

PROTECT ENVIRONMENT

Since the beginning of time, the environment has helped us establish relationships with the flora and fauna groups that have ensured our lives. Nature has provided us with many gifts such as water, sunlight, air, living beings and fossil fuels etc. by which these things have made our planet habitable.

Since this resource is available in abundance, it is being consumed in large quantities and at a rapid rate due to the increasing population to satisfy the luxurious desires of the rich and elite. That's why it has become very necessary to protect them in every way. Here are some ways by which excessive use of these natural resources can be controlled and conserved.

To meet the current needs of our increasing population level, we are consuming our natural resources indiscriminately without thinking. We are not even worrying about our future generation. Thus, the biggest concern in today's time is that we need to take strict steps to conserve our renewable and non-renewable resources and protect our earth. Environment protection is not only the work of the government, for this our own contribution as an individual is also very important. Knowingly or unknowingly we contribute to pollution every day. So it is our duty as a consumer to use the bounties provided by nature to promote water conservation and take part in reuse and recycle of items, stop wastage of resources like electricity and water etc.

PLASTIC FREE PLANET

■ DR. PARVEEN KUMAR

The World Environment Day celebrated every year on June 05 since 1974 is one of the biggest annual events organized by United Nations that recognizes the need to put up collective action to protect our environment. This event of the United Nations (UN) aims to generate awareness about the significance of environment and the urgency with which efforts need to be made for a sustainable environment. 'Sustainable' means an environment that would provide the present generation with all the basic necessities required for their survival without compromising with the generations to come. A healthy environment is a prerequisite for a healthy living and well being of all the biodiversity that exists on this planet. Our natural resources like air, water and soil are a vital part of our environment. Air we breathe, water we drink and soil from we get different crops ultimately decide the existence of life on earth. Environment consists of both biotic as well as abiotic components. Without it, the living things couldn't survive on Earth. Our planet, Earth is a home for different living species and we all are dependent on the environment for food, air, water, and other needs. However, from the last few decades several issues are disrupting our environment and causing some irreversible damage to living beings. Therefore, it becomes important for every individual to save and protect the environment.

HISTORY: The United Nations General Assembly established World Environment Day in 1972 following the first major conference on the environmental issues called on the human environment also called as the Stockholm Conference on the human environment. The Stockholm conference adopted resolution A/RES/2994 to mark June 05 as the World Environment Day. The resolution was adopted urging the government and the organization in the United Nations to undertake on that day every year worldwide activities reflecting their concern for the preservation ad enhancement of the environment with a view of deepening environmental awareness.

THEME: Every year the day is celebrated with a specific theme which highlights the major issues confronting the environment and which require immediate action. In 1974, it was celebrated with the theme 'Only One Earth'. Since then various host countries have been celebrating it and idea for rotating the centres of these activities started. In 2020, the theme for the day was 'Celebrate Biodiversity. The theme for World Environment Day 2023 revolves around plastic pollution and will be hosted by Cote d' Ivoire supported by Netherlands. The theme will focus on solutions to plastic pollution under the campaign #Beat Plastic Pollution. It is a reminder that people's action on plastic pollution matters.

PLASTIC POLLUTION:

The name 'plastic', comes from the Greek plastikos, meaning capable of being shaped or moulded. Yet the material which seemed to offer so much because it is flexible is now plaguing the planet with its permanence. Plastic pollution today has become a global problem. Plastics being inexpensive and durable are very adaptable for different uses. The manufacturers choose to use plastic over other materials. About 1,000,000 plastic bottles are brought every minute and less than half of them end up getting recycled and when they decompose they release harmful chemicals. The problem arises due to their chemical structure which makes them resistant to many natural processes of degradation. A large volume of plastic that enters the environment thus remains a mismanaged waste and for it to persist in the ecosystem for hundreds of years. Reports reveal that 7 billion of the 9.2 billion tonnes of plastic produced from 1950-2017 became plastic waste ending up in landfills or dumped. Plastic pollution afflicts land, waterways and oceans. Some researchers suggest that by 2050 there could be more plastic than fish in the oceans by weight. Living organisms, particularly marine animals, can be harmed either by mechanical effects such as entanglement in plastic objects, problems related to ingestion of plastic waste, or through exposure to chemicals within plastics that interfere with their physiology. Degraded plastic waste can directly affect humans both through direct consumption (i.e. in tap water) as well as indirect consumption (by eating animals) and disruption of various hormonal mechanisms. The 2019 data revealed that 368 million tonnes of plastic is produced each year; 51% in Asia, where China is the world's largest producer. From the 1950s up to 2018, an estimated 6.3 billion tonnes of plastic has been produced worldwide, of which an estimated 9% has been recycled and another 12% has been incinerated. This large amount of plastic waste enters the environment and causes problems throughout the ecosystem; for example, studies suggest that the bodies of 90% of seabirds contain plastic debris. As of 2020, the global mass of produced plastic exceeds the biomass of all land and marine animals combined.

The amount of plastic waste produced increased during the COVID-19 pandemic due to increased demand for protective equipment and packaging materials. Higher amounts of plastic ended up in the ocean, especially plastic from medical waste and masks. In 2019 a report on 'Plastic and Climate' revealed that in 2019, production and incineration of plastic will contribute greenhouse gases in the equivalent of 850 million tonnes of carbon dioxide (CO2) to the atmosphere. In current trend, annual emissions from these sources will grow to 1.34 billion tonnes by 2030. By 2050 plastic could emit 56 billion tonnes of greenhouse gas emissions, as much as 14 percent of the earth's remaining carbon budget. By 2100 it will emit 260 billion tonnes, more than half of the carbon budget.

PLASTIC FREE PLANET:

In some areas there have been significant efforts to reduce the prominence of free range plastic pollution, through reducing plastic consumption, litter cleanup, and promoting plastic recycling. Individual micro level efforts by all of us have the potential to make a difference at the macro level. Here are some of the initiatives we all can take to make the planet a better place to live in: Ninety percent of the plastic items in our daily lives are used once and then chucked: grocery bags, plastic wrap, disposable cutlery, straws, coffee-cup lids. The alternative is to take our own bags to the store, silverware to the office, or travel mug to Starbucks before it becomes habit. Each year, close to 20 billion plastic bottles go into the trash. We can avoid that by carrying a reusable bottle in our bag and then we will not have to purchase a plastic bottle from the market.

(The author is a Scientist at SKUAST-K; can be reached at pkumar6674@gmail.com).

■ DR. VIVAK M. ARYA, TAMANNA SHARMA

The earth, the air, the land and the water are not an inheritance from our fore fathers but on loan from our children. So we have to handover to them at least as it was handed over to us. - Mahatma Gandhi.

This quote clearly emphasize the relevance of environment as well as the importance of adopting sustainable practices in conserving the environment for future generations. This filial allegiance confirms that nature and humanity have evolved together. The term "environment" refers to the interrelationship of the elements of water, air, and land as well as their effects on people, other living things, plants, animals, microorganisms, and property. In general, it refers to the totality of all the living and non-living factors and their influence on human life. The Vedas teach that all of us (every creature of nature), especially humans (because we are the ones who are outwardly conscious), must maintain cordial relationships with all elements of nature. The Vedas declare that while the attitude of indulgence and satisfaction towards nature is not forbidden, it should be restrained. No quantity can ever be enough to satisfy our greed, so we must just take and enjoy what we need. Mahatma Gandhi himself was an advocate of this. The basic concept is to approach cosmic existence in a mutually beneficial way. To put it another way, we must treat nature with reverence and not only as a resource. Everything that humans have ever needed to survive and thrive has been available in the natural world around us, including food, water, medicine, materials for shelter, and even natural cycles like nutrient and climatic cycles. Although the growth of industry and technology may have temporarily separated us from nature, it hasn't changed how much we rely on it. Over the past few decades, environmental degradation has become a "common concern" for humanity. The unique feature of the current environmental issues is that human activity contributes to them more than natural activities. Economic expansion and mindless consumption are beginning to have negative impacts on "Mother Nature". A global event known as World Environment Day is observed every year on June 5th to promote action for the preservation and conservation of the environment. Environment Day in 2023 is a perfect opportunity to consider our impact on the environment and mobilize group efforts for a sustainable future as the globe deals with urgent environmental challenges. A different nation hosts World Environment Day every year, where official events take place. In collaboration with the Netherlands, Côte d'Ivoire will host World Environment Day in 2023. Côte d'Ivoire is taking the lead in the fight against plastic pollution. It has prohibited the use of plastic bags since 2014 in order to encourage the transition to reusable packaging. Abidjan, the largest city in the nation, has developed into a centre for start-ups that value the environment. The Government of the Netherlands, one of the nations adopting ambitious action along the plastic lifecycle, will support World Environment Day this year. It has signed the Global Commitment on the New Plastics Economy and is a participant in the Global Partnership on Plastic Pollution and Marine Litter. The UN General Assembly proclaimed June 5 as World Environment Day (WED) in 1972. WED was created as a result of a meeting of world leaders to examine how to increase public awareness of environmental protection. The first-ever WED was then observed two years later with the theme "Only One Earth." WED has evolved over the years into a forum for bringing attention to environmental issues like food security, sea level rise, illegal wildlife trade, air pollution, plastic pollution, and sustainable consumption. WED also encourages changes in national and international environmental policies as well as consumption habits. The potential of environment Day to unite individuals from many origins and cultures for a shared goal is one of the key contributing aspects to its success on a global scale. On June 5, celebrations might range from political activism and public rallies to educational activities and neighbourhood clean-ups. NGOs, governments, communities, people, charities, organisations, and celebrities all participate in WED to spread awareness of environmental issues. There are many ways to mark World Environment Day, including tree-planting ceremonies, concerts, conventions, and parades. Clean-up programmes are also popular and will be prominent this year: Natural environmental colours are frequently used in the creation of promotional materials for the day. Worldwide, more than 430 million tonnes of plastic are produced each year, half of which are intended for single-use applications. Less than ten percent of that is recycled. Every year, 19-23 million tonnes are thought to make their way into lakes, rivers, and oceans. Microplastics, which are minute pieces of plastic with a

■ DR. BANARSI LAL

Every year 5th of June is observed as the World Environment Day across the globe to create awareness on environmental protection. Environmental protection is a practice of protecting the natural environment on individual, organizational or governmental levels for the benefit of natural environment and living beings. Everyone wants to live in the safe world. We can't stop breathing but we can do something about the quality of air that we breathe. Every year about 7 million people die prematurely due to air pollution. There is dire need to explore renewable energy and green technologies and improve air quality in cities and regions across the globe. It is estimated that about 92 per cent of the people do not breathe clean air across the global. Air pollution badly affects the global economy and ground level ozone pollution is expected to reduce staple crop yields by 26 per cent by 2030. Today, we have 7 continents on planet earth. Every human being has only one dream which is to live better, to eat better and to consume better. But majority of them never care for the environment and planet Earth. Now we are more than 7 billion but we have only one planet to live and survive. We have limited food, limited place and limited shelters. If we keep on using natural resources as we are doing every day, a day will come when our own grand children shall be forced to live homeless with full of hunger. So it's better to consume the natural resources with care and responsibility. So, we should stop the wastage natural resources and use them according to our need not on our greed. Each of us knows the importance of nature. It consists of all the living beings on the earth, which are mutually interdependent on each other. But due to the excessive pollution caused by human beings, many species are becoming extinct and the global climate is also changing at a very rapid rate. The changing climate is inversely affecting

diameter of up to 5 mm, are present in food, water, and the atmosphere. Each person on the earth is thought to consume more than 50,000 plastic particles annually, and much more if inhalation is taken into account. World Environment Day, which this year celebrates its 50th anniversary, will highlight ways to combat plastic pollution under the hashtag and campaign slogan #BeatPlasticPollution. Single-use plastic that is thrown away or burnt pollutes every ecosystem, from the summits of mountains to the bottom of the ocean, and is harmful to human health and biodiversity. Governments, businesses, and other stakeholders must step up and accelerate efforts to address this catastrophe in light of the science and solutions currently available. This demonstrates the significance of this World Environment Day in inspiring transformative action across the globe. Due to the world's inability to keep up with the world's exponentially rising production of disposable plastic goods, plastic pollution has emerged as one of the most urgent environmental challenges. In developing Asian and African countries with ineffective or non-existent garbage collection systems, plastic pollution is particularly evident. But even in the developed countries, particularly in nations with poor recycling rates, it can be difficult to adequately collect scrap plastic. According to a recent analysis by Un-Plastic Collective, India produces 46 million tonnes of plastic garbage each year, of which 43% is used for packaging and 40% is left uncollected, the majority of which is single-use plastic. Plastic is basically a polymeric substance, which means that it has very massive molecules that frequently resemble long chains comprised of an apparently unlimited number of interconnecting links. Because they are essentially non-biodegradable, manmade plastics tend to linger in natural environments. Additionally, a lot of lightweight single-use plastic items and packaging-which make up about 50% of all plastics produced-are not placed in containers to be later taken to landfills, recycling facilities, or incinerators. Instead, they are carelessly discarded at or close to the spot where they no longer serve the needs of the consumer. In many places of the world, plastic packaging has become a common hazard in the landscape. In fact, the main cause is negligence. The main cause behind all this scenario is negligence. In reality, 80% of marine litter is thought to originate from land. Most of this pollution is caused by poorly recycled household waste that is either left in landfills or left to rot in the environment. The winds and rains carry this trash into streams, rivers, and seas, where it eventually ends up. The receiving body for the majority of the plastic trash produced on land is the ocean because it is downstream from almost every point on land. Every year, several million tonnes of garbage, including a large amount of carelessly disposed plastic waste, enter the world's oceans. Plastic waste has contaminated every area of our earth, from landfills to the oceans, seriously harming ecosystems, wildlife, and public health. The main implications of plastic pollution are:

1. Effect on economy: Revenue from tourism is negatively impacted by plastic waste along the shoreline. For instance, the Andaman and Nicobar Islands are threatened by plastic and are dealing with an aesthetic problem as a result of foreigners dumping plastic waste there.

2. Effect on animals: The confinement of animals in nets or other big detritus is the most obvious consequence of plastic pollution. It is a significant factor in the deaths of birds, turtles, and marine animals. Ingestion is a second direct effect that affects the entire marine ecosystem's food chain. The harmful compounds in the plastics may also endanger the animal's critical organs or biological processes. Plastic pollution poses a grave threat to marine life and terrestrial ecosystems alike. Millions of tons of plastic waste are dumped into the world's oceans annually, endangering marine creatures through entanglement and ingestion. From sea turtles and dolphins to seabirds and fish, the toll on wildlife is devastating.

3. Effect on environment: Multiple possibilities exist for this plastic waste to be a source of chemical contamination. They contain substances that, when consumed by living things, can chemically. They include substances that, when consumed, can chemically transfer to living things. Some of these substances have the potential to be harmful and can build up inside the body. Additionally, because plastic bags impede the process of photosynthesis in agricultural areas, they also have an impact on crop development. Plastics that are disposed of in landfills leach hazardous chemicals into the ground when it rains. Leaching chemicals and harmful substances seep into aquifers and the water table and consequently have an indirect impact on groundwater quality. Many aquatic animals are being nega-

tively impacted by alarming incidences of plastic waste floating on water surfaces in lakes and oceans. When marine animals consume the harmful substances, it has terrible effects on them. According to a United Nations study from 2014, the annual cost of plastic pollution to the oceans is projected to be US\$13 billion.

4. Effect on human population: Plastics may be detrimental to human health because of the chemical additives employed in their manufacture. In fact, exposure to harmful chemicals released by plastic can result in cancer, birth deformities, weakened immunity, and other medical issues. Chemicals including polybrominated diphenyl ether (anti-androgen), bisphenol A (mimics the natural female hormone oestrogen), and phthalates (also known as anti-androgens) are leached from plastics and have an effect on human health, causing different hormonal and genetic diseases. These substances can seriously harm young children and women of reproductive age by interfering with thyroid hormone and endocrine system function.

5. Effect on ecosystems: Additionally, species can be transported by plastic waste, which could broaden the range of some marine animals or introduce new species to areas where they were not previously present. The environment of the area may subsequently change as a result of this.

Keeping in mind the various harmful effects of plastic pollution, several global initiatives to combat plastic pollution have picked up momentum as people, governments, and businesses are urged to act jointly in the direction of a sustainable future. A global convention being negotiated by the United Nations has been attempted as a result of how ubiquitous plastic waste has become. The United Nations Environment Assembly passed a resolution in 2022 with the goal of wrapping up the negotiations by the end of 2024 to create a legally enforceable instrument on plastic pollution, including in the marine environment. At the end of May 2023, the Intergovernmental Negotiating Committee's second meeting (INC-2) conducted in Paris. The instrument must be built on a thorough strategy that considers entire life cycle of plastic. Since the Paris Agreement, this multinational environmental agreement is of the utmost importance. It is a form of insurance for both the current and next generations, allowing them to coexist with plastic without being doomed by it. . We must work together to preserve our environment if we want to safeguard our health, our families, and our way of life. This can be accomplished by stepping up efforts to address the legacy of plastic pollution as well as three major shifts: reuse, recycling, reorient and diversify. Recycling plastic reduces the amount of plastic that ends up in rivers and oceans, protecting ecosystems and conserving natural resources. Reorienting and diversifying the market means moving it towards sustainable plastic substitutes, which calls for a change in consumer demand, legislative frameworks, and cost structures. For example: Use of bio-plastics as an affordable replacement for plastic Plastic waste minimization is the most favoured method of managing waste. Many countries around the world have made commitments in reducing the amount of plastic being produced and used. Govt. of India has also decided to discontinue the manufacture, import, stocking, distribution, sale and use of identified single-use plastic (SUP) . Expanded Producer Responsibility (EPR), correct labelling, and the collection of compostable and biodegradable plastics, while easing the deadline for the use of biodegradable plastic, will all help to strengthen the effort to reduce waste. Develop cutting-edge technology, such as the use of additives to transform polymers like polypropylene and polyethylene into biodegradable polyolefins. Apart from all these measures the most important way is to raise awareness. By making people aware about the harms, implications and alternatives, one can contribute to save the environment at an individual level.

Conclusion: Time is running out, and nature is in a state of emergency. In the absence of action, by the year 2040, the amount of plastic waste entering aquatic environments will nearly triple. Global cooperation is needed from people, governments, and corporations to combat plastic pollution. Plastic pollution has too severe a negative impact on our world and its inhabitants to be ignored. We can contribute towards a future free of plastic by putting new ideas into practice, assisting international projects, and making thoughtful decisions every day. Let's get unite and act decisively to preserve the environment for upcoming generations.

(The authors Dr Vivak M Arya is presently in USA, TEXAS AM&U and Tamanna Sharma is PhD Scholar, SKUAST -J).

Environmental Protection and Sustainability

Our health and also going to give a long term effect on our future generations. We know that millions of people on the Earth depend on forest for their livelihood. Every living being is dependent on plants and trees. Only the plants and trees can make our food. But, we people are degrading the forests in a rapid rate.

The relationship between development and environment is well established. It has been estimated that by 2030 food production will need to double and industrial output and energy use will increase three times in the world and five times in the developing nations. This growth can bring the risk of appalling environmental damage. It can also bring with it better environment protection, clean air, water and eradication of poverty. Environment is one of the most important pillars of sustainable development. Environment protection is an essential part of development. Without adequate environment protection, development is useless. Environmental damage affects the present and future human welfare. It affects human health and reduces agricultural productivity. Some problems are associated with the lack of economic development, inadequate sanitation, clean water and air pollution from biomass burning. Illegal cutting of forests is a matter of great concern. The lack of appropriate technology for maximum utilization of the raw materials, poor silvicultural practices, low recovery, low budgetary provision for forest operations have all hampered effective management. As a result fuel wood, timber, pole wood and carving wood are being exploited at unsustainable levels. Ecological degradation of wetlands together with pollution has resulted in the loss of flora and fauna. The high amount of fertilizers and other inputs required in agriculture for increasing the productivity has led to the degradation of the environment. Despite decades of warning about pollution and efforts to control it, people are still being exposed to toxic pollutants.

Pollution from agricultural land caused

by leaching of nitrogen fertilizers has been detected in the ground water in many areas. In Harayana, for example, some well water is reported to have nitrate concentration ranging from 114 mg. / litre to 1800 mg. /litre far above the national standard 45 mg. /litre. Government should monitor and implement policies to reduce pollution and environment degradation and to safeguard the natural system that supports renewable resources. Action should be taken for achieving a sustainable future. The common property resources which are mostly natural resources must be protected for the overall growth of the nation. Such efforts for preserving the natural resources not only lead to optimum utilization of natural resources but also generate more employment for the people. Sustainable development is focused on any kind of betterment that should not harm the environment so that the well being of future generations is guaranteed and the harmonious relationship environment and development is sustained. Natural resources are the wealth of any nation. Presently they are facing environmental hazards due to various reasons. The process of sustainable development tries to build social and economic progress satisfying the needs and values of the social groups without foreclosing future options. A sustainable development process is of dire need. Environmental aspect assumes great significance in growing deforestation, soil erosion, land degradation, water pollution, biodiversity loss and the like which continue to worsen economic development of India. Environmental quality is an integral part of development. Without environmental ethics development is simply undermined.

Rio-Earth Summit (1992) highlights the view that socio-economic development and environment protection are interdependent and mutually reinforcing processes. Recently, the healthy rural environment has encountered divergent environmental hazards as an addition to

their existing issues of social and economic hardships. Such threats badly affect the local community which is the impetus behind research for alternative sources such as cultivation in marginal lands. It constitutes a growing class of environment refugees. Sustainable development is felt as a necessary intervention to fight against poverty, unemployment and other complicated problems. Sustainable rural development can promote growth and equity simultaneously and also promote the development of democratic process at the grass root level by creating awareness on social forestry, soil conservation, population control, protection of tanks, rural energy management, biodiversity, popularization of eco-friendly activities etc. Sustainable development on the one hand benefits local people and safeguards the flora and fauna of a particular region on the other. Environmental issues cannot be solved unless the local people take part in it. Their participation will help in promoting wildlife conservation, afforestation and also in employment generation. Local people skill and manpower are needed to deal with the aftermath of environmental disasters.Afforestation and arresting of deforestation can be carried with the help of local people. Protection of environment is mainly in the hands of the people. It has been studied that people's participation is the most determining factor of biodiversity conservation. The participatory approach to environmental protection can be strengthened through the decentralized planning which provides opportunity for the different communities to effectively participate in the environmental activities. All the stakeholders should understand the present environmental crisis and find out suitable solutions to tackle this awful situation. We all need to join our hands together to protect the environment.

(The writer is Sr. Scientist & Head of KVK, Reasi SKUAST-J).

