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Harmful effect of recycling: Its not a silver bullet as we think

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Abstract

Recycling is one of the first eco-friendly moves that people like to make for the environment sustainability but when it comes to what items can be recycled and how that often leads to lots of confusion. Recycling aids in combating climate change while also conserving raw materials, reducing litter and the need for landfill space, as well as generating jobs, lowering greenhouse gas emission, reduces energy use and promoting community involvement. Even though we know various advantages of recycling but it is not carried out on large scale. In addition to global problems we're seeing with waste today, the production and mismanagement of consumer goods is a major source of greenhouse gas emissions, which contribute to climate change and on the other hand it is also an expensive process. The cost of recycling can vary depends on the efficiency of the recycling program and on demand for recycled materials. In some cases, the cost of recyclable materials also exceeds the cost of raw materials. Sometimes the recycling of waste equipment can create a significant amount of pollution. Thus the process isn't as helpful as we think, Recycling alone isn't enough to say, fight climate change or eliminate pollution and not a quick solution of a complicated problem.

Keywords: Sustainable environment, catastrophe, organization for economic co-operation and development (OECD), volatile organic compound (VOCs), chasing arrows

Introduction

The world increasing demand for new stuff has led to increase in waste generation that causes the harmful disruption and damage being done to the natural world. Waste reduction through recycling is a fundamental strategy. Recycling is the process of collecting and converting waste materials (that would otherwise be thrown away as trash) into new products. The recyclability of a material depends on its ability to reacquire the properties it had in its original state that also includes the recovery of energy from waste materials (Villalba *et al.*, 2002) ^[9]. People believe that recycling is a good habit for the environment but are confused about what items can be recycled and how. This often leads to recyclables going in the trash. While recycling is generally known as being good for the environment, there are plenty of different pros and cons to recycling. In ideal implementations, recycling a material produces a fresh supply of the same material. Recycling helps conserve natural resources, reduce greenhouse gas emissions, prevent pollution, and create jobs and industries. Natural resources, or materials that arise naturally and are utilized to create products, the world has finite natural resources and we run the risk of exhausting (using up) our natural resources if we don't recycle and reuse them. For example

1. Recycling paper saves trees and the forests.
2. Recycling plastic means creating less new plastic, which is definitely a good thing, especially as it's usually made from fossil fuel hydrocarbon.
3. Recycling metals means there less need for risky, expensive and damaging mining and extraction of new metal ores.
4. Recycling glass reduces the need to use new raw materials like sand- it sounds hard to believe, but supplies of some types of sand are starting to get low around the world.
5. Climate change has already caused a population catastrophe in the animal kingdom because of the loss of forests that destroys natural habitats, recycling protects ecosystems and wildlife and reduces the harmful disruption and damage being done to the natural world, fewer forest cut down, rivers diverted, wild animals harmed or

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- displaced, and less pollution of water, soil and air.
6. Through recycling less energy is required for making products from recovered materials instead of raw materials. For example, Titanium and lead have an extremely high recycling rate of over 90%. Copper and cobalt have high rates of recycling around 75%. Only about half of aluminum is recycled. (United Nations Environment Programme, 2021). Making paper from pulped recycled paper uses 40% less energy than making it from virgin wood fibers.
 7. Recycling reduces Carbon dioxide and other greenhouse gases being emitted into the atmosphere as it uses less energy on sourcing and processing new raw material, it produces lower carbon emissions. It also keeps potentially methane releasing waste out of landfill sites.
 8. Recycling food waste and green waste is a great idea too, often generating lots of valuable compost that can be used to grow more food and other crops. It also helps to create jobs in the recycling and manufacturing industries.

This is exactly what recycling does. It claims that energy is saved and fewer items are deposited into landfills and protecting the environment from contamination and creation of greenhouse effects but looking at broader perspective recycling has little or no changes when environmental degradation is considered. Recycling isn't really the ultimate solution to pollution and waste management as it uses large amounts of energy, is expensive and can be hazardous to people and the environment if not done properly. The environmental effect of converting polymers to monomers and back to polymers has negative thermodynamic influence on the environment much as landfills have a negative influence. According to Organization for Economic Co-operation and Development (OECD) report less than 10% of the plastic used across the world is recycled, while 19% was incinerated and almost 50% went to sanitary landfills and remaining 22% was disposed of in uncontrolled dumpsites, burned in open pits or leaked into the environment (OECD, 2022) ^[6]. Furthermore, plastics can only be recycled a limited number of times as it degrades each time it is reused, meaning it can't be reused more than once or twice and if not processed well, releases VOCs, volatile organic compound when they melt, that pose a risk to both human health and environment (Geyer *et al.*, 2017) ^[2]. Another disadvantage of recycling is that the quality of the material produced is often not as good as products created from raw materials.

Recycling has long been promoted as a sustainable waste-management strategy, but current levels of trash generation have grown to unsustainable rates. In fact, waste over generation is predicted to accelerate, and the rate of acceleration is projected to be much faster than solutions can be put into place (Barnett, 2023) ^[5]. The only way to truly benefit from recycling is to take plastic out of the picture. The plastic industry stop lying to the public about plastic recycling, it does not work, it never will work and no amount of false advertising will change that. In early 1989, some oil and gas companies began a quiet campaign to lobby almost 40 states to mandate the "chasing arrows" symbol appear on all plastic products, despite the fact that many items adorned with chasing arrows can't be recycled at all. Some environmentalists also supported the symbol, thinking it would help separate plastic but it's a misleading

or deceptive logo with some numbers or code (1 to 7) written inside it. The code is creating "unrealistic expectations" about how much plastic can actually be recycled. Only 1 and 2 numbers written with inside the logo are highly recyclable whereas 3 to 7 aren't profitable yet this product has recycle logo. So, the Environmental Protection Agency (EPA) recommended that the Federal Trade Commission to scrap the symbol and move those numbers inside a triangle and chasing arrows can appear on those plastic packaging only if the maker of the packaging has proven that it can be easily recyclable (Sullivan, 2020) ^[7].

Most people agree that recycling has significant benefits; even it isn't a perfect solution to our environmental problems. Though it can be a bit of an inconvenience, recycling has empowered households and business to feel like they are doing something to make their community and their country a more ecofriendly place. Recycling is a word loaded with meaning, and one that evokes sometimes drastically diverse opinions and responses from different people. While the actual definition and process of recycling is relatively straightforward, there is often a lot of contention surrounding overall effectiveness and whether it's the best solution for managing waste. So, we really need to be a lot more intentional with the goods we consume and the action we take, we should always remember the popular phrase "Reduce – Reuse – Recycle" that is already in the correct order, the three R's by which actions are most effective. First, reduce waste habit of using less stuff. Second, reuse instead of buying something new. Third, Recycle waste (Lienig *et al.*, 2017) ^[3]. Reducing waste generation is far more sustainable than managing waste after it has been created. That's because if you consume fewer items you are doing more for environment than if you consume more and then recycle what you can and it also takes more energy to manufacture products from recycled materials. Additionally, there can be inconsistency in recycling policies and enforcement across regions. Varying regulation and a lack of standardised practices make it difficult for business and individual to navigate recycling requirements. This lack of uniformity can hinder progress in establishing effective recycling systems.

Conclusion

Recycling is hard, due to issue with contamination. Recycling is not always easy or efficient, as some materials are contaminated, mixed, or difficult to separate and process and much of the difficulty inherent in recycling comes from the fact that most products are not designed with recycling in mind. While recycling diverts waste from entering directly into landfill sites, current recycling misses the dispersive components. Complete recycling is impossible from a practical standpoint as highly dispersed wastes become so diluted that the energy needed for their recovery becomes increasingly excessive. The "three r" policy (reduce, reuse, recycle) was proposed for waste minimization. This is also known as tackling "at source" than adopting "end-of-pipe" approach. Taking into consideration the method of disposal even before purchase (life-cycle thinking) of any item will help in selecting less wasteful materials (green purchasing). Simply, reducing waste is far better for the planet than recycling so it is not a silver bullet as we think.

References

1. Andrew E. Why is recycling so confusing? You can blame big oil. September 2020.
2. Geyer R, Jambeck JR, Law KL. Production, use, and fate of all plastics ever made. July 2017.
3. Lienig J, Bruemmer H. Recycling requirement and design for environmental compliance. In: Fundamentals of Electronic System Design, c2017. p. 193-218.
4. Hess L. Pros and cons of recycling. September 2024.
5. Barnett M. A harmful bias towards recycling over reduction and reuse. July 2023.
6. Organisation for Economic Co-operation and Development. Global plastic outlook. February 2022.
7. Sullivan L. How big oil misled the public into believing plastic would be recycled. NPR's Planet Money. September 2020.
8. Duong T. The myth about recycling plastic? It works. September 2020.
9. Villalba G, Segarra M, Fernandez AI, Chimenos JM, Espiell F. A proposal for quantifying the recyclability of materials. *Resour Conserv Recycl.* 2002;37(1):39-53.