

Reducing Water Consumption by 35% through Reuse in the Dairy Products Production Process

The production of dairy products releases 1 litre of waste water per litre of milk processed. On a Dutch dairy farm, these huge quantities of waste water have been cut by 35% thanks to a LIFE project. Both the producer and the environment benefit from such a project.

The idea

While 88% of a glass of milk is in fact water, the water content of dairy products, for example cheese (42%), is much lower. In most cases the production of dairy products therefore generates water that is discarded, both wasting a diminishing natural resource and incurring extra costs for its disposal. The cooling processes involved in dairy production also discard significant quantities of water, thus exacerbating the problem. In the Dutch dairy industry, however, a LIFE project has focused on **reusing this waste water**.



The process

In traditional dairy industries, **1 litre of waste water is discharged** per litre of milk used in the process. In order to reuse this large amount of water, water present in milk is filtered off in the production of cheese whey. It is then treated and upgraded to process water. The **LIFE project** has designed a method for **extracting the water** and a system for **managing the water process**, ensuring the extracted water meets the required standard for reuse.

The benefits for the producer

Benefits from such a project are not only the water savings but also energy savings and, consequently, cost savings.

- **Water savings:** 60% of the previously discarded water can be reused in the production process.
- **Energy savings:** As the reused water is not pumped, large amounts of energy are saved.
- **Cost savings:** Overall, the saved resources lead to annual cost savings of at least €550 000 per year.

The benefits for the environment

In addition to the benefits for the dairy farmer, this project **also benefits the environment**. By reducing the need for freshwater, the **use of ground-water and drinking water is significantly reduced** (by 275 million litres per year). This is of great importance in the light of the Water Framework Directive.

Finally, the reduced energy requirements result in a **7.8 thousand tonne reduction in CO₂**.

Water Framework Directive 2000/60/EC

The objective of this Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater, in order to:

- prevent and reduce pollution
- promote sustainable water use
- protect the aquatic environment
- improve the status of aquatic ecosystems
- mitigate the effects of floods and droughts

For more information click [here](#).

Sources:

- European Commission “Best LIFE-Environment Projects 2005-2006” [report](#).
- DOC Kaas, website: <http://www.dockaas.nl>