Exploring the circular economy in the dairy sector
A bird’s-eye view of the circular dairy economy

Optimizing manure use
- Soil enrichment
- Digestion into biogas
- Dehydration into organic pelleted fertilizer (digestate)

Sustainable milk processing
- Heating and operations on green energy
- Water reuse
- Minimal food waste thanks to optimized byproduct use
- Biogas transport

Feed ingredients
- Grass and corn (92%) from a farmer’s own land or from the region
- Concentrates (8%), incl. corn, beets and byproducts from the food industry (20%)

From Dutch soil
- Grass grows on 14% of our country’s land
- Cows turn grass into nutritional protein

Food industry

Sustainable energy production
- Wind energy
- Solar panels
- Heat recovery from milk

Food security
Milk and dairy products contribute to healthy diets around the world.

Less food waste
Tips for consumers

N = nitrogen
P = phosphorus
K = potassium

The Life Cycle Tool optimizes mineral use.
The PBL Netherlands Environmental Assessment Agency identifies three conditions for a circular food system in its report “Food for the circular economy”: sustainable management of natural resources, limited food waste, and optimized use of byproducts.

The Dutch dairy sector has relied on a circular food system to some degree for many years. For example, cows in the Netherlands often graze on lands that are not suited for agriculture. Cows can turn grass, which is indigestible for humans, into milk – thus providing us with a delicious food product rich in protein.

Optimized byproduct streams have been introduced in the dairy sector in recent years. Take whey, for example. Whey is a co-product of the manufacture of cheese. It was once used as an ingredient in animal feed, but today it has become an important component in a range of consumer products.

This brochure illustrates the many key elements of the circular economy already found in the dairy sector. But plenty of challenges still lie ahead. We look forward to working with other stakeholders to tackle these together.