



## FEEDING THE WORLD WITH A CIRCULAR MODEL : NO WASTE, MORE GAIN

Today, more than half of all companies say they are committed to sustainable development, but it is becoming increasingly clear that reconciling environmental and economic performance involves many difficult choices. Only **21% of companies have a clear roadmap for implementing their sustainability strategies**. At **AFYREN**, we believe that sharing knowledge and experience can contribute to a more **sustainable future**. In our blog posts, we seek to share the expertise we have developed on our own journey toward a **sustainable, circular business model**.

In this overall objective, agriculture and the food industry have important roles, not only because they have to fulfill one of our basic needs, but also because their environmental footprints are meaningful. Globally, we use around **70% of freshwater** withdrawal for agriculture and **food is responsible for about 26% of greenhouse gas emissions**.

### Solving the food-waste problem

Earth's population soared past the 8 billion mark on Nov. 15th, 2022, according to [United Nations figures](#), up from an estimated 2.5 billion people in 1950. For decades, the food industry broke through productivity barriers to meet demand, largely relying on mechanization, agrochemistry and deforestation.

This model is putting **enormous pressure on resources** and the **environment**. Food production can affect biodiversity and accounts for a **third of global greenhouse gas emissions**.

Climate change, meanwhile, is having a huge impact on farmers around the world.

In a 2021, [study published in Nature Climate Change](#), scientists demonstrated that **global farming productivity is 21% lower than it could have been without climate change**. As Ariel Ortiz-Bobea, associate professor at Cornell University and lead author of the [study](#) wrote :

"We find that climate change has basically wiped out about seven years of improvements in agricultural productivity over the past 60 years. It is equivalent to pressing the pause button on productivity growth back in 2013 and experiencing no improvements since then."

Recent shortages of cereals and cooking oils are a reminder that globalization has made every country's food supplies more sensitive to global market fluctuations, geopolitics, and commercial agreements. Tragically, while almost 3 people out of 10 are suffering from moderate to severe food insecurity<sup>1</sup>, **17% of global food production goes to waste** (931 million metric tons).

After a period of prosperity for developed countries, the time has come for **optimization** and **rationalization**. There is no more room for waste. And there are **options to reduce waste** and **build regenerative agriculture** that would increase the productivity of our resources while preserving them.

1. <https://www.fao.org/newsroom/detail/122-million-more-people-pushed-into-hunger-since-2019-due-to-multiple-crises--reveals-un-report/en>



# Food waste affects everyone

The carbon footprint of global food waste is shocking. Every country, company and household should focus on reducing it. **Between 8% and 10% of global greenhouse gas emissions are related to food that is not consumed**, according to a [2021 United Nations study](#). If food waste were a country, it would be the third-largest emitter.

AFYREN has had a **“no waste”** philosophy from the very beginning. The raw materials we use to replace petroleum-based feedstock in the production of our biobased chemicals are **co-products from sugar beet refining that we revalorize or “upcycle.”**

Our commitment to circularity goes beyond optimizing land use by re-using agricultural waste. **We built our first factory** near the sugar beet farms of eastern France and Germany **to reduce transport cost and emissions.**

We constantly consider ways we can improve our efforts to follow the main principles of a circular economy<sup>2</sup> :

- Eliminating waste and pollution
- Circulating products and materials (at their highest value)
- Regenerating nature

Our factory has a **closed water circuit** to cut waste, and the only product leftover from production is a **potassium-rich material** that [Terrial](#) blends in its sustainable fertilizers suitable for organic farming of sensitive crops like fruit trees, vegetables, and vineyards.

As global supply chains grapple with uncertainty around logistics, sourcing, traceability, and rising costs, **AFYREN's emphasis on local sourcing mitigates these inflationary challenges.**

## Helping food producers and consumers cut waste naturally

According to the 2021 [United Nations study](#), **61% of food waste happens at the household level**, particularly in families that are financially better off than most. Food producers can help consumers reduce food waste by improving conservation and taking this mission as a **shared responsibility**. The challenge is to **use products that extend shelf life with natural, high quality ingredients.**

AFYREN is actively participating in the effort to meet this challenge. For instance, under our [VITAFYREN™ brand](#), we offer **propionic acid for biobased calcium propionate and biobased acetic acid for calcium acetate** used by bakeries or meat processors to extend shelf-life and slow down mold development.

Propionic acid and its derivatives are very effective when it comes to increasing the shelf life of many foods. Like all of AFYREN's products, our propionic acid has the advantage of being a biobased, low carbon footprint alternative to the petroleum-derived versions that are prevalent on the marketplace.

By working both on our production process and on biobased solutions that help reduce waste, **AFYREN is committed to helping achieve the UN's Sustainable Development Goal 12** – to halve food waste and reduce food loss across the global supply chain by 2030.

2. <https://ellenmacarthurfoundation.org/topics/circular-economy-introduction/overview>

