaintops. Scientists describe Earth in

terms of spheres. Simply it is a sum of lithosphere, hydrosphere and atmosphere[4]

- Genuine Resources: Genuine resources are resources that are drawn from nature and used with few modifications. This includes the sources of valued characteristics such as commercial and industrial use, aesthetic value, scientific interest, and cultural value. On Earth, it includes sunlight, atmosphere, water, land, all minerals along with all vegetation, and wildlife.

Genuine resources are part of humanity's natural heritage or protected in nature reserves. Particular areas (such as the rainforest in Fatu-Hiva) often feature biodiversity and geodiversity in their ecosystems. Natural resources may be classified in different ways. Natural resources are materials and components (something that can be used) that can be found within the environment. Every man-made product is composed of natural resources (at its fundamental level).

A natural resource may exist as a separate entity such as fresh water, air, or any living organism such as a fish, or it may be transformed by extractivist industries into an economically useful form that must be processed to obtain the resource such as metal ores, rare-earth elements, petroleum, timber and most forms of energy. Some resources are renewable, which means that they can be used at a certain rate and natural processes will restore them, whereas many extractive industries rely heavily on non-renewable resources that can only be extracted once.

Natural-resource allocations can be at the center of many economic and political confrontations both within and between countries. This is particularly true during periods of increasing scarcity and shortages (depletion and overconsumption of resources). Resource extraction is also a major source of human rights violations and environmental damage. The Sustainable Development Goals and other international development agendas frequently focus on creating more sustainable resource extraction, with some scholars and researchers focused on creating economic models, such as circular economy, that rely less on resource extraction, and more on reuse, recycling and renewable resources that can be sustainably managed[9]

- Energy Resources: Energy is simply the capacity to do work. Energy appears in several forms. The sun is our primary source of energy. There are two types of energy sources, renewable and non-renewable energy resources. The renewable energy resources includes use of sunlight, wind,, water, heat etc (Solar energy, wind energy, Tidal/Hydro energy and geothermal energy) which is available freely and in bulk quantity as well as environment friendly. Other type of energy source is non-renewable includes such as coal, crude oil, natural gas collectively called as fossil fuels which being exhausted in the year 2040-42 and such resources takes too much time for its regeneration as well as a source of pollution[9][10]

- Biodiversity: Biodiversity is all the different kinds of life you'll find in one area—the variety of animals, plants, fungi, and even microorganisms like bacteria that make up our natural world. Each of these species and organisms work together in ecosystems, like an intricate web, to maintain balance and support life.

- Pollution: This refers to undesirable changes occurring in the physical, chemical, and biological characteristic of soil, water and atmosphere. It is regarded as “an unfavorable alteration” in the sustaining and carrying capacity of the natural environment. Pollution also means the presence of harmful pollutants in an environment that makes this environment unhealthy to live in. There are different types of pollution: air pollution, water pollution, noise pollution, soil or land pollution, marine pollution, thermal pollution, toxic pollution, carcinogenic pollution, and nuclear hazards.

- Solid Waste Management:

The term solid waste management mainly refers to the complete process of collecting, treating and disposing of solid wastes. In the waste management process, the wastes are collected from different sources and are disposed of. This process includes collection, transportation, treatment, analysis and disposal of waste. Solid wastes can be classified as municipal waste, hospital waste, and hazardous waste. The hazardous waste can cause danger to health and environment [7]

4. SCOPE OF ENVIRONMENTAL STUDIES

Environmental studies are a vast subject. It is a multi-disciplinary subject, consist of many subject like geology, geography, chemistry, physics, sociology, history, economics, political science, commerce, management science etc. environmental studies covers many aspect as follows :

1. It studies function of various component of environment such as biotic and abiotic component.
2. It studies interaction of all component of environment and man.(human interaction)
3. It deals with study of analysis of all components of environment and related problems such as air, water and soil pollution.
4. It also studies effect of pollution on environment, controlling measures and remedies.
5. It sets a standard, which are accepted as a safe, clean and healthy for human beings, animals, birds, plants, aqua life etc.
6. It also studies the important issues related to humanity such as fresh air, clean water, hygienic environment, fertile soil, ecological balance, sustainable development etc.
7. It also studies the global environmental issues such as global warming, greenhouse effect, acid rain, loss of biodiversity, ozone layer depletion, energy crisis, water crisis, nuclear pollution, e-waste and biomedical waste etc.
8. It also cover the study of environmental laws, environmental management and sustainable development [11]

5. GLOBAL ENVIRONMENTAL STUDIES

Environmentalists around the world are constantly searching for a sustainable solution to restore a sustainable environment. Environmental studies are offered worldwide through colleges of liberal arts, life science, social science or agriculture. We consider how environmental studies are conducted in some nations.

- India: no other country than India has taken an initiatives to improve the health of environment. Indian constitution has passed many act and regulations so as to protect our biodiversity and planet. The act includes The five laws to be put under the scanner are Environment (Protection) Act, 1986; Forest (Conservation) Act, 1980; Wildlife (Protection) Act, 1972; The Water (Prevention and Control of Pollution) Act, 1974; and The Air (Prevention and Control of Pollution) Act, 1981. This shows how Indian government is serious regarding environment. Indian government has successfully increased the numbers of tigers and lions to protect wild life biodiversity. In MDG and SDG India has set a goal of reducing carbon credit to zero up to 2070. Indian government has set a goal to minimize the use of diesel up to 2025 and for that they launch many electrical vehicles so as to reduce the use of fossil fuels and carbon emission. Indian minster try to focus on sustainable development and for that every year plantation programs are implemented at central level and successfully carried out the plantation of millions of trees. Indian social work and environmentalist always has keen eye sight of project which are badly affecting the environment, if it is, than they are always against of it. Overall, the developing country like India has taken lots of initiatives to improve the quality and health of environment [5]

- Australia: Australia has been experiencing an increasingly high level of recreation and tourism use in its environments. Compared with some overseas countries such as the United Kingdom and the United States, Australia lags behind in undertaking research in this area. Some studies indicate that the most common recreational and tourist activities (such as bush walking, camping, and horse-riding) can, if not well managed, adversely affect the values of Australian natural resources. Physical effects include damage to vegetation, track formation, soil loss, and an increase in fire frequency. Littering and water pollution are also seen as impacts associated with bush walking and camping [8]

- United States: Interest in the environment has surged over the past decade. Programs in environmental studies are offered through colleges of liberal arts, life science, or social science. Students in environmental studies gain the intellectual tools they need in order to understand and address the crucial environmental issues of our time. Several associations have been established to promote research and teaching activities in areas related to environmental studies in US. These include

Air & Waste Management Association ,American Water Resources Association, Association for Environmental Studies and Sciences (AESS),Ecological Society of America, National

Association of Environmental Professionals, National Council for Science and the Environment, National Parks & Conservation Association, National Waste and Recycling Association, North American Association for Environmental Education, Society for Conservation Biology, Soil & Water Conservation Society, Water Environment Federation [7][8]

6. SUMMARY AND DISCUSSION

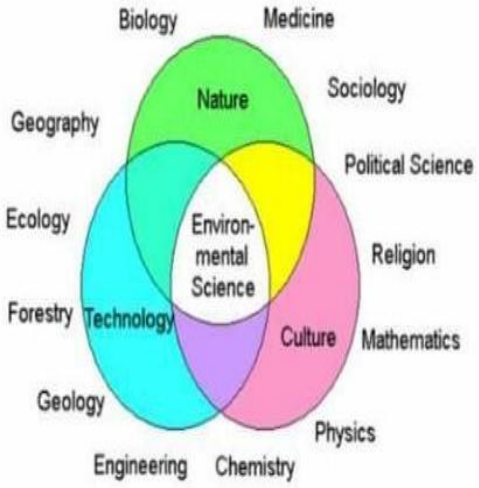
Citizen of every country has their fundamental duty to protect our environment from degradation, as the all component of the environment is crucial and provides basic needs to all living organisms. Depletion in any one source may causes horrible situation and no one will be able to settle the issues quickly as we know that replenishment and generation ratio is inversely proportional to each other.now days all over the countries environmental problems more or less common but the developed countries are more responsible for environmental degradation than developing countries where as un developed countries has no contribution in environmental degradation at all but we all are suffering from the same issues. Developed and developing countries should take a initiatives to solve the environmental problems like carbon credit, global warming, water scarcity, loss of biodiversity, nuclear waste and pollution otherwise it is highly impossible to all of us to survive on earth planet. It would be possible that in upcoming years ecological balance would be totally collapsed and like the genus dinosaurs vanishes, in the same way most of the genus and species would be vanished from earth. So it is necessary to implement environmental protection program all over the world, include subject like environmental studies in the curriculum, aware the people through education, program and through social media so as to create awareness how environment would protect from degradation.

7. CONCLUSIONS

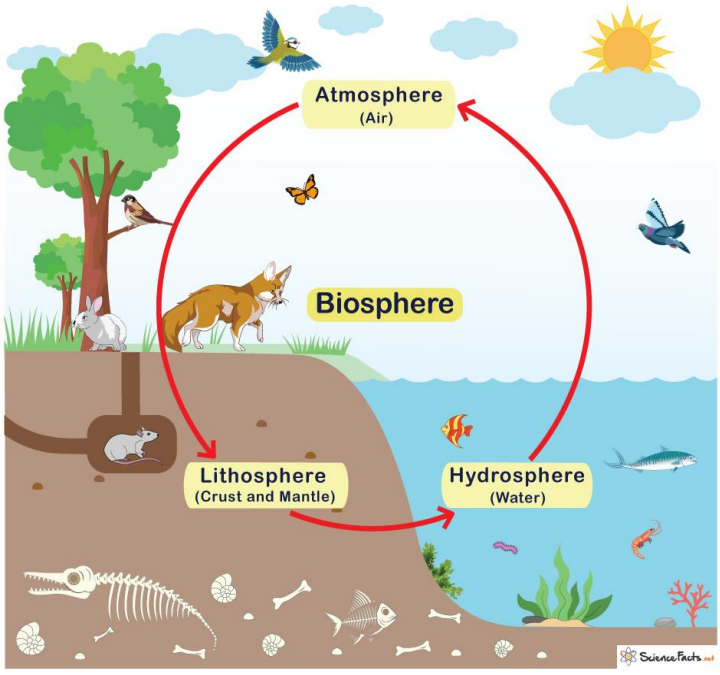
Environmental studies helps to understand the importance and availability of natural resources and there uses effectively. Environment gave us everything that we want but we use more and not return to it. It wills loss the ecological balance and everything will collapse. Sources are available and environmental studies teach us smart use of natural resource and sustainable development without compromising the future generation need. In upcoming year students have a lot scope in the field of environmental chemistry as the future generation has to face many problems related to environment and worlds is demanding solution on their problems so students have lots of scope in the field of environmental studies and related education. More information about environmental studies can be found in the books in [10-24] and the following related journals:

- Journal of Environmental Studies
- Polish Journal of Environmental Studies
- Bulletin of Environmental Studies

Fig [1]



Fig[2]



VII. REFERENCES

[1] Environmental Studies: Routledge Publication,2"d Edition, 2000, ISBN: 0-415-21176-X

[2] Environmental Studies: University Grants Commission, New Delhi

[3] Environmental Studies: Thild Edition, Oxford University Press, USA, ISBN:9780199459759, 0199459754

[4] "Environmental studies (B.S. or B.A.)" https://www.niu.edu/academics/undergraduate/envir onmental-studies.shtml International Journal of Scientific Advances ISSN: 2708-7972 Available Online at www.ijscia.com | Volume 1 | Issue 3 | Nov - Dec 2020 156

[5] D. Sun and D. Walsh, "Review of studies on environmental impacts of recreation and tourism in Australia," Journal of Environmental Management, vol. 54, no. 4, August 1998, pp. 323-338.

[6] R. W. Li (ed.), Metagenomics and Its Applications in Agriculture, Biomedicine and Environmental Studies. Nova Science Publishers, 2011.

[7] M. N. O. Sadiku, O. D. Olaleye, and S. M. Musa," Green Environment," International Journals of Advanced Research in Computer Science and Software Engineering, vol. 9, no. 6, June 2019, pp. 51-54.

[8] "Review of studies on environmental impacts of recreation and tourism in Australia," Journal of Environmental Management, vol. 54, no. 4, August 1998, pp. 323-338.

[9] A. Kaushik, Perspectives in Environmental Studies. New Age International Publishers, 2014.

[10] I. Linkov and E. Moberg, Multi-Criteria . . Decision Analysis: Environmental Applications and Case Studies. Boca Raton, FL: CRC Press, 2011.

[11] www.eco-prayer.org