

## CASE STUDY 3

# Tackling Food Loss and Waste

Drying technology turns otherwise-lost spinach into viable new products

One third of food produced is never consumed: this represents 8% of global GHG and a quarter of the water used in agriculture, as well as crop-land the size of China. Strong business, social and environmental drivers to tackle post-harvest loss and food waste include reducing nutritional loss across the key value chain stages from production to consumption, financial savings, resource use efficiency, higher

performance and contribution to climate targets, food availability and better returns on investments for actors involved.

WBCSD is collating this series of case studies to scale private-sector action that tackles food loss and waste through fostering more knowledge-sharing and peer-learning.

Case studies will be made available at [www.wbcscd.org](http://www.wbcscd.org)



### The context

IFF works with its customers to discover flavors and fragrances that can be used in a range of products – from food to personal care. The company prides itself on being a leader in circular design, creating regenerative products that are more renewable, biodegradable and made with alternative energy and minimal water.

Having already achieved three of its four 2020 eco-efficiency targets, it launched EcoEffective+, a series of environmental goals for science-based emission reductions, zero waste to landfill and water stewardship.

### Technology that extends shelf life

In 2017, IFF bought PowderPure, a company that has developed Infidri, a gentle infrared drying technology that can turn fruit and vegetables into a powdered form. Unlike traditional drying methods, the technology does not rely on intense heat or vacuum pressure to remove water. So, it can remove the water while retaining the nutrients, color and taste of the original produce, keeping the molecules intact.

Of course, Infidri extends food freshness while keeping products as close to nature as possible. And it has become a key technology in supporting IFF's mission to help customers reduce post-harvest loss and food waste.

### A focus on wasted spinach

While IFF has not set any specific targets for solving food loss, it does have a pipeline of potential pilot projects to explore what can be achieved.

One of these focused on spinach. A lot of spinach is not collected at farms, because although it was fine at harvest, it wasn't of sufficient quality to make it to the supermarket shelves. Instead, it is left on the ground and lost.

IFF worked with its partners to collect this spinach, dry it using its PowderPure technology, and turn it into nutrient-rich powdered spinach that could be sold.

### Benefits and results

During the pilot program, 400 metric tonnes of raw spinach was collected, processed and incorporated into various products. This created additional revenues of USD \$ 1.3 million.

As part of the program, the spinach farmer connected IFF to a company that wanted to use dried spinach for its range of nutritional beverage powders and snack bars. Crucially, the customer needed the vitamin K provided by the spinach.





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### Collaboration in action

The program was a truly cross-departmental effort, with the procurement, quality, planning and sales teams working together. IFF needed to establish how it would collect huge quantities of spinach on a regular basis, store it and process it quickly and efficiently.

Converting the spinach that would otherwise be wasted was a commercial opportunity, but it also presented numerous challenges. For example, some of the spinach collected had stems which makes it harder to purée. This required unanticipated extra work, as well as an increase in costs and inefficiencies.

### Lessons learned

Transportation is a real challenge for making the most of the non-portable Infidri technology. But the company expects demand for up cycled food products to grow fast. "More manufacturers are looking at what they have and asking, 'how can I get into this, contribute and make some money too'. That is increasing the conversations we are having," says Michael Hershkowitz, IFF's Global Director for Product Sustainability.

This shift in thinking present other challenges too; when processing material as a result of post-harvest loss, farmers generally sell produce cheaply or give it away for free. That could well change once farmers can see the potential revenue opportunities associated with their 'waste'.

### Next steps

IFF is now committed to increasing the number of pilot programs designed to tackle food loss and waste. It has set non-public, internal targets that has helped to create a pipeline of options. "It requires focus. These are not easy projects and they take a different approach to our standard innovation projects," says Lucinda Salinas, PowderPure's Director of Business Development. "The food system is not coordinated so it is hard to do these things alone. We need commitment from other places."

### WBCSD

WBCSD is a global, CEO-led organization of over 200 leading businesses working together to accelerate the transition to a sustainable world.

We help make our member companies more successful and sustainable by focusing on the maximum positive impact for shareholders, the environment and societies.

Our member companies come from all business sectors and all major economies, representing a combined revenue of more than USD \$8.5 trillion and with 19 million employees.

Our Global Network of almost 70 national business councils gives our members unparalleled reach across the globe. WBCSD is uniquely positioned to work with member companies along and across value chains to deliver high-impact business solutions to the most challenging sustainability issues.

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