NAPE LOBBY

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The good, Bad and Urgly side of Plastics

Do we still need it?

Uganda's Experience

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“Plastic Age”

Today the world is almost free from moth and rust and full of colour, thanks to plastics. Virtually everything in the world is largely built up of synthetic materials made from the most universally distributed substances.

All plastic products have many chemical additives that give it desirable performance properties, however, these additives also have negative environmental and human health effects.

Editorial

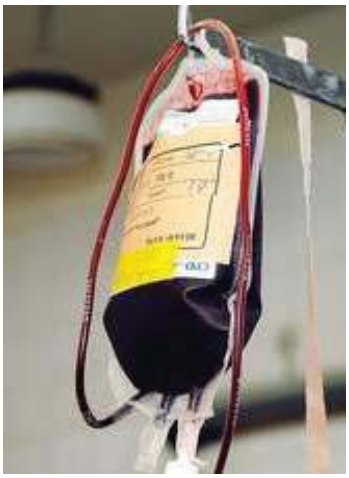
Plastics are inexpensive, lightweight, strong, durable, corrosion-resistant materials, with high thermal and electrical insulation properties. Almost all aspects of daily life involve plastics, in transport, telecommunications, clothing, footwear and as packaging materials that facilitate the transport of a wide range of food, drink and other goods.

There is considerable potential for new applications of plastics in the future, for example as novel medical applications, in the generation of renewable energy and by reducing energy used in transport.

It is evident that plastic consumer products bring many societal benefits and offer future technological and medical advances. However, concerns about usage and disposal are diverse. In all consumer materials, disposal of plastic material contributes to the growth in municipal waste and additionally produces urban litter. Urban litter contains large quantities of discarded materials, including plastic products. Plastics are not readily biodegradable in the environment, and plastic litter can persist for extended periods of time.

In Uganda like many other parts of the world, plastic consumer products are discarded carelessly almost everywhere, and it is becoming very difficult to manage. Littering is a behavioural issue that needs to be addressed primarily through education.

NAPE and a few civil society organizations have been conducting vigorous campaigns against the use of especially plastic carrier bags in the country. To rid the country of the menace of discarded consumer plastic materials, concerted efforts of everyone is required. Civil Society Organizations should be more devoted to increasing the awareness of consumers about the environmental consequences of litter, as this is the most effective solution. Government should ensure that regulations and guidelines to govern the importation or manufacture, sale and use of plastic consumer materials are in place and effectively monitored.



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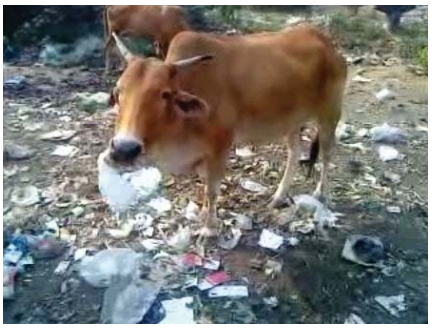

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Plastics Age: Environmental and Health Impacts

Almost all aspects of daily life involve plastics - in transport, telecommunications, clothing, footwear and as packaging materials that facilitate the transport of a wide range of food and drinks, dishware, personal care products and medicines.

Plastics are versatile, cost-effective, lightweight, strong, durable, corrosion-resistant materials, with high thermal and electrical insulation properties and require less energy to produce than alternative materials such as metal, glass and wood ; and can be manufactured to have many different properties.There is considerable potential for new applications of plastics that can bring societal benefits in the future.

In the last three decades or so, the global production of plastic materials increased tremendously leading to increased supply of plastic consumer products for a myriad of applications. The easy availability of plastic consumer materials, many of which are one-time products has lead to increased consumption and presents a big challenge of disposal. Today many societies, world over are grappling with the challenge of managing plastic waste. Plastics are not readly biodegradable in the environment and present health impacts to humans and wildlife.

The environmental and health issues human society faces today in the age of plastics mostly stem from the fact that the impact of the scales of plastic consumption and disposal were not considered until after massive production was well at hand.

To revert this undesirable situation, it will be important to consider alternative products that can deliver similar societal services, and carry out a comprehensive and carefull assesment of their life-cycle before going into mass-production.

Secondly, a framework for an efficient and effective sustainable waste management education for communites shoud be put in place to address societal behavior.

Plastic Consumer products and the future

The plastic age is not about to end soon. There is much that plastics can contribute to the wellbeing of society. Taking the current speed of technological advancement, there all indications that life in the next two to three decades will be splendid compared with life today and plastics will indisputably play a significant role in this change.

Plastics will continue to offer considerable benefits for the future. What is need is to change the current approaches to production, use and disposal which are not sustainable and present concerns for wildlife, human health and the environment. Fortunately, recent research has provided considerable information about the many human health and environmental hazards associated with improper use of plastics.

The solution to a sound plastic era will require a new approach and combined actions from the actors – the industry, suppliers and end-users of plastic products. Consumers must adopt sustainable use and disposal approaches, particularly reducing, re-using, and recycling. The industry must adopt new designs that permit materials reuse and/or end-of-life recyclability. Governments and policymakers must set standards and stringent frameworks, and finance for technological developments and monitoring.

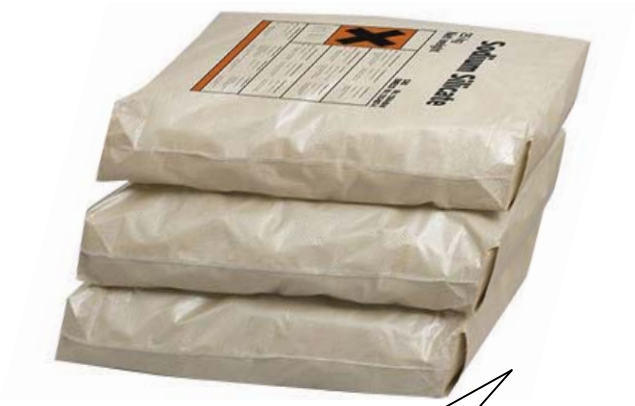
The good side of plastic

Plastic enabled countless advances in industry and way of the life. Created to be light, durable, chemically resistant, non-reactive to outside influences, and easy to manufacture, plastic is a perfect building material for countless articles that are used not only by ordinary users in their daily affairs but also construction industry, electronics, packaging, transportation, energy conservation, scientific components and other.

By employing various manufacturing techniques plastic can be shaped and molded into any desirable form, have any color, or any physical property.

Plastics are easy to clean and hard to break, and can be used to store liquids and food. Plastic materials can be used under all weather conditions.

Plastics in packaging

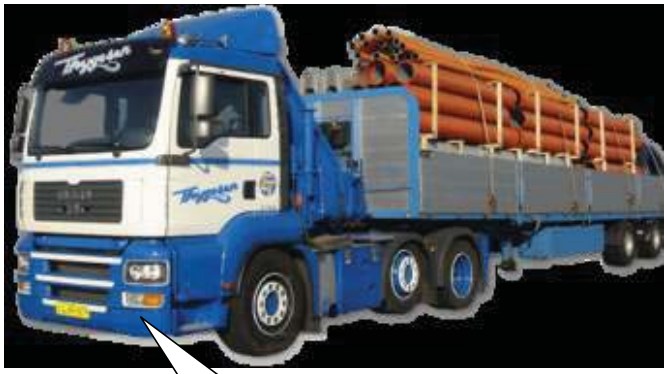


Plastic are embraced by the packaging industry with both hands because it is Versatile, durable, flexible, rigid, and light

Pivatal Role of Plastics in transportation

The advantages of plastics in the transportation equipment manufacturing industries are numerous. Plastics are much lighter than metal, which equate into better fuel economy and cheaper to manufacture parts. Additionally, the lighter weight aids in safer material handling. Plastics can be designed to be impact and dent resistant, and modified for improved strength. Corrosion resistance, color and texture flexibility, the economical components and aesthetics are other advantages of plastics.

Materials used in transportation equipment and manufacturing are often lightweight, high temperature and impact resistant.



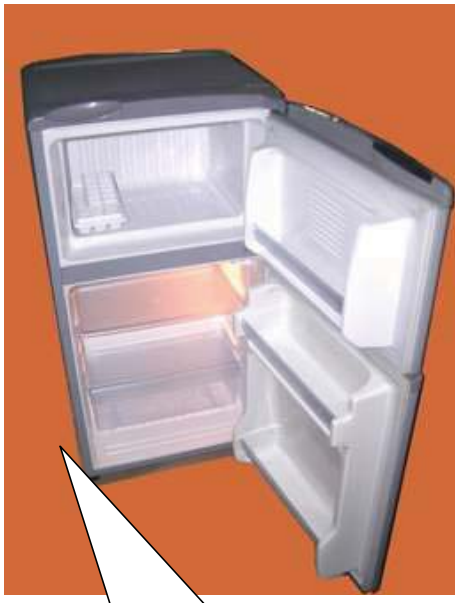
Features such as shock absorption for bumpers, suppression of explosion risks in fuel tanks, seat belts, airbags and other life-saving accessories such as durable plastic safety seats to protect our youngest passengers make plastics the safest material for car-related

Plastics help Conserve energy

The thermal and insulation properties of plastic made it ideal to become backbone of the electronic industry.

Many homes, cool stores, industrial buildings and home appliances rely on plastic insulation to prevent energy losses. Installing expanded polystyrene (EPS) insulation, for example, means that less heating fuel - or energy for air conditioning - is required, helping to conserve valuable reserves of finite natural resources.

These benefits lead to the preferable plastics' usage, because they give increased productivity, longer life. The new product is reliable, with no lubrication requirements, significant cost savings provided, less down time and improved appearance.



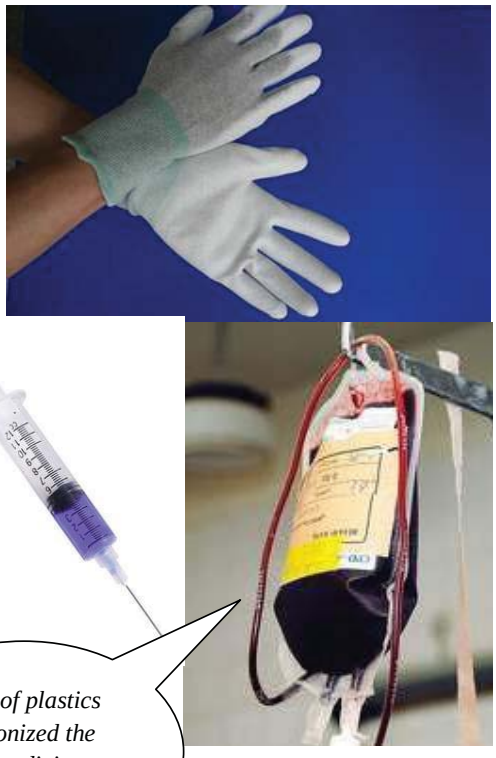
Today's refrigerator models use plastics as a replacement for painted metal exterior panels, providing greater freedom of design, lighter weight, and potentially lower costs to the consumer. Tough, impact- and corrosion-resistant plastics such as ABS, high impact polystyrene and polypropylene are used to create molded interior panels and door liners that help maximize usable space.

Benefits of plastics in Medicine and Public Health

In medicine and public health, the diversity of plastic uses is incredible. Disposable plastic items such as latex gloves, intravenous (IV) bags and dialysis tubes are inexpensive and allow for patient safety as well as time saving due to eliminating the need to sterilize used equipment.

These plastic appliances are used for immediate drug-delivery, to treat dehydrated patients through fluid replacement, to transfuse blood, and to correct electrolyte imbalances as quickly as possible. The IV injection of fluids and medicines into the bloodstream is by far the fastest method of delivering remedies into the body.

Syringes too are a good example of how plastics have benefited public health through single-use applications.



The use of plastics revolutionized the field of medicine making patients

The Bad Side of Plastics

Plastics are everywhere! Today, you can hardly look around you and not spot some item made entirely from plastic or has some plastic ingredient. This only proves that from its inception up to now, plastic has become popular building material of millions of useful items, but it is not perfect.

Plastic has several disadvantages that prevent it from becoming universal building block of modern human civilization, and because of that, there is urgent need to strictly control its use and create complex law and regulations that govern its creation, useand recycling to avoid the environmental impact of plastic waste and the chemicals that are used in its creation.

The widespread use of plastics facilitates continuous contact of these materials with the human body and with it daily exposure to ingredients in plastics. When plastic items are carelessly discarded in the natural environment after use, the chemical ingredients leach into the natural ecosystem (soil and water) and present serious health risks to humans and the environment.

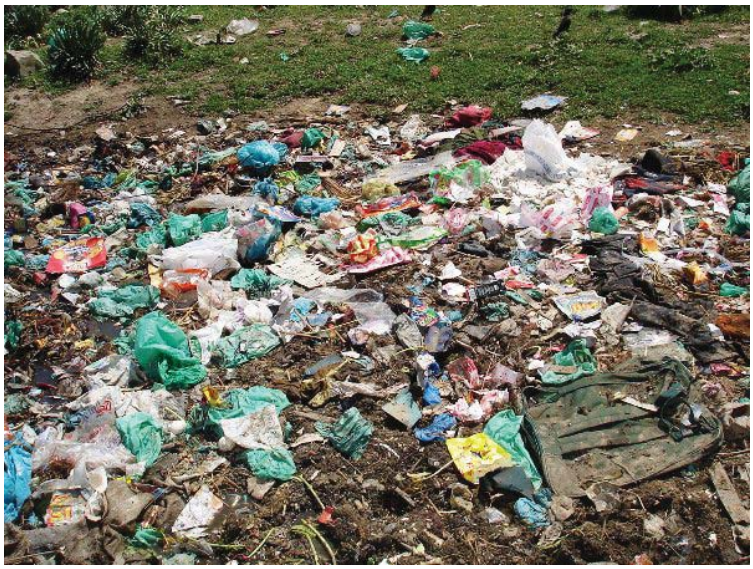
All plastic products have many chemical additives that give it desirable performance properties; however, these additives also have negative environmental and human health effects. These effects include:

Direct toxicity, as in the cases of lead, cadmium, and mercury

Carcinogens, as in the case of diethylhexyl phthalate (DEHP)

Endocrine disruption, which can lead to cancers, birth defects, immune system suppression and developmental problems in children.

Impacts of Plastic on natural environment



Piles of waste containing plastic materials like this are common in many municipalities in Uganda.

Substantial quantities of plastic have accumulated in the natural environment and in landfills.

Plastic is artificially created polymer compound which can survive many centuries before nature is able to degrade it. Placing plastics in a landfill may simply be storing a problem for the future, as plastic's chemicals often sink into nearby land, contaminating groundwater.

The continuous dumping of plastics into landfill and seas will eventually create problems for future generations. The synthetic material leaves harmful imprints on the environment and perhaps human health.

Impacts of plastics on waterways and aquatic life

Water channel near Kampala cloges by plastic waste

The environmental and health issues human society faces today in the 'age of plastics' mostly stem from the fact that the impact of the scales of plastic consumption and disposal were not considered until after mass-production was well on its way.

Substantial quantities of plastic have accumulated in the natural environment and in landfills. Some of these end-of-life plastics discarded end up in waterways blocking the free-flow of water and creating a breeding ground for disease causing vectors.

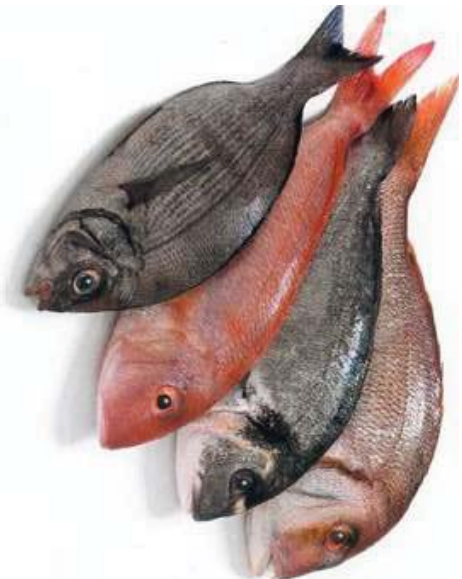
Plastics kills! Animals and fish too are at risk

Animals at a pile of waste mixed with plastic materials

Plastic debris is ingested by hundreds of animal, birds and fish species, clogging their digestive systems and infusing their systems with chemicals.

The Plastic bags, once ingested, cannot be digested or passed by an animal so it stays in the gut. Plastic in an animal's gut can prevent food digestion and can lead to a very slow and painful death.

Not only do the bags choke the animals' stomachs but plastic residues than enter the human food chain through dairy and other products.



Migration of chemicals from plastic into food

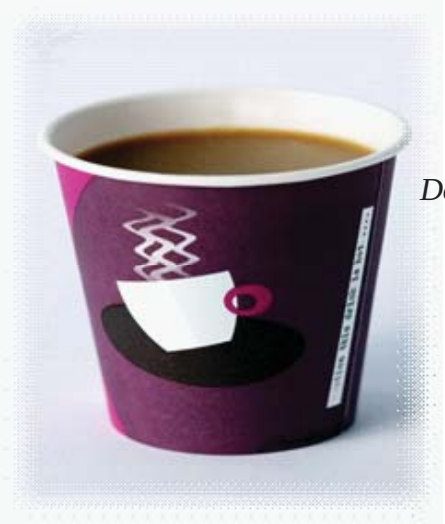
All plastic products have chemical additives in them. When hot food is packed in plastic, chemical exchange between plastic and food is maximized by high temperature and the nature of the food. Toxins could migrate from the plastic to the substances they hold. The most common food interactions are the migration of low molecular weight substances such as stabilisers, plasticisers, antioxidants and monomers from plastic packing materials.

Water in plastic containers is also unfit for human consumption because the containers are usually exposed to direct sunlight when they are loaded onto trucks.

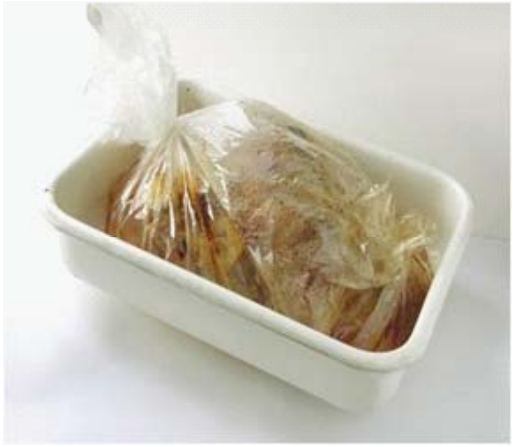
To minimize chemicals contamination in food packed in plastic containers, you can do the following;

- *Buy food in glass or metal containers; avoid polycarbonate drinking bottles with Bisphenol A*
- *Avoid heating food in plastic containers, or storing fatty foods in plastic containers or plastic wrap.*
- *Do not give young children plastic teethers or toys*
- *Use natural fiber clothing, bedding and furniture*
- *Avoid all PVC and Styrene products*

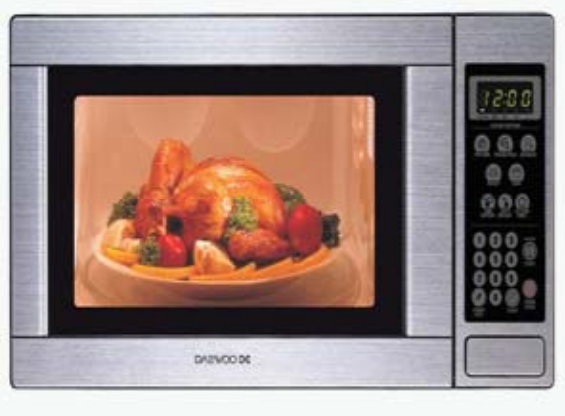
What to Strictly avoid



Do not take hot drinkd from a plastic cup



Dot not eat anything hot from plastic bags e.g. cheaps



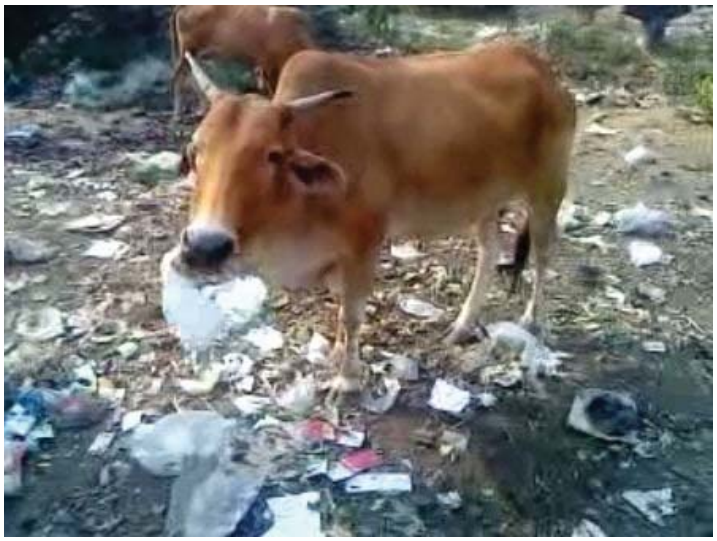
Do not microwave anyting in plastic containers not intended for use in mirowaves e.g whipped topping bowels

The urgly Side of Plastics

Plastic is now a regular material that is being used on a daily basis. Plastic is everywhere either in the form of food containers, financial transactions (Debit/Credit cards, plastic money), storage, baggage, stationary items, electronic and electrical products and every foreseeable item that a human being can think of.

According to recent research, exposure alters the health and fertility of our children and perhaps even our children's children. The hormone-like chemicals in plastic may remodel our cells and tissue during key stages of development, both in the womb and in early childhood. These chemicals are responsible for endocrine disruption, which can lead to cancers, birth defects, immune system suppression and developmental problems in children.

Notable urgly snarios:
Deplition of natural resources - problems arising from the large quantities of plastic being disposed of, and depletion of non-renewable petroleum resources as a result of ever increasing mass-production of plastic consumer articles.

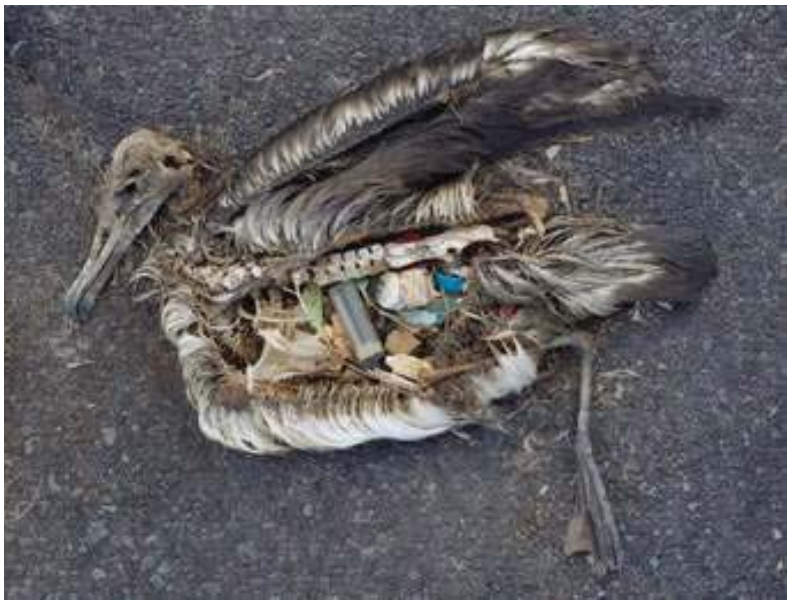


A young boy fron Ngangoto villa affected by contaminated water

Death: Plastics threaten the life of Animals and Birds

Single-use plastic bags are notorious for their interference in natural ecosystems and for causing the death of aquatic organisms, animals and birds.

Plastic debris is ingested by hundreds of animal, birds and fish species, clogging their digestive systems and infusing their systems with chemicals.



Birds sometimes mistake plastic materials for food. When plastic debris is ingested, it can lead to death.

Possible sollussions

Environmental education at workplaces, schools and residential areas is a vital tool in the fight against plastic bags. Empowering people to take proactive actions and encouraging them to be a part of the solution can also be helpful in reducing the reliance on single-use plastic bags.

Municipalities can make use of 5Rs of waste management – Rethink, Reduce, Reuse, Recycle and Recover – to encourage safe disposal of plastic bags which may be facilitated by mass deployment of plastic bag collection systems and recycling facilities at strategic locations. Some of the alternatives are cloth-based bags, such as jute and cotton, which biodegradable as well as reusable.

Conclusion

It is time to rethink the current management model of the production and disposal of plastics and to move towards a model that considers the entire life-cycle of these abundant, essential materials. Disposal of plastics in landfills ultimately is unsustainable and diminishes land resources fit for other uses of higher societal value.

Increasing consumption of biodegradable plastics can reduce the carbon footprint, pollution risks, and greenhouse gas emissions from polymer usage; however, it can do so only if these alternatives are made from non-fossil resources using renewable energy.

Civil Society Efforts to rid the county of Unsustainable Consumption Disposal of plastic Products

For more than three years, the National Association of Professional Environmentalists (NAPE) has been struggling to fight the unsustainable use and disposal of end-of-life plastic consumer items, but with little success. The little success can be attributed to the fact that most of the consumer materials people uses on daily basis – from cell phones to foot-ware and clothing, to household items have components of plastics, and there are no immediate alternatives.

It is also possible that most people including the elite in society only see the menace of single-use plastic carrier bags in regard to only littering everywhere, choking the soil and clogging water ways; and have no idea that plastics also have the potential to seriously harm human health.

In this regard, there is a serious and urgent need for education and sensitization about the harmful impacts of plastic consumer products among the general population. This will need concerted efforts by all players –government, policy-makers and civil society. Government should provide financial support for research and technological development towards efficient alternatives. Policymakers should work towards formulation of effective and enforceable legal frameworks to manage the sustainable use of existing plastic products, and promote research in possible alternatives. Civil society should work closely with government to educate and sensitize the masses on the harmful impacts of plastics to environment and health.

NAPE' Executive Director addressing the media about the need for Government to immediately ban on use of single-use plastic bags (Kaveerea), June 2015

Already civil society including NAPE and the National Environment Management Authority (NEMA) has been trying but more still needs to be done. The general population should support this cause.

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