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Forests and Plastic Wastes: A Natural Parasitic Relationship with the Concept of Sustainable Forestry

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Abstract: Sustainable Forest Management refers to the management and utilization of forests and their biodiversity, productivity, reproducibility potential and prospective in the relevant environment, both now and in the future in a manner that does not harm economic and social outputs at different levels, which creates socially equitable, environmentally sound and economically viable outcomes. Proper and sustainable plastic waste management is now seen as a necessity for sustainable forest use, leading to the setting of ambitious targets for recyclability as well as incorporating recycled plastics into products. For the scientific and forest management community, the challenges hindering efforts to mitigate plastic pollution are identified to inform the recommendations presented and emphasize the urgency of finding sustainable solutions to plastic pollution that do not only address the existing issues faced by forests and environments but also future threats presented by plastic pollution. Another way that plastic impact wildlife and forests is by releasing additives such as phthalates and Bisphenol A (BPA) into food chains which disrupts hormone system of vertebrates and invertebrates because they release substances that generate hormone imbalances. Plastic wastes manage to enter into and harm numerous biological functions of animals. In this article concept of sustainable forest practices and addressing the impact of plastic waste on the forests and environment before and during the COVID-19 epidemic are highlighted along with current sources of plastic wastes which manage to enter the environment. With sustainable forestry practices, plastic waste can be reduced, which has a positive impact on the ecosystem.

Keywords: Sustainable forest management, COVID-19, plastic waste management, phthalates, bisphenol A, food chain

1. Introduction

Forests are an inevitable natural capital. Historical progressive efforts have focused primarily on the creation of natural capital to sustain the livelihoods of the poor without regard to how these assets, such as forests, interact equally with other assets. This shortcoming has created a gap in comprehending the impact of forest products on sustainable sustenance.

It is challenging to calculate the general involvement of forests and timber to subsistence. A large percentage of forest crops are spent by humans collecting them, and the amount earned with seasonality, access and options is constantly changing. Most adaptable data are indicative and sometimes exceptional, with a few exceptions [1]. Some research calculates income and expenses from family inputs, labor allocations and forest products ventures.

Citing Earth Bank reviews, he said, 'Countless human beings around the world should be encouraged to stay in the forests without delay for their benefit and livelihood'. This record has been confirmed by the International Center for Forestry Research (CIFOR) [2,3]. Approximately one billion people use fuelwood and coal as basic supplies to cook and heat their homes and for the production of substances without delay from the wooded area. This fully designates the importance of forests in safeguarding survival altogether consequences [2].

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2. Benefits of Forests

Human societies receive many assistances from forest habitat and environment, both above and beyond their function as habitats and ecological regulators. These assistances include energy, wood and materials that can be used for frivolous and commercial resolutions. The belief that forests deliver people with resources is a key element in efforts to conserve forests. Given below are such instances which provide benefits to civilization.

2.1 Increased Income

Although earnings alone are inadequate as a way to measure poverty, extended earnings have an important bearing on household economic viability. Forest-based earnings are frequently very substantial as a supplement to other sources of wages. A large number of families earn a lot of their earnings through retailing forest products, frequently on a part-time basis when farm manufacture isn't enough to provide food all-year round. The volume of forest-based earnings-producing activities can vary significantly between harvests, as some products are available only at certain moments of the year, demand ranges seasonally, and earnings from forest products can go toward purchasing farm inputs or food between harvests. The agricultural poor frequently produce, process, and promote forest products (e.g. making mats and baskets and promoting fuelwood) in the absence of jobs available elsewhere [4]. Forest products are typically used for generating inputs for different activities that contribute to livelihoods: to produce seeds, hire labour to cultivate, and gather capital to purchase and sell commodities [5].

2.2 Improved Food Security

Besides serving as an important source of food ingredients to complement the products found in agriculture, forests provide wood fuel for cooking dinner and boiling water, in addition to conventional drugs and other hygiene products. In regard to nutritional, cooking, and/or fitness needs, most rural families in developing countries rely on the plant and animal products of forests to a certain extent. Fuelwood is the most efficient and economical source of gas for cooking, and it plays an important role in both nutrition and disease prevention, since cooking is essential for making many meals digestible, killing microbes, and eliminating parasites. Furthermore, forests are key to livelihoods by offering substances like building materials, baskets, garage structures, agricultural implements like fodder and mulch, boats, and hunting and fishing equipment. They also assist with nutrient cycling in soil, assist in conservation of soil and water, and provide refugee shade for plants and animals.

2.3 Reduced Vulnerability

The poor are often living precariously, without any cushion to protect them in the face of adversity Forests and trees play a significant role in providing both subsistence and income during times of failure, shortfall, unemployment, or other emergencies and hardships, or to meet particular needs. Forest ingredients are most severely needed during specific seasons throughout the year. The energy-dense forest ingredients like roots, tubers, rhizomes, and nuts can be useful especially in emergency situations like floods, famines, droughts, and wars.

Halting and reversing deforestation offer a cost-effective and natural solution to curtail worldwide climate change. The current tropical tree cover alone should be adequate to mitigate 23 percentage of the climate change over the subsequent decade, as specified within the Paris Agreement [5].

Healthy forests can supply huge monetary and weather flexibility assistances, enhance meals security, lower biodiversity damage, and gain human and atmosphere vigor. Around 25 percent of the world's population depends on forest species and forest-associated livelihoods for food, shelter, energy, and medicine. Forests, forests species, and forest-associated livelihoods however stay below regular and ever-growing hazards caused by deforestation and degradation.

The participatory forest management (PFM) approach, involving neighboring groups in the monitoring, management, and clearance of their forests, is a multi-stakeholder approach to combating this in many low- and middle-income countries (LMICs). Forest resources enable to achieve sustainability and conserve biodiversity. PFM has been adopted in Kenya since 2005, when forest control generally develops as forest-adjacent groups engage in conservation and rehabilitation efforts with strategies to improve livelihood opportunities. A previous study by the GSMA CleanTech team recommended that virtual technology provide Kenya with new opportunities to increase the efficiency, effectiveness, and transparency of PFM efforts - digital dividends in the management of useful resources that can reduce poverty [17]. Over the remaining few months, forest management communities are trying to achieve those expectations by piloting new qualitative and quantitative studies with community forest associations (CFAs) across the country, as well as companies that fund PFMs such as Safaricom, KFS, and WWF. Kenya, Kenya Forestry Research Institute, National Alliance of Community Forest Associations (NACOFA), Wildlife Action and more [5].

Growing awareness of the benefits of forests to humans from governments and the general public around the world has led to a growing industry dedicated to government agencies and forest resource management. Management of forest resources is defined as enhancing the quality of life of people while conserving and managing forest resources, with a focus on conservation and sustainability.

3. Plastic Wastes: An Uphill Battle Against an Indomitable Foe

There is a pervasive presence of plastic pollution in both terrestrial and aquatic ecosystems Plastic waste that has come into contact with the environment causes problems and is a subject of health concern to all organisms Plastics are being created and stored at unprecedented levels in the natural environment due to indiscriminate use, inadequate recycling and accumulation in the ground [6]. In 2019, world production of plastics was 370 million tons, of which only 9% was recycled, 12% was incinerated and the rest was released into the environment or land. We are witnessing an unprecedented level of plastic waste leakage into terrestrial ecosystems and aquatic ecosystems [6] Plastic waste management presently poses a challenging issue for researchers, citizens, and others. This paper summarizes today's perceptions and concerns about plastic pollution (microplastics or nanoplastics). Irrational production, improper disposal on land and improper recycling management can lead to plastic waste [6]. Environmental contamination is occurring at an unprecedented rate as plastic waste is discarded into terrestrial and aquatic ecosystems, which can, in turn, cause significant challenges to the management of waste for growing populations, primarily in developing countries [11,12]. In 1950, the global plastics production was 1.5 million tonnes, growing to 370 million tonnes in 2019 [13], second only to Asia's largest contributor (51%), followed by the North American Free Trade Agreement (NAFTA) countries (Canada, Mexico and the United States of America; 19%), Europe (16%), Middle East and Africa (7%), Latin America (4%), and the Commonwealth of Independent States (Azerbaijan, Armenia, Belarus, Georgia and others; 3%) [6,14,15]. Geyer *et al.* [6,16] In the current business-general scenario of waste management, plastic waste in the land and natural ecosystems is projected to reach 12 billion tons by 2050, unless any significant improvements are made through technological innovations and other interventions. Plastic pollution is a comprehensive apprehension that needs to be given a dissertation on collectively as a top precedence.

4. Plastic Expenditure for the Duration of COVID-19 Pandemic: Its Impact on Degrading Environment

The global unfold of the SARS-CoV-2 virus directed us to the endless COVID-19 [7] pandemic withinside the cutting-edge world, for the most part accredited to the exploitation of environment via way of means of us, that massively augmented its fatality, economy, and ecology. Apparently, civilization inside the beyond has become inhabited by bacteria and microorganisms that are building up their plastic waste, and consequently, COVID-19 has invaded human habitations. Amidst the accelerated number of worldwide cases, the ignored factor of this poignant occasion has been the intensification in the quantity of plastic waste generated withinside the shape of clinical waste, viz., face mask and pliable shields, analysis apparatus, PPE kits, medicinal syringes, etc. [7]. Due to the outbreak of Coronavirus, manufacturers and producers of unmarried solicitation plastic have exponentially increased their use within the domestic segment of the lockdown due to the manufacturing and disposal of this exact shape.

The onset of the COVID-19 pandemic has brought serious attention to devastating impact on human health, which has led to a carbon-positive setting, with increased amounts of greenhouse gases produced by the dispensation of waste plastics. Micro probing the effect at a nation-level, the analysis studies via way of means of Law *et al.* take a look at the information till 2016 in which the USA engendered the most plastic waste of approximately forty million metric tons [8]. Linking the existing arithmetical data with research carried out by Borrelle *et al.* [7], the terrestrial hazard of plastic contaminants is assured to grow and progress exponentially, specially amidst the COVID-19 pandemic, exceeding the exertions to lessen the plastic impression. Based on an approximation of the global plastic waste generation rate of 1.8 million tons per day from the inception of the COVID-19 pandemic, over 900 million tons of plastic waste were generated in 3 years of the pandemic [7,9]. With the prevalence of COVID-19 amongst humans rise up to near 389 million, the researchers assert that the economic, health, and social responses to the COVID-19 pandemic have completely altered plastic waste manufacturing, construction, and treatment methods across the world, the primary reason being the usage of clinical-use plastic. Therefore, the world must ensure that its plastic waste is properly managed [10]. Irrefutably, using plastic in combating towards the COVID-19 pandemic stored hundreds of thousands of lives; however plastic clinical wastes will continue to be discarded non-systematically within the post-COVID-19 era, posing an ecology-threatening polluting movement.

5. Role of Forest: People Relationships

The following examples illustrate that the nature of the dependence varies among the world's underprivileged people in recent times. One-quarter of them depend directly or indirectly upon forests for their livelihood.

5.1 Main Source of Livelihood

Individuals residing in forest woodland environments and practicing hunting, collecting, and swidden agriculture (transferring cultivation) draw closely on forest products, now no longer best for subsistence however additionally for earnings from forest products. Forest-associated earnings additionally consists of that received by promoting vegetation or farm animals that forest nutrients or fodder have been essential.

While a few hunter-collector populations have reserved a self-reliant and sustenance manner of life, maximum are an increasing number of turning into devoted outdoor markets and goods. However, the volume of woodland reliance amongst those peoples stays high, as does the traditional importance of the forest to them. More so, forests play different roles in serving as a possible manner of survival.

5.2 Provision of Job and Sources of Livelihood

Millions of people around the world live from the wild, with many earning the most on various timber value chains; many crop trees provide income and livelihood for humans to gather the materials needed to make other products which in an exceeding way generate income and sustenance.

Forests also play critical roles in biodiversity and ecosystem, such as:

- Absorbing harmful greenhouse gasses that produce natural action
- Allocation as a buffer in natural cataclysms like floods and precipitations
- They are furnishing habitat to quite half the world's land-based species, among many others.

Cumulatively, forests play a key role in combating activity, contributing to the well-being and sustainability of current and future generations, and achieving sustainable development goals - zero poverty, responsible consumption and productivity, climate change and living shores.

6. Need for Sustainable Forest Management Practices

Despite the crucial roles of forests in making sure livelihoods and ecosystems, forests are being threatened with various levels of human activities like deforestation, unlawful logging, poaching, amongst others. The vital amongst such projects is that the tenets of deforestation.

As the outcomes of unsustainable wooded area control practices, deforestation stays one all informed the most tremendous causal elements of the maximum crucial environmental threat activity. Deforestation has verified to have an effect on lifestyles ashore and encroach flora and fauna species and ensuring in sustainability challenges. Reports have it that their loss of about 32 million acres to deforestation and different human campaigns in line with annum [18].

Meanwhile, in 2019, Nigerian Conservation Foundation mentioned that Nigeria had absolutely the first-class deforestation charges in 2005 and misplaced 96% of its forests in 2019, as said through the Nigerian Conservation Foundation. This file comprises of the concerted efforts to create certain sustainable forest control to verify human being's chronic sustenance and additionally the earth [19].

Where wooded area merchandise has a quite crucial function however are extra efficaciously provided from non-wooded area reassets, wooded area control and coverage might also additionally be geared toward assisting agroforestry. Although presenting inducements for tree implanting has been the most shape of interpolation in the past, profits from tree developing are much more in probable to be improved through presenting manufacturers with higher get entry to markets. Priority regularly should be to converting the guidelines and practices that make marketplace regulations which depress marketplace charges for wooded area or tree products.

In general, these constraints include lack of information about the market, poorly functioning buying and selling structures for small manufacturers, depressed fuelwood prices caused by subsidies to alternative fuels, as well as funding manipulation by State Forest and plantation companies. Furthermore, it is possible to disrupt the shift from subsistence to marketplace economy by preventing farmers from accessing tree product markets.

Small company surveys consistently show that most of the three largest reconsiderations of employment in rural production and buying and selling are wooded area products. The rural poor, especially the landless, who do not depend on extraordinary places, seek help in discovering potential in those areas. Producers and consumers may additionally need advanced access to credit, skills, advertising services, etc. In reality, the needs and opportunities on the target group vary. Humans seeking forest occupation as a means of making a living through supply side forces are not given the same desire as those who respond to push opportunities.

A product expansion without regard for holding it under control, as happened with baskets in Botswana for instance, shouldn't be encouraged. Sustainable livelihoods are inseparable from a sustainably controlled aid base. Funding is needed to facilitate the occasion for participatory assessment, monitoring, and assessment of forest capitals.

Local marketplaces for forest harvests might also additionally offer extra solid possibilities for development. The massive issue of forest product activities inside the agricultural quarter displays the dimensions of rural markets for those products. Where delivery infrastructures are exceptionally poor, those merchandise are extra efficaciously provided locally. Various products that were traditionally available only in rural areas, like fuelwood and wooded area fruits, are becoming increasingly commercialized, but most of the growth has been attributed to urbanization progression.

7. Primary Linkage between Forests and Plastic Wastes

Despite the need to manage plastic effluence [20] in less industrialized countries, natural ecosystems and forests are adversely affected by plastic pollution. Underprivileged individuals are ruthlessly affected by meteorological conditions, events and disasters. Therefore, action is necessary to generate a resilient atmosphere with less plastic pollution and risks to economic, social and environmental development. These societies are already poor and maximum of the population is below the poverty contour. The negative impact of plastic pollution on their value sequence (agriculture or aquaculture) creates new glitches on productivity and income generation opportunities. The unceremonious waste administration sector is needed for plastic waste to recover livelihoods as well as global vocation between developed and developing countries. Masses of people are still stressed with hunger, undernourishment, depression and waste complications predominant in the Global South [21,22]. China is the principal consumer of plastic effluence in agricultural systems; it is assessed that 580,900 tonnes of plastic residue is dumped in the soil, causing in a 6-10% reduction in cotton harvests in some adulterated areas due to plastic residues [23]. A comprehensive meta-analysis of the effects of plastic mulching and plastic residue on agricultural production has shown that plastic mulching has benefits in increasing crop production, although lingering plastic film can harshly affect crop yields over time [24]. As a result, plastic pollution in the soil stances a threat not only to soil health, soil and crop production, but also to nutrition security and human health. Plastic cells have been discovered in human guts and feces [25,26,27,28]. However, nano-level plasticity at high concentrations causes native inflammation and direct communication with RBCs (red blood cells) leads to hemolysis [29]. Dioxins, furans and other toxins produced during exposed burning for discarding can result in respiratory problems [30,31]. Not only does plastic have a direct negative consequence, trace elements are also absorbed on plastic surfaces, which is also dangerous to human health. Scientific revisions [6,27] have highlighted that once plastic is present in the gastrointestinal tract and stomach, it affects the human digestive and immune systems, but little is known about the effects of trace-elements-sorbent particulate plastic on humans.

Formal or informal edification, with training and public awareness, is critical for indorsing sustainable progression and refining public proficiency. Stimulating gender equality in civilization is fundamental for reinstating ecosystem amenities and guarding the planet's oceans. Women engaged in dialogue, modernization and the fortification of the oceans play an important role in decision-making to safeguard miscellany and gender annexation at all levels [32]. Women are the prevalent consumers of personal care and beautifying products, such as microbeads and MP, which end up in water supplies. However, men are also important sources of plastic pollution to marine ecosystems as they fish in oceans, rivers, etc. In order to strengthen accountability mechanisms through effective interventions and diverse public awareness and training programmes, gender-based roles and attitudes towards plastics management should be acknowledged and addressed [32].

A larger effort is needed to find sustainable substitutes to plastic waste management, such as biodegradable plastics [33]. Currently, biodegradable plastics represent only 3% of overall plastics manufacture, but there has to be a greater focus on innovation and use of biodegradable plastics to substitute conventional plastics. Several innovative products have been developed using pyrolysis oil extraction, including multiwalled carbon nanotubes [34], plastic wax [35,36] and other high-value chemicals [37]. Plastic waste is also used in concrete [38] for the manufacture of tiles [39], bricks [40], and paved roads [41]. Groundbreaking syndicates and startups have been reported to be lucrative in co-operating with waste pickers in waste cleaning businesses [42].

The worldwide vocation in plastic waste has been prototypical for plastic waste management for periods [43]. Such applies have been widely disparaged for placing plastic pollution encumbrance on developed countries [6], from developed nations. Having barred the import of plastic waste, China has now chosen Southeast Asian nations for its destination. These countries lack reprocessing facilities, so their waste is discarded in landfills and burnt or released into the environment [6]. As a result of these highly sustainable approaches, enormous gaps exist in terms of unavoidable plastic pollution and environmental costs. Dumping plastics produced in developed economies into developing economies poses a more serious ecological risk to a more vulnerable population or to a world in need of better nutrition.

In addition, some of these parsimonies are at the mercy of tourism, where plastic waste is unfavorably affected by the annihilation of their usual ecosystems that safeguard biodiversity. This fuels the struggle amid indigenous frugalities and exacerbates inequalities. Indecorous administration of plastic effluence is distressing terrestrial ecosystems [44,45]; Nevertheless, an enormous quantity of research studies has been conveyed for aquatic ecosystems [46,47,48]. Terrestrial ecosystems comprise more microplastic waste: 5 to 23 times more than that found in marine ecosystems [49]. In order to reinstate and safeguard biodiversity in terrestrial ecosystems, it is essential to study the effects of macro, micro and nanoplastics on terrestrial ecosystems as well as aquatic ecosystems. Plastic pollution is a worldwide problem, which requires international cooperation composed of government, national and local agencies, a secluded subdivision and civil society. Solving this global problem necessitates mutual action and all administrations ought to come together to muster and adhere to suitable capitals to reduce plastic pollution [6]. However, the lack of sustainable plastic waste management poses a serious threat to the environment worldwide. Novelties that can additionally ease the negative effects of plastics ought to be scaled by partnership to be on par with developing countries.

8. Plastic Decomposition and Its Impact on Forests and Ecosystems

As a result of their stability and durability, plastics have gained wide acceptance in society, and they are also environmentally sustainable when disposed of. Plastics degrade under different environmental conditions through four main mechanisms: photodegradation, thermal degradation, hydrolysis, and microbiological degradation [53]. It is usually photodegradation by sunlight that initiates the process of thermoxidative degradation [50,51] Eventually, at the molecular level, plastics are metabolized by microorganisms [50,52], which biosynthesize carbon atoms from the polymer chains into molecules or oxidize them to CO2. However, this process of decomposition is really slow. The lifespan of foam is estimated to be 50 years for plastic cups, 400 years for drinking cups, 450 years for disposable diapers, and 600 years for fishing line, and water cooling does not provide an efficient way to decompose polymeric components of plastic debris [53]. Sending plastic waste to landfills results in unavailable land that could be used for agriculture and most plastics are perishable but slow decomposing [53]. The degradation of plastics in landslide environments can result in the release of a variety of secondary pollutants including unstable organic species such as benzene, toluene, xylene, ethylbenzene, and trimethylbenzene isomers, or by leaching together with the hazard groundwater pollution including BPA (Bisphenol A) [54,55], among other toxins. BPA is known to disrupt the endocrine system but has also been shown that by reducing sulfur sulfate in soil, hydrogen sulfide is produced.

Although the low thermal conductivity of plastic materials is measured beneficial in some solicitations [56] these plastics contribute to global warming when dispersed in the marine environment; They displace the same amount of water and limit the course of heat from the sun into the aquatic atmosphere, leading to sea level upsurge and the scattering of energy in the instant atmosphere [57]. Plastics contribute to environmental stress due to the degradation pathways that they undergo in the environment. According to a study by Gwert et al [58], PVC undergoes dichlorination in the environment when exposed to ultraviolet radiation, forming polyenes and hydrochloric acid (HCl) under the influence of water [59]. By releasing HCl, this process will cause the pH levels to decrease in aquatic environments, contributing to the acidification process [59]. Increasing ocean acidity is believed to exacerbate global warming [60,61], negatively affecting habitats and the characteristics of various environments [62,63] Due to the butterfly effect, exceeding an environment's load capacity is thought to lead to unpredictable, and possibly catastrophic, outcomes.

Because of their complex chemical composition, plastics are resilient and do not degrade easily. Different types of plastics have different properties concerning adulteration absorption and adsorption. Because of the salty environment and the cooling effect of the ocean, polymer degradation takes a long time. Studies conducted by marine experts have enabled them to predict the rates of decomposition of different plastic products, which have contributed to the persistence of plastic debris in some environments. The burning of plastic can harm the atmosphere and result in deadly illnesses, according to recent research. It is estimated it will take 400 years for a plastic beverage holder, 50 years for a foam plastic cup, 450 years for a disposable diaper, and 600 years for fishing lines to degrade [64]. When plastics are being discarded in this manner, they accumulate in a landfill, which leads to an incessant release of toxins. However, dumping plastic wastes in landfills does not produce as much greenhouse gas emissions as incineration, but landfills have limited space [64]. It should also be considered that the plastic liners that act as a defensive layer between landfills and the environment can disrupt, releasing toxins and polluting nearby soil and water [64]. Recycling plastics alone is insufficient to moderate the increasing amount of plastic litter throughout the world. Recycling plastic could trigger the release of plastic irritants and harmful chemicals. There is also evidence that plastic wastes negatively affect food chains, which, in turn, affect forests and ecosystems. A food chain is a sequential order of who eats whom in an ecosystem, especially when those species are at low feeding levels [65]. An ecosystem is a collection of groups of organisms that interrelate with each other and with the physical environment through the course of energy and the reutilizing of materials [65].

The transfer of energy within an ecosystem is key to how it functions. According to [65], each species has a specific place in the hierarchy of feeding levels. Most of the organism in the food chain feed on plastic wastes. The plastic wastes are available in large or small sizes. Plankton, the smallest organism on the planet, is seriously impacted by plastic pollution. When these organisms, which are producers, eat plastics, they become gangrenous, which subsequently affects the animals that are consumers and rely on them for food in the food chain [64]. This results in an impediment to the food chain and the ecosystem as a whole. As a result, plankton, fish, and mostly humans are exposed to highly toxic carcinogens and chemicals as they move through the food chain.

The environmental pollution caused by plastic has led to the development of cleanup strategies in an attempt to mitigate its effects, but these strategies haven't been able to compete with the expanding amount of plastic entering the environment. It is therefore important to prioritize reducing inputs of plastic into the environment through a global multidisciplinary approach [66]. By improving production, use, and disposal of plastic waste through improved life cycle management, through an Integrated Waste Management System, mismanaged waste can be reduced as a major source of plastic pollution.

9. Conclusion

In recent times, forest management committees wish to spur actions to promote forest and sustainable forest management models and practices for humans' sustenance and also the long-term conservation of forests, fauna and flora, and ecosystems. Also, everyone must promote the price of traditional methods and knowledge that contribute to establishing a more sustainable relationship to promote sustainability for future generations. Most human activities are hooked into forests for survival and sustaining life onto land through ecosystem balance.

The continual international priority of human fitness over ecological fitness has epitomized the sovereignty of people over environment. The truth regarding the technological precept of upvaluation to decrease the plastic footmark in preference to the traditional annihilation of plastic waste through incineration or the unconventional techniques of time-ingesting bacterial decomposition is strappingly accepted by us. Moreover, recuperation of plastic waste using the process of recycling within the loop perpetuates the invariability of the plastic footprint. Recovering plastic waste in this manner cannot be a sustainable method of reducing it. Additionally, it could cause exponential growth in the environmental emissions related to recycling. Emphasis is placed on the need for life cycle assessment and circulation to assess potential environmental impacts and resources used throughout the life of the plastic product. In an analogous opinion, the studies of upcycling pliable waste have increased substantially in the past few years, and researchers have been successful in upcycling the plastic into carbon nanotubes, carbon spheres, natural compounds, and detergents, as well as the degradation of plastic into hydrogen and high-priced carbon products by using novel methods. Moreover, an idea utility inclusive of Trash-to-Tank additionally gives a feasible technique to the continual hassle of plastic waste accumulation precise to the growing countries [7]. The scalability of the generation across all continents is the only aspect remaining to be addressed for the time-honored application, and the researchers deliver credence to the prominence of coming near scalable studies and enhancement activities on the way to be dedicated towards the exhaustive confiscation of the engendered waste plastics in an environmentally benign fashion, sooner than later. Creating public awareness and plastic ban policies are major mitigation interventions for environment and forest safety.

However, as the world meet the demand for human sustenance utilizing forest and forest resources, everyone ought to conserve forest and forest resources by adopting sustainable forest management practices. By supporting actions towards sustainable forest management practices, we can build a sustainable future use for generations.

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