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Dr. Dharampurikar Bhalchandra Vaijanathrao

Dept. of Political Science

N. S. B. College, Nanded.

ROLE OF SCIENCE AND TECHNOLOGY IN ENVIRONMENTAL PROTECTION

Saima Firdous Mohammed Yaseen

Assistant Professor
Department of Mathematics, S.P.H. Mahila College Malegaon Camp Dist.nashik

ABSTRACT:

Technology has helped us simplify our lives. It has made the world a smaller place, assisted in fighting off the deadliest diseases, and solved the most complicated problems for us. The next problem that stands before us is that of the environmental pollution we face. Keeping in mind the potential technology has, environmental scientists are now saving the environment with technology.This paper explains how recycling of wastage,Biotechnology and renewable energy sources can save our environment.It shows that the science and technology play a vital role in Environmental protection.Saving environment with technology is helping us build better ecosystems by employing both organic and inorganic techniques for a cleaner planet.

KEYWORDS: Environmental Protection, Biotechnology, Recycling, Renewable Energy Sources

INTRODUCTION:

In present global situation, numerous powerful technologies have been developed and it impacts our daily life in every field from the cars, aero plan, cell phones, computers and internet. Humans have always been affected with the developments in new technology. As we know that the technology and science made human life simpler. Works can be done easier through high-tech machines and equipment and it makes human to feel comfortable and easy to live. Science and technology enables everyone to live in an easy, comfortable,simpler and modern way of life. It opens the door for people to enter into a new world which is fully developed and well civilized.

On the other hand,It is also true that so many inventions of science like high-tech machines, equipment industries are create sound pollution, Big factories and vehicles release toxic gases in air and make it polluted. Also pesticides, fertilizer, industrial wastage are badly affected our environment.It is considered that science and technology is responsible for environmental pollution. In this age of technology good standard of living has almost been achieved by majority of the people but they lack good quality of life.Hence there is need of technological instruments that are to be laid on improving the quality of life rather than raising the standard of living. We are living at a critical

time, both for humanity and the whole planet. The need to protect and to seek more sustainable formulas for interacting with the environment so the peoples are thinking about saving environment with science and technology.

ROLE OF SCIENCE AND TECHNOLOGY IN ENVIRONMENTAL PROTECTION:

The technology and environment are thought to be on the opposite ends of the spectrum but humans are looking for ways to save the environment with technology. So, be it generating renewable, green energy or using sensors to monitor endangered species, technologies like AI and IoT are helping create a sustainable future.

The linear "Take, Make, Dispose" processes have caused major environmental problems. In addition to improving the efficiency of linear production processes, the circular economy aims to reuse elements that are traditionally considered waste and to produce goods and services while reducing raw materials, water and energy consumption and waste. One aspect is the bio economy, in which either living organisms or their parts are used to help the environment which can contribute to our growth.

ENVIRONMENTAL PROTECTION BY RECYCLING OF WASTAGE:

The linear processes that characterize how goods, food, fresh water and energy are currently produced have caused major environmental, economic and social problems, such as climate change, resource scarcity, and pollution. While technical advances are expected to continue producing improvements in efficiency, the real challenge lies in moving from a linear to a circular economy where "waste" will be reintroduced into the production chain minimizing our need of resources as well as our impact in the environment. Close-looping our economy is an urgent need as our demand of natural resources, strategic minerals, and energy is dramatically increasing.

There are so many industrial, domestic wastages like plastics, garbage,polluted water which make environment polluted. We can protect our environment by recycling of these wastage. As we all know that it became possible only due to technology and nowadays we all used recycled paper, cans, bottles, car components and even water. biogas is the best alternative of burning fossil fuel. When a whole life-cycle assessment is made,recycling makes economic sense, reducing costs and maximizing production. Moreover, recycled products are especially popular with high-spending customers, as many trendy companies know well

ENVIRONMENTAL PROTECTION BY BIOTECHNOLOGY:

The technology applied in agriculture is one great example. The development of improved crops, boosted in recent decades by sufficient scientific evidence to support its usefulness and safety, shows how biotechnology can produce crops which are resistant to climate change.Sugar cane or

corn crop waste is used to produce biofuels.This biofuels is an alternative to traditional fuels generated from the biomass of living organisms or their metabolic waste and hence biofuel production is a solution that facilitates the use of biotechnology for environmental purposes. It is not the only alternative that will allow us to adapt to the changing weather conditions caused by global warming.

Biofuels production is not the only one. Environmental disasters such as the sinking of the Exxon-Valdez and the Prestige were the catalyst for scientists to implement pioneering technologies by microorganism for cleaning oil-contaminated environments. The use of microorganisms for these tasks is called bioremediation. It employs bacteria or fungi to decontaminate waste water from urban areas.Remediation technologies can successfully remove pollution without causing other unforeseen negative environmental impacts elsewhere.

In order to ensure sustainability we should remember to mention innovation in new materials such as biomaterials used to store carbon dioxide which can help to reduce the greenhouse effect and global warming.

ENVIRONMENTAL PROTECTION BY RENEWABLE ENERGY SOURCES:

The usage of the renewable-energy sources will increase manifoldwith the improvement in the infrastructure.The sources such as solar and wind energy have already made their place across the world. Other resources of renewable energy used by many nations are tidal energy, hydropower, biofuels and geothermal energy.

Themain reason behind the usage of these resources is the lesser effect on the environment and curbing the release of the toxic gases like Carbon Dioxide, Sulphur dioxide. Usage of renewable energy sources play a vital role in saving the environment.

1. No Damage to Environment while Extracting:

Most of the energy sources like oil, natural gas, or coal used for power generation is extracted from the core of the Earth. Huge amounts of these resources are extracted, and it needs more exploitation of the Earth. Because of constant drilling this leads to increase in expensesand release the toxic gases into the atmosphere that becomes damaging for nature as well as humans. However, on the other hand, the renewable-energy sources are easily obtained, and they do not release any harmful gases.

2. Reduction in Carbon Emission:

The usage of the renewable-energy resources as the wind and solar energy curbs the release of Carbon Dioxide in the air and reduce air pollution. The renewable energy is present in abundance and only needs right technology and infrastructure. Moreover, other electricity generation resources

emit nearly 40% of the carbon dioxide that is harmful to the atmosphere. The usage of renewable-energy sources reduces the carbon emission in the air as there is no burning or extraction required.

3. Helps in Curbing Global Warming:

The renewable-energy resources help in curbing the global warming as it mitigates the greenhouse gas emissions that are a major contributing factor to it. The usage of the conventional energy sources will help in eliminating the emission of toxic gases.

4. Sustaining the Renewable-Energy Sources:

It is very important to maintain the renewable-energy resources because this will help in generating the power for a longer period.Also, the sustainability will help in dealing with so many environmental issues relating to fossil fuel depletion, emission of carbon dioxide and other threatening issues.

5. Decreases the Adverse Environmental Impacts:

The increased usage of the renewable-energy resources will help in decreasing the unfavorable environmental impact. These sources of energy are clean and helps in the reduction of the residual waste. This further helps in keeping the atmosphere green and drops the rate of carbon footprints.

CONCLUSION:

The human needs are growing daily regarding the utilization of the electricity at home or industrial establishments. This has led the countries to rethink about the use of renewable-energy resources in order to reduce deadly environmental effects and creating a pollution-free atmosphere. Science can provide us with enough detailed knowledge about nature to solve and prevent environmental problemsResearch, as well as scientific and technical innovation, will be critical to saving the environment, reducing the impact of global warming, helping in adapting to climate change, cleaning up polluted areas and taking care of our own health.The examples mentioned above show that science and technology will be better prepared to meet the challenges of the future. In addition, overcoming these challenges will open the door and allow us to move towards a different economy, an environment-friendly one that generates qualified employment.The future will be marked by our ability to evolve as well as adapt to change. In future among the technologies, the electric cars and biofuels play a special role in saving environment.

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