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## Can the Natural Products Industry Combat Climate Change?

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### ABSTRACT

Doing your part to help conserve the environment? Here's how promoting the natural products industry can help combat climate change.

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### Introduction

As its name implies, natural products are those that are derived from nature rather than manufactured by industrial processes. The history of natural products runs simultaneously with human history as humans had to rely on nature for essential materials like wood, milk, silk, and coal for sustenance, fuel, and shelter. It was, in fact, our research into natural products that led to advancements in fields like organic chemistry, allowing us to synthesize similar materials that exhibit the properties of their natural counterparts.

Recently, the field has made a comeback with more and more people shifting towards sustainable living and looking for avenues that help the environment. Here's how the natural products industry may help combat climate change.

### Bioplastics and Reusable Bags

You must be aware of the fact that single-use plastics used for manufacturing packaging, straws, and cutlery are one the most major contributors to pollution. However, most people don't know that plastics worsen the effects of climate change because of the vast amounts of fossil fuels required for their manufacture.

Bioplastics can substitute single-use plastics as they are derived from cellulose or starch-based plants. Cellulose and starch are naturally existing polymers that can be sourced from the leftover material of the agricultural and food industry. The net carbon output for producing and using bioplastics is lower than that of petrocarbons, making it a viable substitute.

### Biofuels

Our increasing reliance on fuel to power our industries and meet our energy demands is perhaps the most important factor

disrupting the carbon cycle. The U.S Department of Energy estimates a whopping 50% increase in global energy usage by 2050. This can only mean that copious amounts of carbon get pumped into the atmosphere leading to irreversible climate change.



**Figure 1.**

An image of a person holding a plant in their hand

That is unless we employ the use of natural products that act as biofuels to meet our energy demand. Biofuels like biodiesel are derived from oils extracted from plants. Crops grown specifically for this purpose help extract excess carbon from the environment while growing. The use and production of biodiesel

then offsets this amount, leading to an almost neutral carbon footprint. Additionally, the carbon output can be further reduced by recycling oils from the food industry, which would otherwise be thrown away.

Similarly, waste from wood, agriculture, and food processing industries can be used to make biomass briquettes for supplanting fuel for these industries, heating in our homes, and electricity generation.

### **Compost**

Crops farmed for consumption are natural products in themselves; however, the fertilizers and pesticides we use to nurture, grow, and protect them require a heavy reliance on fossil fuels as a source of hydrogen and energy, leading to a carbon-positive process. Furthermore, it doesn't highlight the amount of food being wasted. According to the National Resources Defense Council's report in 2017, in America alone, 40% of agricultural crops are wasted annually. This means that excessive deforestation for farmland may further exacerbate the already carbon positive process.

Recycling food waste and rebranding it as compost can help offset the carbon released in our environment. The compost acts as a natural fertilizer, enriching the soil with nitrogen. Though, this technique may not be as effective on large-scale farms where fertilizer requirements are far higher than those that can be fulfilled by collecting food waste. It is more suitable for urban settings where small community gardens are more prevalent.