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Environmental impacts of plastic pollution: A sociological study (special reference to Bangalore city)

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Abstract

Sociological perspective plastic is a social issues in word. Plastics are a wide range of synthetic or semi-synthetic product that use polymers as a main element. Their plasticity makes it possible for plastics to be moulded, extruded into solid objects of several shapes. Plastics typically are made through manufacturing systems. Plastic materials are available everywhere in the world. Because of its use huge people. We use plastic materials not only in our house, offices and industry. They are also used in markets, educational institutions, industries, medical stores, research laboratories, hospitals, hotels, etc. The uses of plastic are so common that it's almost incredible to imagine a place without plastics products. Normally projected 8.5 billion more than tons of plastic has been produced worldwide since early 1950s. In India 34 lakhs tonnes generated in 2019-20. Some major research studies have also estimated that if the present situation of usage the plastic products continues, then the plastic industry could account for almost 20% of the world's oil consumption by the year 2050. The use of plastic has become a serious problems in the word. Because of the natural disintegration of plastics is nearly impossible due to its durable nature and non-degradation characteristics. As a result of which it never totally disappears and its particulates remain in the environment resulting pollution. The more threatening aspect is that only 9% of all the plastic waste ever produced has been recycled. The remaining 81% plastic has both been dumped in landslide and waste management factory, incinerated or burnt resulting into release of numerous toxic gases in the atmosphere and pollution of ground water and air.

In Bengaluru, plastic is estimated to occupy 20% of the 4000 tonnes of municipal solid waste generated. According to Sodhi. The recycled plastic will be used to manufacture fabrics, chairs, backpacks and pillows. Low-end plastic waste, less than 50 microns, will be used in road – making, construction and cement plants. This research paper based on primary and secondary data.

Keywords: Environment, management, educational Institutions, industries, pollution

Introduction

Plastic products have been used in all spheres of our every time. There are multitudinous adulterants that spoil our terrain, plastic is maybe the maturity dangerous of waste accoutrements ditched by us due to its non-biodegradable nature. In fact, the plastic wastes that go into the marine terrain moment may still be around for thousands of times to foul up our terrain for unborn generations. A veritably casual station and neglectfulness while jilting plastic wastes can have serious consequences for our natural terrain and living organisms. A various plastic bag looks veritably seductive food like a small submarine beast similar as a doormat, to a magpie confluent like the ocean turtle or other creatures, but its inedible. It can choke and block the neck, bowel, or beget infection in those creatures that consume it. The plastic items like a lost or thrown out monofilament fly-fishing net can choke machine propellers, destroy canvas seals and lesser units of machines, clog an outboard machine engine's cooling system or it can come an entangling web for fishes, seabirds, and marine mammals.

According to the CMC, over pieces of fishing line were collected from U.S. strands for the duration of the 1996 Annual sand clean-up crusade and at least 40 of all beast snares reported for the period of clean-ups involved fishing line. Due to the adding disposal of plastic waste, more and more plastic material is being accumulated in our drainage system, ponds, swash, ocean and abysses. Excursionists, beachgoers and recreational boaters veritably frequently dispose-off plastic garbage at the strands inaptly.

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Plastic waste also enters the marine terrain from marketable fishing operations, trafficker shipping, sewage outfalls, and other marketable conditioning. Some of the substances that are used in the medication of plastics accoutrements include urea, formaldehyde, polyethylene, polystyrene, polymethyl chloride, phenolic composites and polyvinyl chloride. When any food material or blood is stored in similar plastic holders also gradationally the answerable poisonous chemical gets dissolved in them leading to numerous conditions including death due to cancer.

Polyvinyl chloride has also been plant to affect the respiratory systems and fertility of creatures. When mixed with water, it can beget palsy, damages bones and skin vexation. As chemicals from plastic get dissolved in the food particulars, the use of P.V.C. plastic in space outfit and in food holders has been banned by the USA. In view of the serious health impacts due to plastic holders, the Indian govt. should also take similar enterprise to ban the use of P.V.C. in water pipes, food and drug holders to save the lives of millions.



Fig 1: Plastic produced in Bangalore city

Research Method

Environmental impacts of plastic pollution paper purely based on secondary data. 2016 march Karnataka government had issued a notification which almost all plastic products completely banned. With certain exceptions. This notification purely based on section 5 of the Environmental Protection Act 1986. But government of Karnataka that time take some actions. 2016 to 2018 between year some plastic items reduced in Karnataka. But now same as it is using plastic products. Plastic products impacts on environment. So I am preparing this article based on secondary data.

Consequences of plastic pollution

Sources of plastic pollution

Single- use plastic Single- use plastic objects are a matter of great concern. Since, plastic accoutrements are veritably cheap and fluently available, it gets discarded constantly and thus, its continuity in the terrain is a great trouble to terrain. Adding urbanization has further added to the problem of plastic pollution in metropolises. Of all the plastic we use, nearly 40 is used just formerly (single- use). Every time we use several billion plastic particulars similar as milk or water bottles, carry bags, toys, servers, and food packaging. Supermarkets and indeed original requests in numerous civic points and metros metropolises are full of it. Some people are extremely careless with packaging and leave it behind as waste, causing a great trouble to the environmental conditions. Also there are places where people can dispose it duly due to lack of waste collection system. Indeed if, people do their stylish to minimize single-

use plastics, much of that enters the terrain had come one of the biggest causes of plastic pollution.

Frequently people don't realize and understand how regularly they're contaminating the terrain with plastic accoutrements. For illustration, vehicle tires are made up of rubber and plastic, which wears out while driving due to disunion. Due to this disunion, thousands of micro-plastics get released on the road and in the atmosphere, hence contaminating the atmosphere and affecting its conditions. Our cosmetics, particular care products and maquillages also contain micro-plastics that go into drainage system along with the wastewater. Due to washing and drying of synthetic clothes in the washing machine millions of microfibers also enters into the drainage system affecting the natural foliage and atmosphere. Some kinds of plastic are also contained into cigarette pollutants and indeed into biting epoxies, which are discarded as waste. Rivers, for illustration, transport a lot of plastic to the ocean. But not the only way plastic moves around; it can also be transported by the wind. Indeed in gentle winds, plastic filaments, which is has a veritably light weight, blows down especially from tip or waste jilting spots where it's ditched.

The plastic lists from balloons are frequently plant on strands washed up, after landing in the water nearly at ocean. It has been observed that further than 90 of the papers plant on the ocean strands contained plastic. Excursionists frequently dispose of plastic wastes at sightseer places, mountains, ocean strands, roads and streets.

Concerns of Plastic Pollution

Since the development of plastic before in the middle of the last century, due to its stinginess and continuity, it has come veritably popular and is used in a wide variety of ways. The stinginess means plastic gets discarded fluently and its continuity makes it survive in the terrain for an extremely long ages where it can do great detriment. Because plastic doesn't putrefy fluently, and requires high energy ultraviolet light to break down, the quantum of plastic waste in our terrain is steadily adding leading to environmental problems. The plastic waste plant on strands near civic areas tends to appear from fishing, shipping, packaging accoutrements used to wrap around other goods and other conditioning in the near areas. On the remote pastoral strands the plastic rubbish tends to have come from vessels, similar as fishing outfit used in the fishing assiduity. This plastic can affect marine wildlife in two most important ways by entangling marine brutes or being eaten by them. It has been reported that near about one lakh creatures similar as tykes, cows and other mammals die every time by eating plastic wastes. Throughout the world, about 75 marine raspberry species are known to eat plastic papers. Some of the consequences and goods of plastic pollution on our terrain have been bandied below.



Impacts of Plastic Pollution

Petroleum is considered as a vital resource for our ultramodern way of life, to meet our energy conditions for lighting, heating, diligence, manufactories, transportation and so on. Numerous studies have concluded that natural energy coffers similar as coal and petroleum are going to be exhausted veritably soon in the near future because of their extreme operation. Natural sources of petroleum products are dwindling and getting more precious day by day, since we've been using these non-renewable coffers at large. This precious resource should not be wasted on producing plastic products, since it's also used in producing plastic.

The ruinous effect of plastic on marine mammals was first observed in the late 1970s, by the scientists from the National Marine Mammal Laboratory. They plant that plastic trap was killing up to seals per time. Annually, this amounted to a 4 to 6 percent drop in seal population beginning in 1976. In 30 times, a 50 decline in the population of Northern Fur Seals has been reported extensively. These seals would frequently get trapped in fractions of plastic network or quilting strips, catching their necks in the netting. The plastic harness can constrict the seal's movements, killing the seal through starvation, prostration, or infection from deep injuries. While diving for food, both seals and jumbos can get caught in plastic nets and drown. In the fall of 1982, a humpback Goliath tangled in 50 to 100 bases of net washed up on a Cape Cod sand. It was starving and its caricatures were exposed as a result it failed within a couple of hours.

On plages seabirds have been seen to pick up plastic particulars the same way they pick up their food like fishes. It has been plant that in the North Sea, nearly all the Northern Fulmars (Fulmar's glacial is) contain some plastic. Seabirds similar as Laysan Albatross sprats are frequently inaptly fed plastics by their parents. When these sprats are unfit to eject the plastic, it causes death of sprats due to starvation, dehumidification or choking. Plastic bottle caps, plastic tubes and other objects were reported inside the perished cadavers of some Laysan Albatross on Sand Island, Midway Atoll, North Pacific Ocean. The catcalls presumably mistook the plastics for food and ingested them while foraging. A exploration study of blue petrel sprats at Marion Island, South Africa showed that about 90 of sprats examined had plastic in their tummies. Plastics may remain in the neck or tummies, affect digestion and conceivably beget starvation. South African seabirds are amongst the worst affected in the world due to plastic pollution. The plastic accoutrements can affect marine wildlife either by entangling them or when it's eaten. It has been reported that the bodies of nearly all marine species, ranging from plankton to large marine mammals similar as dolphins and jumbos, including some of the wildest and utmost vulnerable species who spend nearly their entire life far from mortal beings, now contain lots of plastic.

According to an analysis of 22 times (from 1986 to 2008) of boat-check data collected in the Western North Atlantic Ocean and Caribbean Sea reveals that further than Sixty percent of face plankton net tows contained sensible quantum of plastic pieces. Microscopic fractions, in some locales overbalancing face zooplankton, revealed a significant increase in cornucopia when samples from the 1960s and 1970s were compared with those of 1980s and 1990s. When ingested, similar small patches can also be carried from the gut into other body tissues.

Sea turtles indiscriminately feed on pelagic material, large circumstance of plastic is common in the digestive tract of these small ocean turtles, frequently performing their mortality. There's great concern about the effect of plastic rubbish on marine mammals ocean turtles and fish in particular, because numerous of these brutes are formerly under the trouble of extermination for a variety of other reasons. Over 260 species, including pets, turtles, fish, seabirds and mammals, have been reported to consume or come entangled in plastic debris, performing in disabled movement and feeding, reduced reproductive affair, incisions, ulcers, and eventually death. Mollusks and crustaceans appear particularly to be sensitive to these composites. Being an important food item for numerous species, plastics ingested by lower creatures also have the eventuality to transfer poisonous substances further in the food chain.

The presence of plastic at shallow and lesser depths may harm deposition wildlife similar as worms, sessile sludge affluents, deposit affluents and detritivores, all known to accidentally ingest plastics. The hard face of pelagic plastics also provides an seductive and alternate substrate to natural floating debris (e.g., seeds, pumice, and wood) for a number of opportunistic pioneers. Plasticizers and organic pollutants generally absorb and concentrate on plastics, have been shown to affect both in the development and reduplication of the marine organisms. The adding vacuity of these synthetic and non-biodegradable accoutrements in marine debris may increase the disbandment and prospects for irruption bynon-indigenousspecies. Turtles get entangled in discarded fishing gear, fishing nets, and numerous of them have been plant dead with plastic bags in their tummies. Turtles are poorly affected by plastic pollution, and all seven of the world's turtle species are formerly either risked or hovered for a number of reasons. All ocean turtle species are generally prone, and may be seriously harmed by 'feeding on' anthropogenic marine debris, particularly plastics. It's believed that plastic accoutrements might have been inaptly taken for doormat and eaten by turtles. Plastic ingestion by ocean turtles is fairly a wide circumstance. Still, indeed in small amounts, plastics can kill ocean turtles due to inhibition of the esophagus, choking or from being unfit to eat. One dead turtle plant off Hawaii in the Pacific was plant to have further than 100 pieces of plastic in its stomach including part of a comb, a toy truck wheel and indeed a nylon rope.

Fishing line can be particularly dangerous, when, during normal intestinal function, different corridor of the digestive tract pull at different ends of the line. This can affect in the gut gathering along the length of the line precluding the condensation from passing through the digestive tract. A recent US report concluded that marine mammals die every time in the world's abysses by eating or getting entangled in plastic rubbish, and the position is worsening. A large number of marine brutes gets trapped and killed in pieces of gill nets which have been lost by fumbling vessels. Other pieces of fishing outfit similar as lobster pots may also continue in enmeshing similar kind of creatures. Once used, utmost plastic bags go into tip, or rubbish tips. Each time more and more plastic bags are ending up littering the terrain. Once they come waste, plastic bags find their way into our thoroughfares, premises, strands and water ways. However, they contaminate the air with poisonous smothers causing pollution therefore leading to health hazards, If

burnt. About creatures similar as cows, tykes and penguins are killed every time due to plastic bags. Numerous creatures ingest plastic bags, mistaking them for food, and thus die. And worse, the ingested plastic bag remains complete indeed after the death and corruption of the beast. Therefore, it lies around in the geography where another victim may ingest it.

There's a direct relationship between mortal health and the quality of the air we breathe, the water we drink or bathe, and the earth in which we grow our food. In a recent study US Centre for Disease Control and Prevention, plant that a near about 93 percent of the US population has biphenyl, a chemical that can be plant in canned goods and in rigid, clear plastic specifics in their body. Biphenyl A (an endocrine disruptor) is a crucial monomer in product of polycarbonate plastic and library paste resins. Polycarbonate plastic, which is clear and nearly shatter- evidence, is used to make a variety of common products including baby milk and water bottles, sports outfit, medical and dental bias, dental compound (white) paddings, sealants and lenses. Endocrine disruptors are ubiquitous in our terrain and have deep impact on our health.

These EDCs are common in our terrain and, when absorbed by mortal beings and wildlife, mimic the action of hormones and have been linked to reproductive problems in creatures and mortal beings are known to affect fat cells. As the plastic moves up in food chain, its attention increases and when these fishes with huge quantum of plastic are eaten by mortal, it causes conditions like cancer. The major chemicals that go into the timber of plastic are largely poisonous and pose serious trouble to living beings of all species on earth. Some of the ingredients of plastic similar as benzene are known to beget cancer.

Plastics products thrown anywhere as garbage are causing many issues. Some of the problems are

1. The plastic issues is becoming perennial as plastic is Non-biodegradable.
2. People using platstica overused.
3. Plastic discarded on the soil affects the soil construction and prevents restore of ground water table.
4. Burning of plastics results in release of toxic gases in the atmosphere which, in turn, reasons living problems and even brain Tumor.
5. These plastic products masses the open sewage organization and results in immobility of sewage water, grounds for mosquitoes breeding, causing spread of several diseases.

Control of plastic pollution or awareness

One of the worst environmental impacts of plastic accoutrements is that they're non-biodegradable; corruption of plastic bags takes about 1000 times. As we're apprehensive, discarded plastic accoutrements similar as plastic net, bags, bottles or any other product, produce serious environmental problems and profitable burden. In addition to using up reactionary energies and other coffers, plastic products produce non-biodegradable scrap and waste, seriously affect life of beast, catcalls, marine life and hang the base of life on earth. Some way that could be taken to control plastic pollution and rear effect of poisonous, non-biodegradable plastic pollution are suggested below. Tourists and beachgoers should dispose off plastics and other waste in the dustbins. However, communicate the

original authority responsible for it and lodge a complaint, if these installations are shy. Take your waste back home with you if there are no waste disposal installations on the beach. We can pick up any plastic waste we see on the sand or in gemstone pools in the vicinity while sitting or walking. Encourage youthful children to do likewise. Fishermen should dispose of plastic nets for reclaim and don't throw down as waste.



Fig 2: Plastic related public awareness

To minimize use of plastic products, insulate scrap and wastes generated into dry and wet order and keep in separate holders and dispose-off wastes in an eco-friendly manner. In the road noway throw plastic or other waste out of your auto and don't drop it on the pavement or in the gutter. We should noway dispose-off plastics accoutrements in the sewage system or drain. We need to exercise and promote proper disposal of plastics accoutrements in public places (e.g., office, premises, sand, etc.) and our home. Always remember that waste generates litter. We can prefer to use pristine sword food holders like Tiffin's to store food, it has longer life than Tupper Ware and are more hygienic. When we go to the requests, we should carry our own bags made up of cloth, paper, oil or biodegradable- fiber bags to avoid plastic bags. Whenever the shopkeeper or seller gives particulars or goods into a plastic bag, ask him or her to replace it in one of your own cloth bags. You can also reaction "Why I Don't Use Plastic Bags", they would appreciate itall. Give preference to use of cloth towels, wax paper bags, orre-useable sword boxes. Packaged plastic bottled water could be defiled with micro-plastics and also costs over 1000 times further per liter than water from our valve. So, we should carry our own water in glass bottles orcans.



Fig 3: Environmental awareness

Pre-bagged yield not only uses extravagant packaging, but also tends to come from further down, consuming further of our abating canvas inventories in transport. Prefer to buy greeting cards in paper boxes rather of plastic cover and look foreco-friendly packaging choices. Also we can ask florist for flowers wrapped in paper, not plastic film. Use pens that can bere-filled rather of onetime plastic pens. Support and promote exercise and recovering schemes in your original area.

Conclusion

Plastics products accoutrements are confidently available, more careful, durable and easy to make. It's used to make, pack or wrap around, numerous of the particulars we buy or use in our diurnal life. They're useful and popular accoutrements which can be produced with fairly little cost. Plastics products aren't themselves a problem. Still, the problem is the inordinate use of plastics accoutrements and its careless disposal in the terrain. Despite its utility, unfortunately plastic is creating a huge environmental problem due to its non-biodegradable nature. It takes hundreds of times to get perished in the terrain. Plastic wastes besides affecting drainage system, contaminating our natural terrain are also posing pitfalls to creatures, catcalls and marine life. Several studies have plant that plastics are affecting several species of creatures, catcalls and marine creatures. Plastic ingestion may also laterally lead to death of an beast. Thus, several way and remedial measures needs to be taken to minimize the use of plastic products and minimize the environmental impacts of plastic pollution.

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