



Initiatives on Plastic Pollution Control and Prevention

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ABSTRACT

Plastic contamination has risen as a basic natural challenge, with noteworthy impacts on marine environments, earthly territories, and human well-being. Tending to this issue requires comprehensive techniques enveloping lessening, reuse, reusing, and approaching intercessions. This paper surveys different worldwide and nearby activities pointed at controlling and avoiding plastic contamination. Key activities incorporate universal assertions just like the Basel Tradition, national arrangements such as plastic bags and charges, corporate commitments to economical bundling, and grassroots developments advancing zero-waste ways of life. The adequacy of these activities is assessed, highlighting triumphs and regions requiring change. Inventive approaches, including the advancement of biodegradable plastics, improved reusing advances, and open instruction campaigns, are also investigated. The consideration underscores the significance of multi-stakeholder collaboration and persistent advancement in moderating plastic contamination and cultivating economical natural hones.

Keywords: Plastic pollution, Pollution control, Waste management, Environmental initiatives, Sustainable practices, Plastic waste reduction, Recycling programs, Environmental education, Global initiatives.

Introduction:

Plastic pollution has risen as one of the foremost squeezing natural challenges of the 21st century. The expansion of plastic items, characterized by their strength and comfort, has driven to far-reaching defilement of earthly and marine biological systems. Each year, millions of tons of plastic are produced, with a critical parcel finishing up in seas, waterways, and landfills, unfavourably influencing natural life and human well-being. The persistence of plastics within the environment, frequently taking hundreds of a long time to break down, compounds this emergency, requiring pressing and comprehensive procedures to relieve its effect.

In reaction to the developing plastic contamination emergency, various activities have been propelled all-inclusive, aimed at both controlling the expansion of plastic squandering and avoiding natural debasement. These activities run from grassroots developments pushing for diminished plastic utilization to universal understandings and approaches pointed at directing plastic generation and squander administration. Innovative progressions have moreover played a pivotal part, with advancements in reusing forms and the improvement of biodegradable options advertising potential pathways towards a more feasible future.

This investigative article dives into the different activities on plastic contamination control and avoidance, assessing their viability and recognizing the best hones that can be received over distinctive settings. By looking at case studies from different geological districts, the article looks to supply a comprehensive diagram of the techniques utilized, the challenges confronted, and the triumphs accomplished in the battle against plastic contamination. Moreover, it points to highlight the part of approach mediations, community engagement, and innovative advancements in driving advance toward a plastic-free environment.

Understanding the multifaceted nature of plastic contamination and the assorted approaches to tend to it is fundamental for creating vigorous and feasible arrangements. This article contributes to the developing body of writing on natural administration and arrangement by synthesizing current information and advertising bits of knowledge into future bearings for plastic contamination control and avoidance.

Initiatives for Environmental Plastics Prevention and Control

An assortment of procedures have been recommended to address the issue of plastic pollution. Regulation interest is one of the essential techniques utilized to address the current circumstance. Educators at the worldwide, territorial, and national levels play a basic part in controlling and dodging the collection of plastic waste in marine and coastal territories.

Global-scale activities

The Joined Together Countries (UN) Common Gathering on Seas and the Law of the Ocean are illustrations of such worldwide activities that are valuable for tending to this issue. The UN Tradition on the Law of the Ocean (UNCLOS) gives a worldwide lawful system for controlling plastic defilement. Articles 207 and 211 emphasize marine contamination, counting plastic flotsam and jetsam aggregation with a specific center on the lessening, control, and anticipation of plastic litter. Advance, states are provisioning for controlling, lessening, and anticipating contamination from distinctive sources like land-based and sea-based sources. UN Common Gathering has also delivered basic announcements to form the marine environment cleaner. That incorporates determination to make organization for mindfulness between the common open and private division concerning the impacts of plastic contamination on environmental, social, and financial perspectives and the unequivocal integration for tending to the issues emerging from defilement by plastic flotsam and jetsam as adjusting with a national key system (Hirai et al., 2011; Cole et al., 2013). Advance, the same determination states that (Chiappone et al. (2002)) universal, national, and territorial organizations [e.g., Universal Oceanic Organization, Nourishment and Agribusiness Organization of the Joined Together Countries (FAO), Joined Together Countries Environment Program (UNEP), and sub-regional fisheries administration organizations] must include with finding arrangements for anticipating the collection of misplaced or deserted angling gears/ALDF. Plastic defilement is identified as one of the genuine natural issues (UNEP, 2011). The Joined Together Countries Tradition on Economical Advancement (Rio 20) conference raised the need for plastic contamination control within the sea bowls, counting marine zones. It assists highlighted (163) the execution of the system of the Universal Oceanic Organization (IMO). It states to conduct distinctive activities by recognizing reasonable needs for administering marine contamination utilizing logical information or proof by 2025. This kind of logical literature review will act as reference information for prioritizing and actualizing administration exercises appropriately at a worldwide level. On the other hand, the Universal Tradition for the Anticipation of Marine Contamination (MARPOL) centering on exercises of ships is the legislator's body valuable in securing the over objective. That tradition addresses taking after key zones that are straightforwardly and in a roundabout way related to the plastic contamination control and anticipation within the ocean: administration of rubbish counting plastic litter, denying dumping and disposing of plastic litter into the sea with the inclusion of part states, and obligations related to surrendered, misplaced, or something else disposed of angling gears (ALDF) by minimizing the squander (counting plastic flotsam and jetsam, particularly wastes/litter from angling gears) gotten from capture fishery segment.

Convention on Biological Diversity (CBD) (Article no. 70) states lessening the impacts of plastic contamination on coastal and marine biodiversity utilizing techniques (e.g., Strategic Environmental Assessments: SEAs and Environmental Impact Assessments: EIAs) to avoid marine contamination. The backup party on Logical, Specialized, and Mechanical Exhortation (SBSTTA) acts as the Logical Admonitory body of CBD. Taking after choices were made at the 16th assembly of SBSTTA for controlling contamination counting plastic collection in marine and coastal zones in 2012:

- (i) observing and documentation of the impacts of flotsam and jetsam on biodiversity and environments,
- (ii) logical investigation and attainable considers on administration and controlling of plastic and other sorts of flotsam and jetsam,
- (iii) territorial level capacity building programs centering on strategies and approaches of anticipating and controlling issues related to plastics and diverse sorts of litter amassing.

The tradition of Transitory Species (CMS) has also come to control with the usage of taking after activities:

- (i) looking for marine flotsam and jetsam hotspots all over the world,
- (ii) surveying the impacts of plastic and other sorts of litter on coastal and marine biodiversity,
- (iii) distinguishing proof of strategies and instruments of controlling marine flotsam and jetsam collecting sources at the territorial level,
- (iv) executing an activity arrange to moderate the contamination by flotsam and jetsam statement within the marine environment at the national level.

The logical chamber encourages prescribed evaluating of the impacts on migratory species by marine flotsam and jetsam, looking for rising issues related to community mindfulness on marine flotsam and jetsam amassing, and recognizing best administration hones on squander control for sea ships and vessels. Even though plastic contamination and squandered administration are interrelated components, a universal, lawful structure, or assertion centering on completely squandered administration has not been created (Thevenon et al., 2014).

Be that as it may, a few sorts of universal activities center on squandering administration, in a roundabout way, or as a portion of contamination control and anticipation. UNEP committee (25/8) has chosen to apply a down-to-earth approach to squander administration. They have tended to the national system plan beneath the topic of "shift from an end-of-pipe approach in squander administration to coordinates squander administration approach" (UNEP, 2011). Mitigation of issues on marine plastic flotsam and jetsam amassing and plastic contamination is related to squander administration hones; in this way, a universally acknowledged, coordinated squander administration program has been prescribed to address the issue (UNEP, 2011). Basel Tradition is one of the foremost basic worldwide enactments centered on perilous squandering and transfer. Strong plastic parts are considered unsafe squander with serious risks to human wellbeing (UNEP, 2005). In 2008, the Basel tradition executed the Bali statement on the topic of "Waste Management for Human Wellbeing and Livelihoods." This affirmation works for squandered administration. Since dangerous squander is composed of plastic flotsam and jetsam, plastic contamination control is connected with the Basel tradition. The Worldwide Association on Squander Administration (GPWM) of UNEP opened the way for working collaboratively with the worldwide and non-government parties for squander administration that are considered an elective for plastic contamination control within the marine environment in 2010. Taking after activities were arranged for usage with

an uncommon center on moderation of squander collection and plastic contamination by GPWM: recognizable proof of related issues, propose fitting arrangements to overcome the above-identified issues, spread the discoveries, create the worldwide bolster and association, mindfulness, political bolster, create offices, and capacity to trap wastes.

Honolulu Procedure acts as another worldwide system and activity for work anticipating and administration of flotsam and jetsam, counting plastic squanders with the collaborative participation of the US National Maritime and Climatic Organization (NOAA) and UNEP. This activity guides observing and moderation of litter, counting plastic flotsam and jetsam. In 2012, the European Commission and 64 government bodies collectively concurred with the Manila statement that addresses the achievement of the Worldwide Program of UNEP for the administration of flotsam and jetsam sources from land-based exercises. Individuals of the Manila statement moreover collectively concurred to define important national-level arrangements in controlling contamination, counting marine flotsam and jetsam aggregation, which hurts marine environments. Too, accomplices to the Manila affirmation received within the execution of the Worldwide Association on Marine Litter (GPML) beneath the direction of the Honolulu Methodology. Its advance included lessening contamination from ocean-based sources with the following objectives:

- (i) restricting defilement levels and conceivable impacts from ocean-based sources mindful of the amassing of flotsam and jetsam counting plastics into sea-going frameworks,
- (ii) decreasing levels and impacts of marine flotsam and jetsam counting plastics on coasts, sea-going territories, and biodiversity, and
- (iii) confinement of collection levels and impacts of flotsam and jetsam from strong squanders and land-based litter into the sea-going biological systems.

Regional-scale activities

At the territorial level, the Territorial Oceans Program of UNEP proposed pertinent exercises for 13 territorial oceans: Mediterranean Ocean, Baltic Ocean, Dark Ocean, Caspian Ocean, East Asian Ocean, Ruddy Ocean, Eastern African Ocean, South Asian Ocean, More extensive Caribbean Ocean, Northeast Atlantic Ocean, Inlet of Aden Ocean, Northwest Pacific Ocean, and Southeast Pacific Ocean. Coastal cleanup programs have been completed to a worldwide extent in all the locales. European Union's Marine Procedure System Order, MSFD, set up in 2008, centers on minimizing the sum of marine flotsam and jetsam at a territorial level. The mandate points to the maintainable utilization of assets within the environment while preserving biological systems through the Ecosystem-Based Approach (EBA). This errand may be a collaborative exertion of all European nations. Individuals are required to screen marine zones and recognize achievable targets by 2020. It assists includes the operational program for guaranteeing the targets are accomplished. South Korea conducted a long-term extend to address the issue of marine flotsam and jetsam: an in-depth overview and observing, distinguishing proof, avoidance, disposal, treatment, and reusing of marine squander for ten a long time (GEF, 2012). At the territorial level, a disposed of angling adapt collection venture was executed in Hawaii and South African Coasts through NOAA/MDP. In addition, logical considerations are prescribed to recognize the conveyance design of plastic toxins in South America's estuarine environments for successful administration plans (Chen, 2015; Costa and Barletta, 2015, 2016). Barletta et al. (2019) moreover prescribed the preservation plans for estuaries in South America centering on yearly varieties of eco line, maintenance reusing cycles, the flush of natural markers, and impacts on trophic networks over the entirety scope of slopes of estuary biological systems to overcome the developing issues related with contamination. Rebuilding of tidal and waterway driving is prescribed as the foremost fitting choice for environment recovery by progressing the quality of the estuarine environment in South America at the regional level (Storm et al., 2005; Slater, 2016).

National-level activities

Most of the national level enactment addresses the issue of strong squander administration and squander generation while diminishing plastic contamination in marine and coastal environments. Within the US, the Marine Flotsam and Jetsam Inquire about, Avoidance, and Decrease Act and Marine Plastic Contamination Investigate and Control Act are key authoritative pieces critical in the relief of plastic contamination at the national level. In South Korea, the Viable Coordinates Framework of Marine Flotsam and Jetsam was set up to anticipate marine flotsam and jetsam collection from 1999 to 2009, for ten a long time. Scotland created a Scottish marine litter procedure in 2013. In Sri Lanka, national-level directions on polythene and other sorts of plastic administration were presented in 2017. This enactment was made after endeavors beneath the National Natural Act No. 47 of 1980 with the 19th correction:

- (i) forbiddance of fabricating polythene items of 20 microns or underneath, nourishment wrappers (lunch sheets), any pack with tall thickness (basic need sacks) and nourishment holders, plates, mugs, spoons from extended Polystyrene (2034/33-35 and 38),
- (ii) disallowance of the burning of combustible and rejected things including plastic (2034/36), and
- (iii) forbidding the utilize of polythene items as enriching items (2034/37) (CEA, 2017).

Marine Contamination Avoidance Act No. 35 of 2008 is another national regulation to control, anticipate, and oversee contamination within the marine environment in Sri Lanka. Marine Environment Security Specialist (MEPA) is the pinnacle party set up by the government of Sri Lanka under the overact. MEPA is capable of finding arrangements and cures for overcoming pollution-related issues within the marine zones of Sri Lanka. With the development of maritime contamination by plastics, obtrusive species, oil spills, counterweight water, and oceanic activity within the coastal and

marine situations, MEPA has modernized the Arrangement Techniques and National Activity Arrange for marine security in Sri Lanka with the back of IUCN, to suit current situation amid Eminent 2017–January 2018. This Approach Methodologies and National Activity Arrange center on tending to the issue of plastic contamination in marine water in Sri Lanka as one of grave concern (IUCN, 2018). The capacity-building extension was fulfilled to oversee the marine flotsam and jetsam beneath four key exercises: instruction and mindfulness, investigate and logically think about, making offices, and arrangement definition (IUCN, 2018). Short-life plastic sacks are a genuine concern among all forms of plastics; in this way, diverse control and preventive measures (e.g., the disallowance of polythene bags utilization, applying charges, requirements, and charges) have been used by a few countries:

Switzerland, China, Italy, Rwanda, South Africa, Kenya, Congo, Hong Kong, Bangladesh, Mexico, a few states within the USA, a few states in India, Australia, Ireland, Denmark, South Korea, Romania, Japan, state of Sao Paolo in Brazil, and Unused Zealand, at a national level (European Commission, 2013). Usage of viable national-level activities by prioritizing site-specific administration needs is prescribed toward the plastic-free environment by the current ponder. Moreover, the approach on Amplified Maker Duty (EPR) (It would be ideal if you allude to the segment of “EPR towards maker responsibility” for more subtle elements) incorporates a conspire of plastic holder testimony in Asia, Europe, Australia, US, and Canada as a national-level plastic contamination control degree.

Eco-friendly concepts for controlling plastic contamination Reuse, Reuse, and Reduction (3Rs) of plastic

The 3Rs of plastic squanders are a major ecologically inviting concept toward plastic-free environments. Distinctive methodologies have been presented as adjusting with this 3Rs concept. Decreasing plastic and bundling fabric utilization is one of the key options beneath the EPR (If it's not too much trouble allude to the area of “EPR towards maker responsibility” for more points of interest). Activities of partners related to plastic generation and utilization can play a crucial part in decreasing and reusing plastics. These activities can be either personal or collective exercises toward lessening plastic amassing within the sea. Item producers and vendors are prescribed to take after a maintainable natural administration program with the generation and offering. Eco-labeled items permit shoppers to recognize naturally neighborly, non-polluting items for making economical choices amid the obtaining of things or merchandise. Over 25 programs are conducted beneath the Worldwide Eco-Labeling Organize (GEN) toward a plastic-free environment. Ten nations utilize 43 sorts of greener bundling names (GEN, 2019) meaning the exertion in diminishing plastic contamination at the national level. Too, Unused Zealand has granted eco-labels for plastic items having reusing potential. The naturally neighborly and pollution-free bundling materials and items can be maintained through green acquirement. Appropriately, a change of reusing capacity and least bundling is required on green obtainment. Biodegradable plastic bundling materials are moreover conceivable choices for chosen plastic items (Mudgal et al., 2012) to control plastic flotsam and jetsam collection.

On the other hand, positive motivating forces (monetary or physical) are valuable in advancing the collection and reusing prepare of plastics. If these activities are energized and encouraged at the national, territorial, and worldwide levels, it'll give more financial benefits to the society as an extra advantage, whereas anticipating the aggregation of plastics in marine and coastal ecosystems.

EPR towards a plastic-free environment

The EPR concept addresses the obligation towards a greener and cleaner environment indeed after the completion of the generation chain. The producers of plastic items and bundling things or fabric can be energized to gather bundling (e.g., nourishment and refreshment holders) and reuse plastic through subsidizing and operational exercises toward the EPR. As of now, created nations (Japan, Europe, and Canada) utilize EPR programs, whereas the creating countries still don't hone this approach on a huge scale. Be that as it may, this approach is one of the finest hones for minimizing the plastic aggregation rate within the environment. This paper suggests setting up a sound key component centering on the EPR concept, basically for creating nations at the national level. Obligations for collecting, reusing, reusing, and overseeing plastic flotsam and jetsam are ordinarily held by partner bunches such as makers, merchants, providers, and brand proprietors. EPR programs can center on private zones and open places such as markets, city squares, person-on-foot regions, metropolitan parks, and city squares, which involve higher aggregation of plastic flotsam and jetsam, counting bundling matter (British Columbia Recycling Control Alteration, 2011). Isolated litter canisters and recyclable plastic collecting centers must be set up in a maintainable way (toward EPR) to anticipate plastic waste disposal.

Collaborative approach for plastic-free zones: engagement with business companies

One of the foremost significant methodologies for controlling plastic contamination is the engagement with private companies and commerce affiliations related to plastic items and bundling things. As partner parties, these universally recognized companies and affiliations can play a crucial part in the administration of plastic litter by working with government agencies collaboratively. Within the USA, the American Chemistry Committee has conducted awareness programs on reuse and reusing plastic bottles. Plastic Europe is one such globally recognized affiliation, and they conduct an arrangement of programs (e.g., a campaign for “zero plastic in landfills” program on plastic pellet treatment at the generation line) centering on avoidance and administration of marine litter aggregation (European Commission, 2013). Since there's a need for more data, this consideration prescribes the foundation of capable Public-Private Associations (PPPs) with collective engagement between government organizations and private-sector for large-scale logical investigative ventures toward controlling plastic contamination and squandering administration at a national level.

Financial rebellious

Laws and expenses are sorts of disobedient apparatuses to avoid the utilization of plastic things and holders. Prohibiting and punishments are other choices for plastic contamination control, which acts as an enforceable relief degree. A few nations outlined approaches or enactments to boycott the utilization and purport of plastic things, counting packs, at the national level (if you don't mind allude to the area of "National level initiatives" for more points of interest). Disallowance of despicably disposing of and evacuation of plastic squanders is another procedure for anticipating the amassing of plastics. Most EPR ventures have as of now presented a punishment framework for makers for infringement of rules and controls related to squandered administration and dishonorable transfer. The client expense installment framework can be presented to oversee plastic squanders based on the concept of charging/fining for expending plastic things. The presentation of the auxiliary advertisement for reused materials is another elective to diminish the plastic level within the environment. Plastic makers must reuse plastic items and bundling things (EPR) (UNEP, 2018). As a result, they can monetarily contribute to attainable things, investigate, and improve to distinguish inventive choices as auxiliary materials. Maintainable Materials Administration (SMS) is another activity for contamination control toward a cleaner environment (UNEP, 2018). Japan is one of the nations taking after the SMS utilizing the legitimate system since 1997.

Awareness and capacity-building campaigns

Changing states of mind toward the preservation and economical administration of the environment is one of the powerful devices in upgrading the quality of marine and coastal biological systems. Progressing the open mindfulness on litter era, expulsion, and impacts on marine and coastal environment is such kind of procedure for making unused demeanors among nearby communities. Blue Hail is a worldwide program conducted in Europe to diminish marine and coastal flotsam and jetsam amassing (Blue Hail, 2019). Concurring with the rules of this program, encouraging the isolation of recyclable plastic matter and situating the transfer containers and holders are obligatory activities. Data related to this issue (e.g., impacts from the aggregation of marine flotsam and jetsam, marine flotsam and jetsam amassing sources, diverse approaches on relieving over-burden of plastic flotsam and jetsam, and the role of a neighborhood community toward this issue) can be publicized through social media, nearby media, conveying printed materials, and showing in open ranges. Shoreline cleaning and squander expulsion campaigns are also conducted with the interest of partners as a step of mindfulness and capacity building of the nearby community on this rising issue. In any case, the victory and adequacy of this kind of cleaning and flotsam and jetsam evacuation programs depend on the inclusion of the neighborhood community. As a cellar for a long-standing time, this paper prescribes joining natural instruction into the syllabus of schools and making all conceivable endeavors to adjust the attitude and states of mind of children on securing the environment, beginning from the nursery and/or primary school arrange, because the essential level of children is the foremost viable organize to form changes within the thoughts and traits toward preservation of the environment.

Conclusion

Plastic pollution causes different ecological impacts at the person, gathering, and biological system levels. Since the measure of micro plastics is comparable to the nourishment particles that are expended by most marine and coastal life forms in lower trophic levels, these micro-contaminants are profoundly vulnerable to amassing in such biota through ingestion with destructive impacts. Micro plastic would also concentrate on people and other living beings speaking to higher trophic levels through nourishment chains and networks. Plastic poisons are associated with other harmful chemical compounds such as POPs, anti-microbial, and overwhelming metal particles, and steadily deliver eco-toxicological impacts. The collection of plastic flotsam and jetsam causes not as it were negative environmental results to the environment but too debilitating to the socio-economic viewpoints of human life in different ways. Be that as it may, the environmental and socio-economic impacts of plastic contamination are interconnected.

Pollution in marine and coastal settings requires moderation and administration at worldwide, territorial, and national levels. As of late, multinational organizations and non-profit social bunches have collaborated to spare the sea from plastic contamination in numerous places.

A few nations, counting South America, have already exhorted examining estuarine defilement, with a center on plastic contamination in brackish water territories. At the national level, a few governments have pronounced legislation to control the plastic contamination issue by forbidding the utilization of plastic items and upgrading reuse and reusing of plastics with novel advances at territorial and national levels. Usage of natural administration with contamination control prescribed altogether considering organic and biological settings of individual biological systems in nations like South America. In any case, activities on plastic contamination controlling and avoidance ought to be advanced strides at the previously mentioned levels. Hence, the current thinking about prescribing chosen profitable approaches to address this issue with sound consideration from diverse partners. Reuse, Reuse, and Decrease (3Rs) of plastic poisons, empowering the collection of re-usable plastic flotsam and jetsam, EPR towards producer responsibility, eco-friendly programs through Open Private Organizations, mindfulness, and capacity-building campaigns centering on a cleaner environment logically thinks about nature and the seriousness of this rising natural issue and advancements are proposed as extreme, successful arrangements for decreasing and controlling the plastic contamination in these profitable sea-going biological systems At long last, this survey paper uncovers the general situation of worldwide marine and coastal plastic contamination beneath diverse perspectives. This auxiliary the information would be valuable as standard data for the site-specific plastic contamination control and administration programs. Human acts are one component of the biosphere; in this way, our obligation is to supply the most extreme commitment to zero plastic, cleaner, and greener environment as an eco-friendly living being.

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