

Plastics

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Introduction

Plastics appears in almost everything and we are aware of that. It's production have only grown since it's introduction. We get on with our lives thinking that most of the plastics we use get recycled but in real less than 9% of plastics are recycled [2] and most of then end up in landfills or someway into the environment. We have been repeatedly told by media, politicians and industries that if we do our part and separate plastics from our garbage before it gets collected the plastics will get recycled, failing do to so ends up making us feel guilty. But in reality it's not that simple, in-fact most of the plastics don't get recycled because it's not recyclable.

Most of the plastics which are produced are not recyclable and ends up in landfills, get burned or get dumped in ocean where it breaks down into micro-plastics 1 which gets eaten by aquatic lives . These plastics in one way or other end up in our body though food (like fish), sea salt or water. A



Figure 1: Sample image demonstrating micro-plastics in oceans

study conducted by World Wide Fund for Nature suggested that an average person could be consuming a credit card worth of plastic every week [3].

Who so little plastics get recycled

There are plenty of campaigns run by various organisations(many of them funded by plastic industries themselves) trying to send us message that it is our responsibility to deal with the environmental impacts of their products. We must have seen the famous symbol 2 which denotes that the product is recyclable which in turn makes it out responsibility to get it to recycle plants. There are different types of plastics



Figure 2: Recycling Symbol

which are represented by the numbers inside that recycling symbol. In total there are 7 different types of plastics where number 7 contains the types of plastics which are not fitted into the other 6 categories 3.

Among these 7 types, very few are recyclable. Some categories are recyclable and do get recycled for example plastics in categories 1 and 2, whereas depending on where we live certain other types of plastics may not get recycled at all. For example in US less than 5% of plastics from categories 3-7 are recycled. So in total out of 7 only 2 are recycled which is a very shocking. There are various reasons why plastics certain plastics don't get recycled



Figure 3: Different types of plastics

- Some plastics are complex mixes of different resins making them difficult to recycle
- Practical obstacles like plastics gets contaminated making them hard to recycle or sorting the plastics into their respective categories.
- Economic reasons, it is cheaper for plastic industries to make fresh plastic then to recycle it

There are serious doubts that recycling plastics can ever be economically viable [4].

It is easy for them to make us believe that all plastics waste are recyclable because we badly want to believe it. We easily believe lies if we want that to be true (think of promises made by politicians when elections are around the corner). **WishCycling** is the term often used to define the desire of people wanting things to get recycled. Becasue of wishcycling we actually put non recyclable items for recycling which does more harm

- Sorting recycling items from non recycling items required manual work sometimes
- Sometimes, recycling plants have to stop the machine to remove the non recyclable objects that we badly want it to get recycled.
- Inclusion of non recyclable plastics on recyclable one sometimes ruins the plastics which can actually get recycled.

So the impression we have that the plastics we responsibly put into recycling thinking that it will get recycled are false.

What harm plastics can do

Up until 2018, developed countries used to ship their low quality plastic waste that they can't use to China. At one point roughly 70% of world's plastic waste went to China [5]. But it all stopped since 2018 since China strictly banned import of most plastics [6]. And since then most of the plastic waste are either pilling up in recycling plants or getting dumped to other developing countries in Asia [7]. There are documentaries which shows plastics from US, Italy or from supermarkets are being dumped on countries like Malaysia, Sri Lanka etc.

These countries doesn't have capacity to deal with their own plastic waste and on the other hand entire world is dumping plastics to them. Since they can't deal with the waste, it gets burned which releases toxic fumes having serious impact on health of people who live there. To tackle that, more than 180 countries agreed to place strict limits on exports of plastic waste from richer to poorer countries [8]. If plastics doesn't get burned it ends up in environment, a study shows that in total world dumps more than 8.8 million tons of plastics into ocean every year [9]. It is estimated that by 2050 we will have more fish than plastics by weights in the ocean [10].

Although abysmally low fraction of plastics gets recycled, a even tinier fraction of plastics (around 2%) gets into closed loop system of recycling. **Closed loop recycling** is where plastics becomes things



Figure 4: Closed Loop recycling

it originally was, for example bottle gets recycled and becomes bottle again (Fig: 4). In most of the cases plastics gets recycled to something else like carpets, sweatshirts, bench etc and then it cannot be recycled further.

Is it our fault?

All the facts mentioned above are known to plastics industries, it is also known to them that efforts of public are not the main factor in managing plastic waste. Even after all these facts are known to them they give the message to people that if we are responsible enough then all the plastics can be put into continuous reuse. The bar of recycling are so low for industries that even recycling 20% of their waste is a huge achievement. Brand audits of plastic waste have found Cocacola products as top global polluter. Although Cocacola have pledged to use at least 50% recycle material in their packaging by 2030 [11] but the thing to note is that Cocacola have been making and breaking pledged like that for years. For example in 2009 they pledged to use at least 25% of plastics from recycled material by 2015 [12] but their current production is just 10% [13].

Although it may seem pointless but recycling does help in managing plastics waste. We should definitely keep recycling paper, aluminium, cardboard and even plastic while it may not have the level of impact we want it to have but it still can have model environmental benefits. Big cities do have plants which can recycle bottles and some bags so at least try to get those recycled. But having said that we should do it more mindfully and check our local Municipal corporation to check types of plastic they accept and only get those plastics to recycle instead of wish cycling or else we can end up contaminating usable materials and do more harm to the process.

Even though plastics industries have managed to convince us by spending millions of dollars throughout decades but our personal behaviour is not the main culprit here. But knowing all that, we shouldn't be using single use plastics like grocery bag and just eliminating that will make significant difference as nearly 50% of plastic waste generated globally in 2015 was plastic packaging and most of it was single use [14]. It is hard in individual level to end their use as the entire world have to work together, a better way would be to implement targeted band to that force the introduction of alternatives. Positively, many cities have banned single use plastics but the industries have fought this change and made them to reverse it in some cases.

The real change should come from plastics industries without which nothing significant will happen. We have to make them pay up for polluting the environment and there is a way to do this using Extended Producers Responsibility. The idea is to create laws that essentially shift the responsibility and cost from government and from us to the producers of plastic waste (Fig 5). EPR can force companies to either create infrastructure and markets to recycle products they make or force them to stop the production all together. While many countries do have national EPR law but US is the exception here and they are one of the top polluters.

Plastic production is expected to triple by 2050 and it is important to change the system regarding plastics. Meaningful change can only come if we force plastics industries to force to do things that they have no interest in doing. We have to make them or else deal with the fact that we will in one way or other consume increasing amount of plastics through one way or another which will outnumber fish in coming few years.



Extended Producer Responsibility – the Rise of Plastic Waste Disposal Industry in India

Figure 5: Extended Producer Responsibility

This document is a my notes to summarise what I learned about plastics waste through John Oliver video and citations included in it. I believe that for cleared understanding one should definitely check out the video [1]. He makes the information fun to gather with his humour and wittiness.

End

References

- [1] [Last Week Tonight with John Oliver](#)
- [2] [Five things to know about plastic waste and recycling in India](#)
- [3] [Revealed: plastic ingestion by people could be equating to a credit card a week](#)
- [4] [How Big Oil Misled The Public Into Believing Plastic Would Be Recycled](#)
- [5] [Where Will Your Plastic Trash Go Now That China Doesn't Want It?](#)
- [6] [Piling Up: How China's Ban on Importing Waste Has Stalled Global Recycling](#)
- [7] [Tracking your plastic: Exposing recycling myths \(Marketplace\)](#)
- [8] [Countries Tried to Curb Trade in Plastic Waste. The U.S. Is Shipping More.](#)
- [9] [Study: World dumps 8.8 million tons of plastics into oceans](#)
- [10] [The New Plastics Economy: Rethinking the future of plastics](#)
- [11] [What is world without waste](#)
- [12] [Our commitment to making a positive difference in the world.](#)
- [13] [The Global Commitment](#)
- [14] [SINGLE-USE PLASTICS: A ROADMAP FOR SUSTAINABILITY](#)
- [15] [Plastic Wars: Industry Spent Millions Selling Recycling — To Sell More Plastic](#)