

# The environmental impact of ultraprocessed food: harming the health of people and the planet



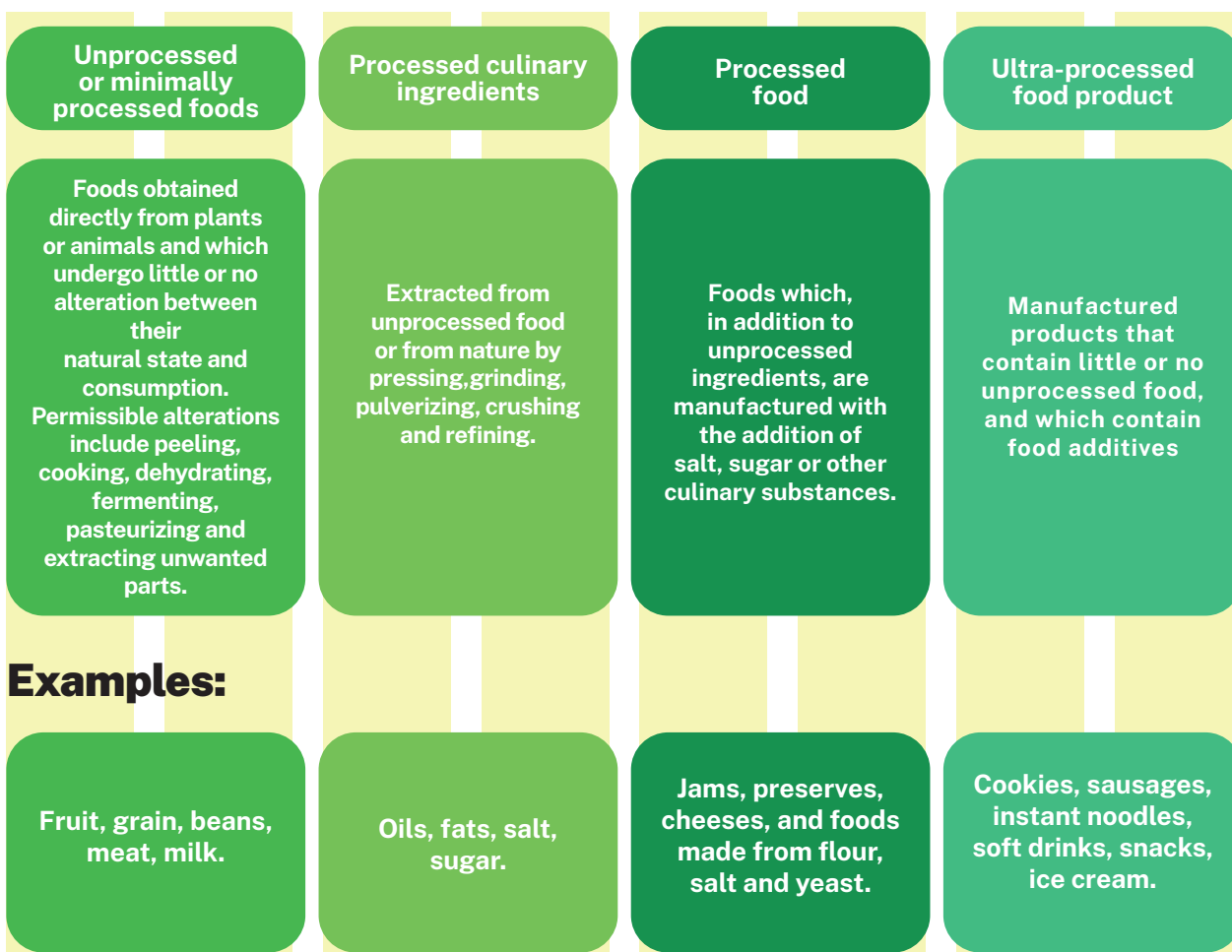
Have you ever stopped to think about the impact that ultra-processed food products have on the environment? In addition to damaging our health, these products contribute significantly to environmental degradation. In just three decades, ultra-processed food products have been responsible for an alarming increase in greenhouse gas emissions (245%), the water footprint (233%), and the ecological footprint (183%)<sup>1</sup>.

## But what are ultra-processed food products anyway?

According to the Nova classification, created by the Center for Epidemiological Research in Nutrition and Health - at the University of São Paulo (Nupens/USP), foods can be placed into four categories<sup>2</sup> depending on their purpose and level of processing. The ultra-processed food products consists of a category of foods made with food additives and with little or no natural food. They are loaded with colorings, flavorings, and a multitude of substances that you would not recognize in your home kitchen.



## NOVA classification:



### Ultra-processed food products harm human health

**Ministry of Health warning:** the problem of consuming ultra-processed food products is so great that, since 2014, the Ministry itself has message avoiding their consumption through the Food Guide for the Brazilian Population. In 2019, the Food Guide for Brazilian Children Under Two Years of Age advised against offering children these products during this stage of their life<sup>3</sup>.

**The filling in ultra-processed products foods:** these products contain high levels of sugars, fats and sodium, and, in general, have many food additives. Ultra-processed food products are filled with dyes, flavors, sweeteners, and stabilizers, as well as substances that appear on the label ingredient list that we do not use in our home kitchen. A recent survey revealed that 98.8% of ultra-proces-

sed food products sold in Brazil contained some cosmetic additive or excessive amounts of some health critical nutrient such as, sugars, sodium, total fat and saturated fat, from a list of almost 10,000 food items<sup>4</sup>.

#### Cosmetic additives? What are they?

It a class of additives to make the final product palatable or often hyper-palatable, and used only in the manufactures of ultra-processed food. They include flavorings, flavor, melting, salts, sweeteners, thickeners, and anti-foaming, blinding, carbonating, foaming, gelling, and coating agents. These additives disguise undesirable sensory properties created by ingredients, processes, or packaging

used in the manufacture of ultra-processed foods, or give the final product sensory properties that are particularly attractive to see, taste, smell and/or touch<sup>2</sup>

## It is impossible to eat just one.

Overconsumption of these products is made easier for a number of reasons:

1. Excessive advertising encourages excessive consumption.
2. Cheaper prices make them easier to buy, and they compete with a traditional diet based on rice, beans, vegetables, meat and fruit.
3. These foods are easy to consume at any time and place, because they are ready-to-eat or only need to be heated up quickly (ready-to-heat).
4. Recent studies show potential addictive behavior related to the consumption of ultra-processed foods<sup>5</sup>.
5. They are present in most retail food stores, especially in more peripheral and socially vulnerable neighborhoods in large Brazilian cities<sup>6,7</sup>.

**Ultra-processed food products are responsible for several diseases:** they increase the risk of weight gain and obesity<sup>8</sup>, type 2 diabetes<sup>9</sup>, high blood pressure<sup>10,11</sup> and cardiovascular diseases<sup>12</sup>, and are also associated with depression<sup>13</sup> and cognitive decline<sup>14</sup>. In Brazil, 57,000 deaths occur every year exclusively due to the consumption of ultra-processed food products<sup>15</sup>.

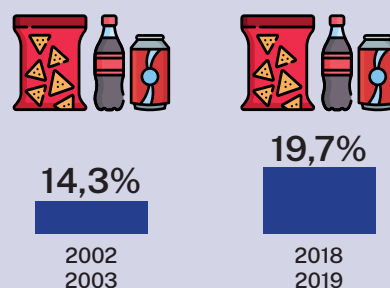
## Ultra-processed food products are also bad for the environment

In addition to their direct impact on health, such as increasing the risk of various diseases, ultra-processed products also leave a negative environmental footprint. Their excessive consumption is facilitated in various ways, from aggressive advertising to more affordable prices.

The share of ultra-processed food products on Brazilians' plates has increased over the last 20 years, from 14.3% of total calories daily consumed in 2002/2003 to 19.7% in 2018/2019<sup>16</sup>. This

change has been detrimental to the planet as the environmental impact of ultra-processed food products has grown in recent decades.

### Evolution of the share in ultra-processed food products in the Brazilian diet<sup>16</sup>



### 1. Trend of the environmental impact of ultra-processed food products between 1987 and 2018:





Greenhouse gas emissions increased by **245%** for ultra-processed food products. It is important to note that there was no change in emissions for

unprocessed or minimally processed foods, and there was an 18% decrease for processed culinary ingredients<sup>1</sup>.

The water footprint of ultra-processed food products increased by **233%**, but decreased by **17%** for processed culinary ingredients.

The ecological footprint increased by **183%** for ultra-processed food products, and decreased by **13%** for processed culinary ingredients.

**Currently, ultra-processed food products have a significant impact on the environment:**

<b>Contribution of ultra-processed products towards:</b>				
	Energy use	Biodiversity loss	Greenhouse gas emissions, land usage and food waste	Water usage
	17%-39%	26%-45%	Approximately 33%	Approximately 25%

Source: Systematic review produced by Anastasiou et al. (2020)<sup>17</sup>.

**2. Ultra-processed food products and damage to the diversity of edible plant species for human consumption**

**What's happening:**

**Reduction of global agricultural biodiversity:** there are approximately 6,000 species of plants that can be used to feed humans, but there are less than 200 species with significant global production<sup>18</sup>. Recently, monoculture has prevailed, with just nine food crops (sugar cane, corn, rice, wheat, potatoes, beans, palm oil, beet sugar and cassava) accounting for more than 66% of all global agricultural production<sup>19</sup>.

**The situation in Brazil:** in just ten years, traditional staple food crops such as rice and beans have had their production areas reduced by around 43% and 30%. The area used to produce soybeans, which are widely used in animal feed and as an ingredient in ultra-processed food products, increased by 69.9% during the same period<sup>20</sup>.

The replacement of traditional dietary patterns, based on a rich variety of unprocessed or minimally processed foods and freshly prepared home-cooked meals, for ultra-processed food pro-

ducts, together with their reduced price and ease of physical access, has led to the increasing consumption of ultra-processed food products, which in turn contributes to the loss of biodiversity. This is because these products are made with ingredients obtained from just a few high-yielding plant species, such as soy and corn<sup>21</sup>.

**3. Ultra-processed food products and the use of plastic**

**The world's largest plastic polluters are in the food chain**

Large transnationals in the food and beverage sector, such as Coca-Cola, Danone, Mars Incorporated, Mondelez International, Nestlé, PepsiCo, Perfetti Van Melle and Unilever, are among the world's largest plastic waste generators. Coca-Cola alone is responsible for producing around three million tons of plastic every year, making it the largest generator of plastic waste the world<sup>22</sup>.

**Plastic packaging for ultra-processed food products and health damages**

Phthalates and bisphenols are multifunctional

synthetic chemicals found in a wide range of industrial and consumer products. High molecular weight phthalates are used to make plastics flexible and durable, and bisphenols are used in epoxy resins and polycarbonate plastics<sup>23</sup>.

Bisphenol A is used in some plastic packaging for ultra-processed food products, and plays a negative role in cellular pathways related to weight and glucose homeostasis. Its intake has been associated with an increased risk of developing obesity<sup>24</sup> and various other chronic diseases<sup>25</sup>.



The consumption of ultra-processed food products has already been shown to be associated with a higher urinary concentration of bisphenols, phthalates and organophosphates, acting as endocrine disruptors<sup>26,27</sup>.

### What do Brazil and the planet need?

Ultra-processed food products are at the heart of the so-called “globalized diet” and have become dominant when it comes to the global food supply, with sales and consumption growing in all regions, and in almost all countries, but more rapidly in low- and middle-income countries<sup>28</sup>.

Healthy and sustainable diets should contain a variety of plant-based foods and low amounts of animal-based foods, refined grains, added sugar, and saturated and trans fats, reducing the harmful health effects of consuming ultra-processed food products.

According to the Food and Agriculture Organization of the United Nations (FAO), sustainable diets are:

“[...] diets with low environmental impact that contribute to food and nutrition security, and healthy lives for current and future generations. (...) “Sustainable diets protect and respect biodiversity and ecosystems, are culturally acceptable, economically fair and accessible, nutritionally adequate, safe, and healthy; optimizing natural and human resources.”<sup>29</sup>

**Regulating food environments is one possible way to reduce consumption of ultra-processed food products. Below are some solutions for protecting the population’s diet, supported by the main international organizations:**

**(a) Prices:** making ultra-processed food products more expensive, through fiscal measures, such as increasing taxes on these products, is a very cost-effective measure, that directs consumption towards healthier products, which should be cheaper. The tax reform approved by Brazilian National Congress and sanctioned by the Federal Government took an important step in this direction, by providing tax exemption for items from the Basic Food Basket, mostly unprocessed or minimally processed foods, and including an excise tax on sweetened sodas.

**(b) Information:** the packaging of ultra-processed food products currently has different advertising strategies that confuse the consumer about the real nutritional composition of that product. For this reason, the nutritional labeling of packaged foods has taken important steps in recent years in the country, with the improvement of the nutritional facts table, and the inclusion of Front-of-package nutritional labels (FOPNL) for foods high in sodium, saturated fat and added sugar<sup>32</sup>. It would facilitate for consumers to have a FOPNL for ultra-processed food products or the presence of additives.

**(c) Physical access:** regulating institutional spaces, such as schools and hospitals, is a path that has been explored, which reduces physical access

to ultra-processed food products, and especially protects vulnerable populations. Cities such as Rio de Janeiro<sup>32</sup> and Niterói<sup>33</sup> have adopted a ban on the sale of these products in school canteens, but this path needs to be taken nationwide.

### Taxing food according to carbon dioxide (CO<sub>2</sub>) emissions

A recent study<sup>30</sup> found that if a tax of £2.86 per ton of CO<sub>2</sub> was applied to every 100g of product with emissions, 300 deaths would be avoided, 18,900 kilotons of CO<sub>2</sub> emissions would be reduced, and £3 billion in revenue would be raised.

**(d) Advertising:** restricting the advertising of ultra-processed foods, especially to children, is a measure that needs to be more rigorously enforced, as already established in Resolution 163/2014 of the National Council for the Rights of Children and Adolescents (Conanda)<sup>34</sup>. In addition, the Consumer Defense Code (CDC) considers advertising aimed at children to be abusive, and thus illegal<sup>35</sup>. Advertising negatively interferes with this audience by encouraging excessive consumption of unhealthy options.

### The road to change

We need public policies that promote healthy and sustainable diets. This means prioritizing plant-based foods and reducing consumption of ultra-processed foods, which not only harm our health, but also the planet.

The Government has a duty to guarantee effective public policies to promote these diets. This is a responsibility when considering the rights to adequate food, healthcare, and an ecologically balanced environment, provided for in the Federal Constitution.

The solutions are within the reach of the authorities: from implementing tax measures to make ultra-processed foods less affordable, to regulating the advertising of these products, especially

to children. In addition, it is essential to invest in transparent nutritional labeling, and policies that restrict physical access to these foods in institutional spaces.

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