International Journal of Humanities & Social Science Studies (IJHSSS)
A Peer-Reviewed Bi-monthly Bi-lingual Research Journal
ISSN: 2349-6959 (Online), ISSN: 2349-6711 (Print)
Volume-II, Issue-VI, May 2016, Page No. 273-282
Published by Scholar Publications, Karimganj, Assam, India, 788711
Website: http://www.ijhsss.com

Plastic Detrimental To Environment: A Legal Study

Madhumita Acharjee
Ph. D Scholar, Department of Law, Assam University, Silchar, Assam, India

Abstract

With the advancement in science and technology man had to indulge in various practices. In carrying out the day to day activities man involves in some dreadful ones too which has brought serious impact to the entire globe. Environment is not an exception to this. Among the few modern day enemies of the environment, plastic is one of the prominent source of environmental pollution. The general understanding of plastic is that it is a material but the dictionary meaning to be more specific explains plastic as plastic is a material which is produced from oil by a chemical process and which is used to make many objects. It is light in weight and does not break easily. Plastic which is found in numerous forms and which is made of of heterochain polymers. These compounds contain atoms such as oxygen, nitrogen or sulphur in their backbone chains, in addition to carbon. Plastic is regarded to be a biological hazard since it is almost non-degradable. Tonnes of plastic waste are dumped everyday into the earth all over the world. Some of the common impact of plastic includes environmental damage, threat to marine and animal life, lethal effect on health and serious cause of pollution. Many international and national legislative steps have been taken to check this menance . This article deals with a detailed analysis of plastic its composition, its source, and how it is detrimental to the environment. This article also aims at finding some solution to the increasing rate of pollution caused by use of plastic.

Introduction: 'Globalization' has become a term often used to characterize the spirit of our times. No doubt there are good reasons. The globe seems to be shrinking. It is difficult not to be constantly and painfully aware that our action now can have a great impact on our future generation. Environment degradation[1] has been one of the main issues destined to become a critical concern of the twenty first century. Environmental pollution is any discharge of material or energy into water, land, or air that causes or may cause acute (short term) or chronic (long term) detriment to the Earth's ecological balance or that lowers the quality of life. There are different kinds of pollution which have by now become familiar with both plant and animal ecosystem. The list includes may in number namely Water Pollution, Air Pollution, Soil Pollution, Thermal Pollution, Land Pollution, Pesticide Pollution, Radiation Pollution, Noise Pollution. They can also be divided into conventional and non-conventional pollutants. Conventional or classical pollutants are generally associated with the direct input of (mainly human) waste products. The non-conventional pollutants include dissolved and particulate forms of metals, both toxic and non-toxic and degradable and persistent organic carbon compounds discharged into water as a by-product of industry or as an integral part of

[1]That, Oxford dictionary of law defines environment degradation as a depletion of earth's resources through pollution that transcends territorial boundaries.

marketable products. A very common and dreadful conventional pollutant that we use in our day to day life in a regular manner is the use of plastic.

The Composition, Structure of Plastics: Plastics, polymeric materials that has the capability of being moulded or shaped, usually by the application of heat and pressure. This property of plasticity often found in combination with other special properties such as low density, low electrical conductivity, transparency and toughness, allows plastics to be made into a great variety of products. These include tough and light weight beverage bottles made of polyethylene terephthalate (PET), flexible garden hoses made of polyvinyl chloride (PVC), insulating food containers made of foamed polystyrene and shatterproof windows made of polymethyl methacrylate.

Many of the chemical names of the polymers employed as plastics have become familiar to consumers, although some are better known by their abbreviations or trade names. Thus, polyethylene, terephthalate and polyvinyl chloride are commonly referred to as PET and PVC, whole foamed polystyrene and polymethyl methacrylate are known by their trademarked names, styrofoam and plexiglas (or perspex).

Industrial fabricators of plastic products tend to think of plastics as either "commodity" resins or "specialty" resins. Commodity resins are plastics that are produced at high volume and low cost for the most common disposable items are durable goods. They are represented chiefly by polyethylene, polypropylene, polyvinyl chloride and polystyrene. Specialty resins are plastics whose properties are tailored to specific applications and that are produced at low volume and higher cost. Among this group are the so-called engineering plastics or engineering resins, which are plastics that can compete with die-cast metals in plumbing, hardware and automotive applications. Important engineering plastics, less familiar to consumers that the commodity plastics listed above, are polyacetal, ,polytetrafluoroethylene (trade mark Teflon), polycarbonate, polyphenylene sulfide, epoxy, and polyetherether ketone. Another member of the specially resins in thermo plastic elastomers, polymers that have the elastic properties of rubber yet can be moulded repeatedly upon heating.

Plastics also can be divided into two distinct categories on the basis of their chemical composition. One category is plastics that are made up of polymers having only aliphatic (lineau) carbon atoms in their backbone chains. All the commodity plastics listed above fall into this category.

The other category of plastics is made up of heterochain polymers. These compounds contain atoms such as oxygen, nitrogen or sulphur in their backbone chains, in addition to carbon. Most of the engineering plastics listed above are composed of heterochain polymers. An example would be polycarbonate, whose molecules contain two aromatic (benzene) rings.

The distinction between carbon-chain and heterochain polymers is reflected in the table, in which selected properties and applications of the most important carbon-chain and heterochain plastics are shown and from which links are provided directly to entries that describe these materials in greater detail. It is important to note that for each polymer type listed in the table there can be many subtypes, since any of a dozen industrial producers of any polymer can offer 20 or 30 different variations for use in specific applications.

Plastic Pollution: Plastic is of the new and worst chemical materials which cause serious environment pollution and in certainly a cancer in nature. Plastic is regarded to be a biological hazard since it is almost non-degradable. Tonnes of plastic waste are dumped everyday into the

earth all over the world. Plastic pollution is destroying the world's ocean ecosystems as a lot of waste is flushed into the ocean.

Reasons For Plastic Pollution: Plastic is used very commonly in the world because they are cheap, easy to make and they will last long as well. But, these useful qualities make plastic a real menace to the environment. As it so cheap that people discards it soon especially carry begs and disposable bottles. As these materials are long lasting and difficult to decompose, it persists in the earth for many centuries resulting in enormous environment pollution. As a result of urbanization, most of the pollution is concentrated in cities.

Synthetic polymers can easily be moulded into different shapes, while some can be made into thin film like bits and pieces, which became very accepted in form of durable and disposable carry begs and packing materials. These materials when thrown out after use remains in the soil in the same form as it is non-biodegradable.

Accordingly to latest studies, up to 105 million tonnes of plastic is produced yearly in the world, out of which only 2.5 million tonnes is produced in India. The use of plastic in Western and European countries is averaging 70 kg. per person per year, while in India, it is 4 kg. per person per year[2]. Anyhow its on the rise all over the world.

The amount of plastic waste in the ocean is rapidly growing as well. Close to 85% of objects found in the beaches contains traces of polymers. Most of the rubbish found on the beaches is packaging materials. This is a real threat to the life and habitatof marine wild life especially turtles as well as seabirds. In reality, Plastic Pollution is a much bigger threat than ozone hole depletion and global warming.

Dangers of Using Plastic Bags: The following are the dreadful effects of using plastic in our daily life:

1) **Environmental Damage:** Plastic bags have been known to cause a lot of environmental damage. A single plastic bag can take upto 1000 years, to decay completely. This makes the bags stay in environments longer, in turn leading to great build-up on the natural landscape (much more than degradable materials like paper). In other words, the more plastic bags we use, the greater the chances of environment damage.

2) **Threat to Animal Life:** As per Marrickville Council[3] of Australia, as many as 100,000 whales, turtles and birds have been reported to die every year, mainly because of plastic in their environment.Plastic bags not only have adverse effects on our natural habits, but have also been found to be responsible for the death of many animals. Mainly on account of the suffocation encountered on eating them.

2) **Suffocation:** Not only animals, infants and young children have also been reported to have lost their life, on account of plastic bags. Since plastic bags are thin and airtight as well, children often end up blocking their mouths and nostrils with them. In case they are not being monitored by an adult, this leads to suffocation and, in some cases, even death.

[2] Accordingly to studies by the Plastic Development Council under the Department of Chemical and Petrochemicals, India will emerge as the third biggest consumer of plastic in the world by this year end

[3]Marrickville Council in a local government area located in the inner west region of Sydney.New South Water, Australia.

3) **Pollution:** Plastic bags are extremely durable. In most probability, majority of the rubbish present in the city outskirts there comprises of plastic bags only. In other words, plastic bags have led to a great increase in the pollution levels.

4) **Fumes:** Since plastic bags are not bio-degradable, the only way to get rid of them is to burn them up. Through lighting a match to them is easy, it has more than its fair share of disadvantages. The biggest of them is that smoldering plastics can release toxic fumes into the environment, in turn taking the air pollution to much higher levels.

6) **Non-Renewable:** One of the main disadvantages of plastic bags is that they are not renewable. The reason behind this is that they are made of petrochemicals, a non-renewable source of energy. They can be recycled, but not as easily as paper bags. Plastic bags can last for as much as hundreds of years. In other words, long after we are no more, the plastic bag use by us will be in existence.

Some specific dreadful effects of Plastic Pollution: Some of the areas are affected enormously and they should be discussed more precisely such as.

- Plastics affecting environment.
- Plastics affecting wild life
- Plastics affecting marine life
- Plastics in our Oceans.

Plastics affecting environment: Every year, around 500 billion (500,000,000,000) plastic bags are used worldwide. So many that over one million bags are being used world-wide every minute and they are damaging our environment. India's plastics consumption is one of the highest in the world. Our planet is becoming increasingly contaminated by Plastic Pollution and by our unnecessary use of plastic carry bags.Big black bin liners, plastic carrier bags carrying advertising logos, clear sandwich bags, vegetable bags and a variety of other forms used to carry our daily food items.

Plastics affecting wildlife and marine life: Awhale dies in an urban harbor and on being autopsied, reveals a stomach full of plastic the most abundant detritus of civilization. Remarks **Gregory McNamee**[4], "We have recorded plastic bags in the Bay of Biscay[5], over 120 miles from shore in waters over 4000 meters in depth. Beaked whale species in particular are highly susceptible to swallowing plastic bags as they are believed to strongly resemble their target prey squid. Other species of large whales which take large mouthfuls of water during feeding also take in plastic bags by accident and hence are also at risk."

Elsewhere, a flamingo strangles itself on a bag, unable to twist its way out of the entangling plastic. A platypus suffers deep cuts from a plastic bag cover wined around its body, while a pelican dies after consuming plastic bags while driving for fish, calves, turtles, dolphins, seals the list of victims goes on. Another Scientist has recorded 170 kinds of land animals and birds injured by plastics washed up on British breaches joining myriad aquatic species who suffer the effects of discarded bags in the environment.

In November 2008 in Australia a 10 -foot-long crocodile tagged as part of a government wildlife-tracking programe turned up dead, having consumed 25 plastic shopping and garbage bags. Whitey,

[4]A British marine biologist.

[5]In Western Europe

as the crocodile was dubbed had been relocated a popular tourist destination called Magnetic Island, and authorities at first feared that he had died as a result of eating garbage left behind visitors. **Said Keith Williams**[6], however, "Whitey probably was picking up plastic long before".

Our planets is becoming increasingly contaminated by Plastic Pollution and by our unnecessary use of plastic carry bags animals and sea creatures are hurt and killed every day by discarded plastic bags a dead turtle with a plastic bag hanging from its month is not a pleasant sight but mistaking plastic bags for food is common place amongst marine animals. Plastic clogs their intestines and leads to slow starvation. Others become entangled in plastic bags and drown. Because plastic bags take hundreds of years to break down every year our seas become 'home' to more and more bags that find their way there through our sewers and waterways. Given India's poor garbage collection facilities tones of plastic bags, litter the roads, preventing rain water from seeping into the ground hundreds of cows die in New Delhi alone every year when they choke on plastic bags while trying to eat vegetable waste stuffed in the garbage.

Plastics in our Oceans: The plastics bags are not only dangerous in land as when burned they release cancer causing gases. But when plastic reaches our waters, whether it be plastic bags or drifting fish nets, it poses a threat to the animals that depends on the oceans for food.

Moreover, if plastic objects make it into the main sewer system[7], and the water treatment plants are overwhelmed by excessive rain, then those floating objects can float right out to sea. This is what happened many a times in many parts of the world[8]. In many cases the boaters dump their thrashes right into the sea.

In 1975, the National Academy of Sciences[9] estimated that 14 billion pounds of garbage was being dumped into the ocean every year. That's more than 15 million pounds per hour. More than 85% of this thrash was estimated to come from the world's merchant shipping fleet in the form of cargo-associated wastes. According to the Academy, the United States could be the source of approximately one-third of this Ocean pollution.

Global Concern about Plastic Pollution and Laws Framed for Preventing the Menace: More than a 100 million tons of plastic is produced world-wide each year. Though plastics have opened the way for a plethora of new inventions and devices it has also ended up clogging the drains and becoming a health hazard. Many countries including India have taken serious legislative steps to up bring a complete ban on the use of the dreadful component.

International steps taken: World of that devastation is spreading and countries around the world have taken measures to limit or ban the use of throwaway plastic bags[10]. The first to do so was Bangladesh which banned plastic bags in 2002 following a particularly damaging typhoon, authorities discovered that millions of bags were clogging the country's system of flood drains, contributing to the destruction.

---

[6]A member of the Group Australian Seabired Rescue.

[7] (by being flushed down the toilet, or carried by the rain into a street drain)

[8] On the New York and New Jersey beaches in 1988, when medical wastes was flooding up onshore, which later turned into debris that was blown back onto the shores .

[9](The National Academy of Sciences (NAS) is a non-profit organisation in the United States. Members serve as advisors to the nation on Science, Engineering and Medicine)

[10]Stated by Gregory Mc. Namee, the consultant contributor and contributing editor to the Encyclopaedia Britannica and its blog.

In the same year Ireland took another approach and instituted a steep tax on plastics. Accordingly to the country's Ministry of Environment use fell by 90 percent as a result and the tax money that was generated funded a greatly expanded recycling program throughout the country.

In 2003 the governments of Taiwan pet in place a system by vehicle bags were no longer made available in markets without charge and carryout restaurants were even required to charge for plastic utensils.

Larger economies have joined the cause. Australia has called for a voluntary ban and thus for consumption of the bags has fallen markedly as 90 percent of the country's retailers have signed on to the program. In 2005, French legislators imposed a ban on all non-biodegrable plastic bags, to go into effect in 2010. Italy also banned them that year and China has already prohibited bags less than 0.025 millimeters thick.

In the United States however, measures to ban or curtail the use of plastic bags have met with officials resistance with its powerful lobby, the plastic industry argues that job will disappear and the industry employs some two million workers, at least in good time, if the trade in plastic bags is reduced. Thus even in the United States the no-bags campaign is gaining ground.

No state has yet to enact a statewide ban, fee or tax. However, Hawaii does have a de-facto statewide ban, as all four countries in the state now ban non-biodegradable plastic bags it checkout as well as paper bags that are not at least 40 percent recycled. Kauai and Maui countries already enforce bans while Hawaii country's ban takes effect on January, 17, 2013. Honolulu country made the ban statewide when it passed legislation in May 2012.[11]

In California, (A.A. 298-passed the Senate Committee on Appropriation on July 2, 2012. The latest draft of the bill would prohibit stores of a certain size from providing single use carry out bags to customers. Stores would also be required to provide collection bins where customer could bring their single use bags to be recycled. This bill would also allow a city, country or the state to impose penalties for those in violation of the law.[12]

In 2009, the District of Columbia enacted a law to ban the use of disposable, non-recyclable plastic carryout bags and set a fee of 5 cents for use of all other disposable bags. Since imposing the fee, the District of Columbia has collected about $4.2. Million from the fee. The usage of bags has dropped from 22.5 million bags per month as of January 2010.

In 2009, North Carolina banned plastic bags for the Outer Banks region, a chain of barrier Islands off its wast. However, in 2011, the state passed legislation to temporarily suspend that ban due to a tornado that hit Dunn, North Corolina, which is the major distribution centre for paper bags in the area.

International hazardous waste convention Basel convention: The **Basel Convention**[13] came into force in 1992. The convention puts an onus on exporting countries to ensure that hazardous wastes are managed in an environmentally sound manner in the country of import.

[11]Retailers in Honolulu Country have until July 1, 2015 to make the change.

[12]About 50 bail jurisdictions in California have imposed local ordinances that pay the use of plastic bags helping the momentum behind A.A. 298.

[13]On the Control of Trans boundary Movements of Hazardous Wastes and their disposal.

The Basel Convention places obligation on countries that are party to the Convention, 151 countries have ratified the Basel Convention as to December' 2002. These obligations are to:

* Minimisegeneration of hazardous waste
* Ensure adequate disposal facilities are available
* Control and reduces international movements of hazardous waste.
* Ensure environmentally sound management of waste, and
* Prevent and punish illegal traffic.

Australia signed the Basel Convention in 1992. The convention is implemental in Australia.[14]

The Waigani Convention: The Basel Convention establishes a global control system for hazardous wastes being shipped from one country to another. States which are parties to the convention must not trade in hazardous wastes with non-parties but an exception to this is provided in the convention.[15]

The Waigani Convention which came into force in October 2001. The main effect of this Convention is to ban the import of all hazardous and radioactive wastes into South Pacific Forum Island Countries. It also enables Australia to receive hazardous wastes exported from South Pacific Forum Island Countries which are not parties to the Basel Convention. There are 24 countries with the coverage area of Waigini Convention.

As at December 2002, ten parties had ratified the Waigani Convention. These were Australia, cook Islands, Federal States of Micronesia, Kirribati, New Zealand, Papua New Guinea, Samea, Solomon Islands Tuvalar and Venuatu.

Laws prevailing in India relating to the environmental degradation by plastic: The indiscriminate use of plastic bags poses huge threat to the environment and poses serious health hazards for life on the earth. The Government has put a complete ban on the use of any type of plastic. In India laws on plastic use are covered under the Environment Protection Act, 1986[16]. The Delhi Pollution Control Committee (DPCC) has been empowered to implement the ban and register complaint against violators. However, many states level steps have also been taken in this direction.
In India, the National Environment Policy,2006 while suggesting measures for controlling various forms of environmental pollution lays emphasis on the need for collection and treatment systems for recycling wastes and devising measures for environmentally safe disposal of residues.

On October' 29, 2009, inspite a ban on ultra-thin plastic bags a blutant use of plastic was witnessed. The Nagpur Municipal Corporation's Health Department, resuming its drive against use of plastic bag, conducted raids at various city shops, vendors and seized almost 15 kg. of banned plastic bag. On August 9, 2010, the Karwar City Municipal Council has banned the use of non-standard plastic bags in the city limits.

On February 26, 2011 the Amravati Municipal Corporation (AMC) decided to impose complete ban on use of plastic bags in the city.

[14]It is implemented by the Hazardous Waste (Regulation of Exports and Imports Act, 1989).

[15]It is provided in Article-11 of the convention whereby parties may enter into agreements or arrangement either with other parties or with non-parties.

[16]This Act includes provisions for punishing the offender with 5 years of imprisonment or fine upto Rs 1 lakh or both.

Thus the Indian states which have taken a step to ban plastic use includesMaharastra, Delhi, Punjab, Rajasthan, Himachal Pradesh, Goa, West Bengal etc. The Environment Ministry has banned manufacture and use of plastic carry bags less than 8 inches x 12 inches in size 20 micron in width.

The Apex Court has also shown rigidity towards the ban on use of plastic and polythene bags. As on January 29, 2010 the plea of the **All India Plastic Manufacturers Association** for staying the operation of Delhi High Court, Judgement which banned the use of polythene bags in the national capital was declined by the bench headed by Chief Justice K.G. Balakrishnan.

Solutions to the Havoc Caused by Plastic: After knowing about the adverse effects of the poisonous day to day commodity. It becomes the duty of every sensible citizen to avoid the use of plastic or to adopt some ways for the manufacture of eco-friendly plastics. Some reasonable way can be enumerated as:

* Microbial answer to Plastic Pollution.
* Recycling.
* Combustion.
* Hazardous Waste Disposal.
* Manufacturing eco-friendly plastics.
* Some day to day efforts in positive direction.

Microbial answer to Plastic Pollution: It was reported on March 31, 2010[17] that fragments of plastic in the ocean are not just unsightly but potentially lethal to marina life. Coastal microbes may offer a smart solution to clean up plastic contamination, according to **Jesse Harrison**[18].

The researchers from the University of Sheffied and the Centre for Environment, Fisheries and Agriculture Science have shown that the combination of marine microbes that can grow on plastic waste varies significantly from microbial groups that colonise surfaces in the wider environment. This raises the possibility that the plastic associated marine microbes have different activities that could contribute to the breakdown of these plastics or the toxic chemicals associated with them.
Plastic waste is a long-term problem as its breakdown in the environment may require thousands of years. Plastics form a daily part of our lives and are treated as dispossable by consumers. As such plastic comprise the most abundant and rapidly growing component of man-made litter entering the oceans explained Jesse Harrison.

Over time the size of plastic fragments in the oceans decreases as a result of exposure to natural forces. Tiny fragments of 5 mm or less are called “microplastics” and are particularly dangerous as they can absorb toxic chemicals which are transported to marine animals when ingested.

While microbes are the most numerous organiser in the marine environment the DNA based study to investigate how they interact with plastic fragment suggested the new study which investigated the attachment of microbes to fragments of polyethylene a plastic commonly used for shopping bags. The scientists found that the plastic was rapidly colonised by multiple species of bacteria that congregated together to form a ‘biofilm’ on its surface Interestingly, the biofilm was only formed by certain types of marine bacteria. Thus Harrison suggested that “Microbes play a key

[17]In Science Daily.

[18]Who presented his research at the society for General Micro-biology’s spring meeting in Edinburg.

role in the sustaining of all marine life and are the most likely of all organisms to break down toxic chemicals, or even plastic themselves".

Recycling of Plastics: Plastic recycling is the process of recovering scrap or waste plastic and reprocessing the material into useful product sometimes completely different in form from their original state. For instance, this could mean melting down soft drink bottles and then casting them as plastic chairs and tables. Recycling saves space in landfills and reduces the amount of virgin materials that must be mined or manufactured to make new products saving energy and reducing global climate change in the process.

Combustion of Plastic: Some American Scientist remarked[19] that plastic waste is mounting, mostly in lanfills for disposal of which it requires strategies, that includes recycling and burning. Plastics, they note, can be a clean and potent source of energy when burned. They advocates waste-to-energy combustion and argue that as pollution controls improve, the release of toxic emissions primarily dioxins and heavy metals can be minimized.

Hazardous Waste Disposal: Many products like motor oil, pesticides, batteries and the huge number of plastics are potentially hazardous to sanitation workers and the general population as a whole. They are also more dangerous to the environment then inert materials. Many communities offer special collection and disposal programs to deal with household hazardous waste as safely as possible. In areas with no such programs, it's legal to dispose of household hazardous waste in the thrash.

Eco-friendly Plastics: Technology can be a boon and a blessing as well. For prevention of this dreadful species of pollution, the aid of technology can be taken. As the use of degradable plastics is the gift of science and technology. The principle is to incorporate into the plastic some chemicals that is photo-degradable/ biodegradable or chemical treatable.

By adding starch, biodegradable plastics are generally made. On burial such plastics are attacked by bacterial feeding on starch, which breaks these down into tiny particles that disappear harmlessly some common examples of bio-degradable plastics are the use of "non-removable" suture materials in surgery or capsules for drugs, which dissolve slowly in body fluids.
Chemically degradable plastics can be broken up by spraying them with a solution that causes them to dissolve. Photo-degradable plastics contain chemicals that slowly disintegrate when exposed to light. In France strips of photo-degradable plastic about 3 ft. (1 mtr) wide are used to retain heat in the soil and produces early crops. They last for about 1 to 3 years before rotting into the soil. But they have to be used in places with consistent amount of sunshine so that they decay at a predictable rate. In the USA about one quarter of the plastic yokes that link bear cans in a six pack are made of plastic called Ecolyte which is photo-degradable. But to stop them decaying too easily, they must be stored away from direct sunlight, which can be of some inconvenience to the retailer.

However degradable plastic can have a few other problems. For example it cannot be recycled because there is no any way to measure its remaining life span. The biggest draw back in the cost of its production.

[19]Bruce Piasecki, David Rainey and Kevin Fletcher in their article. Is combustion of Plastic Desirable?

Conclusion: "It is the duty of every individual to conserve environment. If we conserve environment, it will protect us".[20] The Mangalore University in association with department of bio-science and committee for Environment Pollution Control organized the event on the theme 'save environment from plastic pollution'.

Inspite of plastic pollution being so dangerous, we are completely dependent on plastic. But this habit if changed then a revolutionary transformation can take place. If instead of a plastic water bottle a stainless one is used, if for packing paper sheets is being use, if the shoppers starts using cotton bags rather than going for a plastic bag. Then, this global problem of plastic pollution can be resolved in a very large extent.

When plastic has covered almost all the areas of the Mother Earth. It is need of the hour that some serious steps should be taken and the conscience of every human being must be awaken, that if we are not alert now than it might be possible that our future generation will be gifted of a planet which will have only one thing available that will be huge piles of plastic scattered in every ecosystem including plant, marine and animal life.

[20]Said Mangalore University, Vice-Chancellor, Prof. Shivashankaramurthy on June 2012 in the inauguration of world environment day.