



ENVIRONMENTAL IMPACTS ON PLASTIC BAGS AN OVERVIEW

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ABSTRACT In recent years worldwide the people use plastic bags frequently in their day to day life. The plastic bags are produced with the help of synthetic and semi synthetic materials. It is cheaper to manufacture than the other materials, so the production cost is very low and the selling cost also very cheap. Plastic bags are a type of containers made of thin and flexible plastic. The plastic bags are used to carry goods like foods, grocery things, stationaries etc. But in nature the plastic bags are non-biodegradable and it creates a harmful effect to the environment, human health and animal's life. In this paper discussion goes with the impact of plastic bags in the environment and drafts the useful suggestion to reduce the usage of plastic bags and alternative for plastic bags.

KEYWORDS :**INTRODUCTION**

Polythene bags are normally called as plastic bags. plastic is derived from a Greek word "plastikos" it means capable of being shaped or molded. The modern light weight shopping bags are introduced by the Swedish engineer Sten Gustaf Thulin in 1970s. From the mid period of 1980s onwards, the plastic bags become very popular to carry goods in day to day life, and they are available in huge numbers and varieties all over the world. In 2007 to 2012 the world wide population grew roughly 7% but the plastic market increased 165% during the same period.

The plastic bags are most successful consumer products in worldwide. Because it is cheap to manufacture, light weight, convenient, relatively strong, and easy to carry goods. In worldwide 100 billion to 1 trillion plastic bags are produced per year and 400 plastic bags are used by an average family for a year. Each and every minute 1 million plastic bags are used globally. The plastic bags are non-biodegradable in nature. The disintegration of plastic bags is taken about 10-1000 of years, so the plastic bags creates littering in the landscape it will affect the environment, human health and animal's life.

TYPES OF PLASTIC BAGS

There are different types of plastic bags are available in markets, because they are made from different materials and these materials offers users with specific characteristics. They also come in various colors and shapes.

HIGH DENSITY POLYETHYLENE (HDPE)

This type of plastic bag is commonly used around the world because it has many variety of qualities and it is light weighted, waterproofed and temperature resistant and relatively transparent. HDPE plastic bags are mostly used in restaurant, convenience stores, grocery shops and also used for garbage bags, utility bags T-shirt bags and laundry bags among others. This bags are approved by USDA and FDA.

LOW DENSITY POLYETHYLENE (LDPE)

LDPE bags are normally used for utility bags, bread bags as well as bags with moderate strength and stretch properties. But the LDPE bags are not strong when compared to HDPE bags. They are specially used for food and meat products. The LDPE plastic bags are highly versatile so this are popular for use with heat sealing due to their low point of melting. Thus, this bags are approved by USDA and FDA.

LINEAR LOW DENSITY POLYETHYLENE (LLDPE)

The difference between LDPE and LLDPE plastic bags is that the latter a slightly thinner. There is no different between strength, it allows user to save money without compromise on quality. LLDPE bags are high degree of clarity to show the packed food so it's used for manufacturing of food bags, newspaper bags, shopping bags, garbage bags. It also used to store cooked food items in freezers and refrigerator. In commercial kitchen the LLDPE plastic bags are used to store bulk food items.

MEDIUM DENSITY POLYTHENE (MDPE)

Comparing to HDPE, MDPE is more clear but it's not clear than LDPE. This medium Density bags are not in high degree of strength, and this MDPE bags are not preferred for carrying or storing of bulk products. These bags are used commonly in garbage bags and generally used in consumer packaging for paper products such as toiles paper or paper towels.

POLYPROPYLENE (PP)

PP bags are characterized by their remarkable chemical strength and resistance. Unlike other bags, polypropylene bags are not breathable and are ideal for retail situation due to their longer shelf life. PP is also used for food packaging, where items like candies nuts herbs and other confectionaries can be easily stored in bags made out of it. The bag is more clear when compared to others and it allowing to users enhanced visibility. it's are also great for heat sealing due to their high melting point this bags are approved by USDA and FDA.

ADVANTAGES OF PLASTIC BAGS

- It is durable, water resistant, low cost, light weight.
- It has less energy to produce, transport and recycling when compared to other alternatives.
- Recycling rates are lower than for paper bags.
- It reused as trash bags or bin bags.
- Good isolating properties for both cold and warm.
- Saves forest because trees, plant are not being cut down to make an alternative bag.

DISADVANTAGES OF PLASTIC BAGS

- Polyethylene bags are non-biodegradable in nature.
- Polyethylene bags are end with nature it will take long time to degrade and also it spoils the soil.
- In nature polythene bags are block the birds and animals stomach it will die slowly and painfully.
- Polymer bags floats on water because the density is lower than water, and some polymers are heavier than the water it will sine to the bottom it hurt ocean life.
- Once plastic bags are burned they release toxic chemicals that mixed with the air and it creates air pollution.

ENVIRONMENTAL IMPACTS ON PLASTIC BAGS

The plastic bags affect the environment directly and indirectly. Direct impact occurs to affect a marine life. Indirect such as the cleaning of marine debris comes to ecological changes.

PLASTIC BAGS AND LAND

Every year we consuming 500 billion to 1 trillion plastic bags in worldwide, but only 1% of plastic bags are to recycle remaining 99 % of the bags are discarded with the land fields .The plastic bags are creating a negative impact of a global agricultural land .People not having a knowledge about plastic recycling .So they disposing the plastic bags in the agriculture land ,and the plastic bags are getting mixed with the soil but it not decomposed so it permanently fixed with

the soil and it blocks the progress of growth of the agriculture plant. Plastic bags are very thin, so that the plant roots are fail to move around the soil and then the trees and plants do not find the natural nutrients inside the soil. Thus the plastic bags are the non- biodegradable bags dumped in to the land field, so it decomposes slowly and they are light weight, easily blown away by air and fixed that trees and plant branches and it makes the environment looks ugly and also it fills sewage and road side, water ways rivers and oceans. The common and most important place of resting plastic bags is in land fields, because it affects the soil fertility, decrease in nitrogen fixation, huge loss of nutrients in the soil and decrease the crop harvest by that it also reduces the agricultural production.



PLASTIC BAGS AND WATER

In recent years, plastic bags are one of the most important problem to the world. Marine life is also affected every year; 300 million plastic bags are end up with the ocean, it's very dangerous for the sea life, countless marine animals and birds are mistakenly takes the consumption of plastics for their food it causes the marine debris. This can cause a serious and harmful result in their death. The plastic pollution also effecting the ocean eco system. The plastic bags effects at least 267 spices worldwide including 86% of sea turtle's 44% of sea birds and 43% all marine mammals. Since the use of plastic bags continues to increases the amount of plastic polluting the marine environment.



PLASTIC BAGS AND AIR

The plastic bags are used everywhere in the world. We purchase use and throws, plastic bags, straws, and bottles. Yet it remains forever as toxic till the end. The plastic bags are made from toxic materials it causes cancer for human beings. "Phthalates" another toxic chemical used to make plastics then it softer and pliable. It effects our fertility, distributes the endocrine glands and other health problems also, easily evaporate into air and it causes air pollution another types of air pollution. While we burning the used plastic materials, it releases the toxic air, it also mixed with air, that poisonous air causes serious effects such, air pollution, acid rain and end up health of birds, animals and human beings.



PLASTIC WASTE MANAGEMENT RULES,2011

These rules were formulated by ministry of environment and forest⁹, it particularly stated that it is issued in the existence of the powers conferred by section 3,6 and 25 of Environment protection act, 1986. It is also stated in the notification that here after these rules will be called as Plastic waste (handling and management) rules,2011. Some salient features of these rules are as follows:

- a) Definitions of different words and things like carry bags, plastic etc. so that legally also every important thing which is required to dispose of plastic waste keeping in mind the need of environment
- b) The prescribed authority, its scope and jurisdiction all the three things are defined properly in this notification so that the concerned authority can take all important steps to dispose of the waste properly and in a green manner without creating pollution.
- c) The conditions which are required to satisfy during manufacturing of a plastic bags so that the required quality of plastic bag can be attained.
- d) It also includes every important factor which is required while management of plastic waste and its disposal.
- e) The policy related to marketing and labeling of plastic bags
- f) Registration of manufactures and recyclers.
- g) The explicit pricing policy of carry bags.
- h) State level advisory body for the practical implementation of plastic bag policy.
- i) Lastly, in this notification the policy of annual report was also mentioned which basically states that the state as well as the central pollution board will submit a report about the implementation of these rules

PLASTIC WASTE MANAGEMENT RULES,2015

These rules are not yet implemented but in the present year that is 2015 they are being drafted and soon are going to be implemented. Salient features of these rules are as follows:

- a) New terms like EPR i.e., Extended producer's responsibility, institutional generator, facility, multilayered packing, urban body, virgin plastic, waste pickers etc.
- b) In these rules, the judiciary have also tried to ascertain the responsibilities of different control boards and different parts of the executive department.
- c) Specifically, judiciary has ascertained the responsibilities of Gram panchayat, urban local body, Waste generator, Producers, retailers and street vendors.

ALTERNATIVE TO PLASTIC BAGS

The environmental friendly alternates the plastic bags with jute bags, paper bags, bio degradable plastic bags, reusable bags. The best alternative of plastic shopping bags, fully biodegradable bags which are non-toxic for soil and we need to use alternative of plastic bags.

JUTE BAGS

It manufactures from jute yarn and are used for packing a wide range of industrial and agri goods, such as grains oil seeds, salt, sugar and other commodities of suitable Configuration. Jute bags are also suitable for multi-purpose.

PAPER BAGS

Paper bags have traditionally been presented as the environmental friendly option when compared to plastic bags. Prior to introduction of jute bags paper bags were the most commonly used for shopping purpose. Scottish research has demonstrated that a levy on plastic bags can result in an increases of paper bag consumption. Imposing a levy on plastic shopping bag is a policy of choice environmental improvement.

COTTON BAGS

Cotton bags typically made in China have a greater environmental impact because of the water and fertilizer required for their production, as well as their transportation and greater weight. Plastic bags have also come under fire for using up oil and for trashing the countryside and fouling the marine environment for wildlife. Cotton bags has to be used 131 times before it has the same environmental affect like its plastic counterpart.

BIO-DEGRADABLE PLASTIC BAGS

Bio- degradable plastic bags are being manufactured in plastic industries which are less harmful to the soil and environment. Plastic bags produce which are non-biodegradable or bio-degradable both are made for toxic ingredients and harmful to the environment.

REUSEABLE BAGS

There are many different types of reusable alternatives of plastic bags such as rigid plastic boxes and baskets and thick plastic bags, woven plastic bags, cloth bags and oldest market containers. The best idea is still to use bio degradable shopping bags and best shopping bags can be made of jute.

SUGGESTIONS

- Some other suggestions to reduce the usage of plastic bags
- Avoid buying items packaged in plastic
- Use cloth, jute shopping bags
- Skip bottled water, carry a reusable can.
- Avoid disposable tableware, or use the compostable kind
- Bring your own containers and reusable bags for takeout and left over
- Demand the government to take action about plastic bags
- Avoid snacks /food with excess packaging

CONCLUSION

By the research as we have done in this specific topic it is clear that plastic bags have some advantages but with more disadvantages. It creates a serious problem to the environment pollution. We know the main problem is plastic litters, the private and local government policies that arises the awareness about litter. Government officials could also ensure the government enterprises such as government trash collection are conducted in a way that limits litter, and the government patrol owned and managed properties specifically in highways to penalize the individual and business such as litter haulers for trashing of highways. Stopping the plastic bag production is only a way to reduce the usage of plastic bags and the public also having a responsibility to protect the environment we have many alternatives of plastic bags so we use alternatives and ensuring to given a plastic free earth to their future generation. So we stop using the plastics bags and product the environment.

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