



How *LIFE* contributes to a resilient and future-proof food system

LIFE is experienced in helping green Europe's food system. This know-how is vital as today's system is impacted by and a driver of climate change. It also causes resource scarcity, pollution, waste, environmental degradation, biodiversity loss, and malnutrition. Through over 200 environment and climate projects, the LIFE Programme is helping make the transition to a food system that is fair, sustainable, healthy and environmentally friendly – key components of the EU's Farm to Fork Strategy.

Issues



- ▶ Water and air pollution, loss of wildlife and natural habitats, resource scarcity, and waste partially come from unsustainable food production.

The food industry provides over 44 million jobs in the EU but has not improved its footprint.



- ▶ Food systems are failing to mitigate and adapt to climate change.

Despite rising global incomes and more food production, malnutrition and overnutrition are rampant.



Solutions



- ▶ Improving agricultural practices to reduce water, fertiliser and pesticide use while increasing carbon sinks.

Developing a resilient food system through improved crops and better production methods.



- ▶ Adopting circular economy practices in the food processing and fishing industries.

Implementing better monitoring and measuring practices to increase consumer awareness.



- ▶ Including local government, farmers and consumers to improve diets and find food waste solutions.

Donation, recovery, and redistribution to address the current imbalances in food consumption.



LIFE's focus

LIFE has co-funded over 200 projects to help fix our food systems. The total EU funding stands at around €540 million.

LIFE has demonstrated innovative solutions and methodologies on:

- more sustainable food and fisheries production
- increased food resilience and robustness
- better food processing and distribution
- more healthy and sustainable diets
- enhancing the circular economy approach to improve quality of life
- converting food waste into other more valuable products.

Examples of *Life* fixing our food system

Transforming beer dregs into high-value ingredients



The beer sector tends not to reuse one of its most essential by-products – brewers' spent yeast or BSY. Despite brimming with protein and nutrients, BSY spoils quickly. It is usually sold to farmers as wet animal feed or disposed of as waste.

Results

- **LIFE YEAST** converted remnants of beer waste into high-value ingredients for use in the beverage, nutrition and cosmetics sectors.
- The team produced and then treated BSY in the lab to obtain raw materials of high-added value. These included customised yeast extract and yeast cell walls.
- Tests show that using the yeast extract and yeast cell wall in the brewing process increased the speed of beer fermentation.
- The customised yeast extract used in fermentation produced the same results as a commercial yeast extract.
- The team derived various food prototypes from the customised yeast extract. These included crackers, hot and cold beverages and even stock cubes.
- A Life Cycle Assessment showed that using customised yeast extract instead of commercial yeast in the brewing process would reduce emissions by up to 23% as less water and energy are used.

Changing people's perception of food waste

About 1.8 million tonnes of food waste is produced annually in Hungary. Of this, one-third comes from households, and nearly half of this waste could be avoided.

Results

- The **LIFE-FOODWASTEPREV** project changed attitudes toward food waste in Hungary, leading to a 4% reduction in such waste generated by the country's households.
- The team's food waste prevention campaign for adult consumers reached around 100 million people.
- The primary school programme on food waste prevention involved 300 000 students.
- The team published four professional guides on collecting food waste in the catering, retail and food sectors.
- They monitored the campaign's impact by measuring food waste generated in Hungarian households.
- Their approach was replicated in Hungary's national food waste prevention programme.

Find out the real value of one bottle of ketchup.

Cultivation { Agricultural land • Irrigation water • Seeds • Fertilisers • Pesticides • Working hours • Electricity → **Transportation**

Transportation { Freight • Means of transportation • Working hours ← **Processing** { Washing water • Working hours • Electricity

Processing → **Trade** { Electricity • Working hours → **Households**

Trade { Electricity • Working hours → **Households**

If you throw out **the food**, all the invested effort will end up **in the bin.**

How to store leftovers

TYPE OF DISH	RECOMMENDED TIME INTERVAL FOR THE STORAGE OF DIFFERENT DISHES	REMARKS
Breads	2-3 days	
Roast beef	2-3 days	
Cooked meat	2-3 days	
Roast chicken	2-3 days	
Roast pork	2-3 days	
Stews	2-3 days	
Stews and dishes with vegetables	2-3 days	
Pasta with sauce	1-2 days	
Cooked pasta (dry)	2-3 days	
Rice	2-3 days	
Sandwiches	1-2 days	
Hard-boiled eggs	2-3 days	
Dishes with eggs	2-3 days	
Dishes with ham, chicken, veal	2-3 days	
Cheese and pies	1-2 days	
Cakes and pies	1-2 days	
Milk, yoghurt	1-2 days	



A new market for ugly fruit and vegetables



Photo: LIFE14 ENV/PT/000817

A lot of people only buy perfect-looking fruit and vegetables. This has resulted in just 70% of this produce going to market while the rest is discarded. Overall, one million tonnes of food are wasted every year in Portugal.

Results

- The **Flaw4Life** project team worked with farmers, delivery points, volunteers, and students to **change consumption habits**.
- They created an alternative market for fruit and vegetables that were too small, too large, or too ugly to sell in regular outlets.
- Their work has reduced food waste by more than 2 300 tonnes to date, comparable to the annual amount of unused food from 13 000 people.
- Flaw4Life was crucial in developing Portugal's national strategy to fight food waste.
- The team also set up a network to cut food waste, and the approach is being used as far afield as the Netherlands, the United States, and Brazil.



Photo: LIFE18 ENV/DE/000011/Natalie Färber

Making protein from flies

By 2050, the demand for animal protein will be 75% higher than in 2007 due to population growth and more meat consumption. This could lead to a lack of feed for livestock. But insects can fill the gap as their protein is a resource-efficient, sustainable and green feed alternative. And it can replace fish and soy meal production, which damages our seas and biodiversity.

Results

- **LIFE Waste2Protein** uses organic residues from supermarkets as a resource to **produce insect protein from black soldier flies**.
- The production process has far fewer greenhouse gas emissions by using insect protein.
- It follows the circular economy concept, as there is zero waste.
- The approach protects biodiversity as it produces sustainable proteins. And there is less pesticide and land use.
- The team has already set up its first industrial insect factory and aims to expand globally.
- The project coordinator madebyme won the Dealflow.eu 'Best EU-backed sustainable start-ups' award for its work on LIFE Waste2Protein.



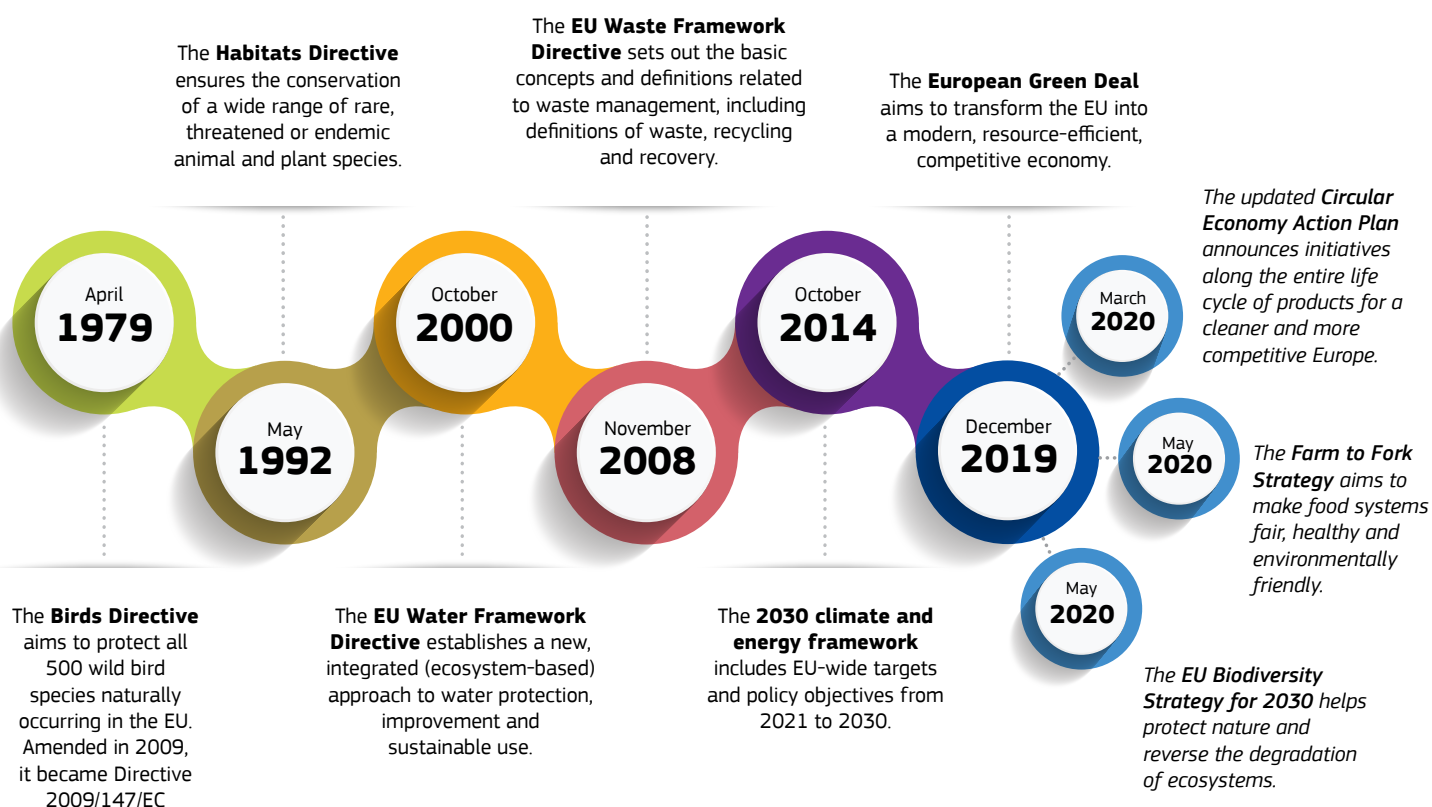
Photo: LIFE18 ENV/DE/000011/Natalie Färber







Photo: LIFE18 ENV/DE/000011/Christoph Boeckheler

Timeline: EU policy action

EU policy aims to transform the food system and ensure everyone has enough affordable, nutritious food to lead a healthy life. The result should be a resilient food system that is fit for the future, benefiting people's health, our climate, and the environment. See a selection of the most relevant EU policies below.



Learn more

ec.europa.eu/life  LIFE programme  lifeprogramme
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How to apply for LIFE funding

The European Commission organises annual calls for proposals. Full details are available at ec.europa.eu/life

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