





Sustainability is an important issue. A commonly used definition is that development is sustainable if it meets the needs of the present generation without limiting the opportunities of future generations.⁽¹⁾

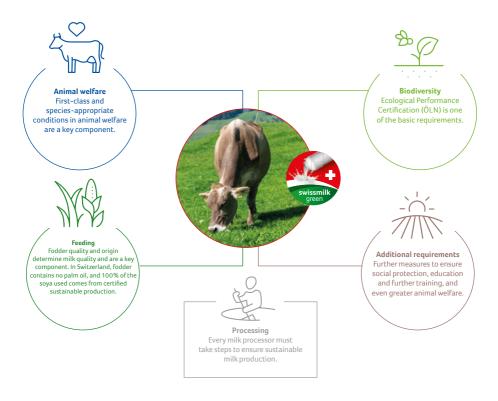
Sustainability encompasses various dimensions and is influenced by many factors. In most cases, it is made up of ecological, economic and social aspects. For us milk producers, animal welfare is also of great importance, which is why our sustainability consists of four dimensions.

The challenge of feeding an ever-growing world population with limited arable land is great. Giving all four dimensions equal consideration will lead to conflicting goals. A measure may be ecologically beneficial, but not economically or socially compatible. Or it may serve animal welfare but not ecology.

Despite these challenges, our milk producers do their best every day to supply the population with high-quality food. Swiss milk production has excellent conditions with 80% of grassland used for agriculture. Dairy cows are part of agriculture and are indispensable for the utilisation of this Swiss grass. In addition, grassland has important ecological functions, such as promoting soil fertility and biodiversity, storing carbon and water, and protecting against erosion.

As the Swiss dairy industry is committed to sustainable milk production, it introduced the "Sustainable Swiss Milk" industry standard in 2019. This production standard includes specifications for animal welfare, feeding, the environment and social aspects. As from January 2024, the entire milk volume produced must meet these requirements, and the standard is to be further developed. This cross-sector standard only works thanks to the cooperation of the entire value chain, from producers to processors and retailers to consumers.

Many producers are already taking responsibility by implementing environmentally and climate-friendly production methods and biodiversity-promoting measures or by investing in renewable energies. Our milk producers are committed to sustainable milk production on a daily basis, because all life on earth has an impact on our environment and our climate.



Goal: All Swiss milk meets the industry standard.

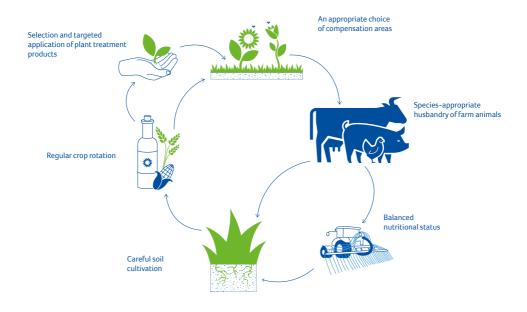


The "Sustainable Swiss Milk" industry standard has been in force since September 2019. With these requirements, the Swiss dairy industry is strengthening its pioneering role in terms of animal welfare, natural feeding, organic production and economic and social performance – living sustainability in all dimensions!

Ten basic requirements and two out of eight additional requirements must be met. Products made from milk that meet all the necessary requirements can be awarded the "swissmilk green" label.⁽²⁾

A detailed description of the "Sustainable Swiss Milk" industry standard can be found at:

swissmilkgreen.com



98% of the milk producers produce in compliance with ecological performance certification (ÖLN).

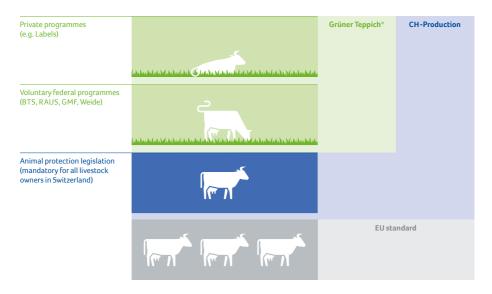
Milk producers care about the environment.

Switzerland's topography is suited to small-scale cultivation of arable and green areas, which is beneficial for ecosystem diversity. Agriculture depends on ecosystem maintenance and promotion. This is ensured thanks to the Swiss production standard Ecological Performance Certification (ÖLN).

98% of Swiss dairy farms meet this standard by keeping at least 7% organic, non-intensively managed compensation areas and by relying on species-appropriate livestock management, a suitable fertiliser balance, regulated crop rotation and careful soil cultivation.⁽⁴⁾

To guarantee additional ecological requirements in agriculture, the requirements of the Ecological Performance Certification will be expanded as from 2023. (6)

FEDERAL PROGRAMMES AND ANIMAL WELFARE



^{*} Requirements for compliance with Grüner Teppich /

Switzerland is a model for dairy cow husbandry.

Our milk producers form strong bonds with their animals, which explains why each cow is given its own name. Most family-run farms in Switzerland have an average of 29 dairy cows. (6) In neighbouring countries, herd sizes are on average twice as large. In Denmark the average is even 180 cows. (7)

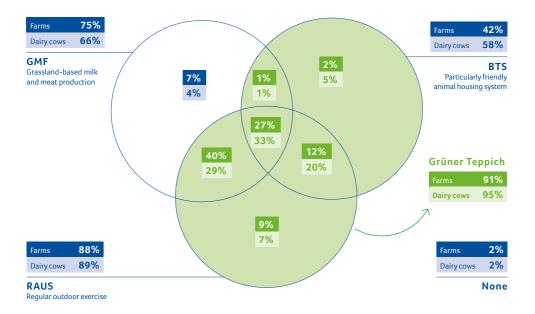
But what sets Swiss livestock farming apart? Animal welfare in Switzerland is based on a threestep principle.

- Switzerland has one of the world's strictest animal welfare legislations, which regulates the keeping of farm animals in detailed, practical terms.⁽⁸⁾
- 2. On this basis, voluntary federal programmes promote higher requirements than the legislation: BTS (particularly animal-friendly housing systems), GMF (grassland-based milk and meat production), RAUS (regular outdoor exercise) and Weidebeitrag (particularly high exercise and grazing requirements). (9)

 Brand programmes and labels impose specific, additional animal welfare requirements.
 In addition, many farms voluntarily implement measures for greater cow comfort.

Animal welfare is a priority in Switzerland.

[&]quot;Sustainable Swiss Milk" industry standard on p. 2



95% of dairy cows benefit from at least one of the federal animal welfare programmes **BTS** or **RAUS**.

One of the biggest differentiators from abroad in terms of animal welfare are the government programmes RAUS, BTS and GMF.

RAUS ensures that cows enjoy at least 26 days of outdoor exercise per month from the beginning of May to the end of October and at least 13 days per month from the beginning of November to the end of April.⁽¹⁰⁾ 89% of Swiss cows benefit from this programme.⁽¹¹⁾ A comparative European study shows that Swiss cows have 2 to 8 times more outdoor space.⁽¹²⁾

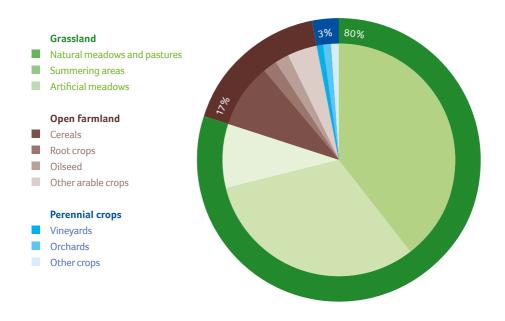
The milk producers implement the best possible husbandry system. 42% of the farms participate in the federal programme "Particularly animal-friendly husbandry systems (BTS)". These are loose-housing barns with opportunities for rest, exercise and occupation, featuring ample daylight. (13)

The GMF programme focuses on the efficient use of meadow and pasture fodder for milk and meat

production. Farms receive a contribution if they cover their fodder requirements mainly with grass, hay, aftergrass, and grass silage. (14)

The "Sustainable Swiss Milk" industry standard requires compliance with BTS or RAUS, a factor which has helped to steadily increase participation in recent years.

Participation in the voluntary animal welfare programmes is steadily increasing.



80% of agricultural land is grassland.

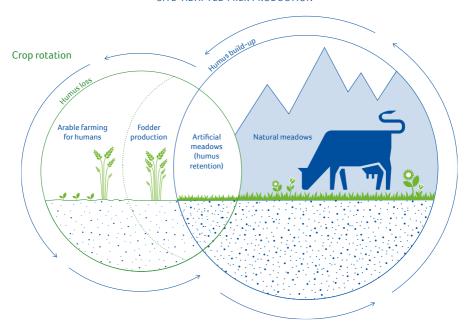
Grassland is ecologically valuable.

Switzerland has optimal conditions for grassland. If you look at the agricultural area and add the summering areas, grassland accounts for some 80%. (15) This provides an ideal basis for keeping ruminants, which can convert the grass into milk and meat.

The permanent meadows and pastures as well as summering areas also have important ecological functions. For example, they serve as key infiltration areas for rain and surface water, offer protection against erosion thanks to good rooting and feature a high level of biodiversity. (16) Due to climatic conditions, topography and soil composition, these areas cannot normally be used for arable farming, and are thus not directly fit for human use.

Swiss grassland seed mixtures are world leaders in terms of quality, disease resistance and yield. (17)

SITE-ADAPTED MILK PRODUCTION



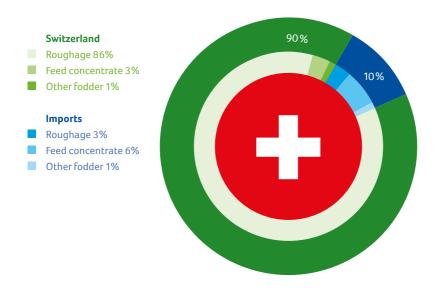
Dairy cows benefit from **30%** artificial pastures on open farmland

Artificial meadows have important ecological functions.

Dairy cows benefit not only from the high proportion of grassland, but also from the crop rotation areas in Swiss arable farming.

To promote soil fertility, consistent crop rotation must be maintained in arable and vegetable farming. (18,19) This necessarily includes artificial and mown meadows, which are indispensable due to their ecological advantages. Grasslands on open arable land are accordingly valuable and do not compete for land with human nutrition. Cows also have the capacity to turn these grasslands into valuable products like milk and meat, which benefits humans in turn. (20)

39% of open arable land is dedicated to direct human food production and 30% of land is covered by artificial and mown meadows. The remaining 29% of open arable land is used for livestock feed production. (21) For cattle, reliance on feed concentrates and thus the use of this open arable land is significantly smaller compared to other livestock. (22)



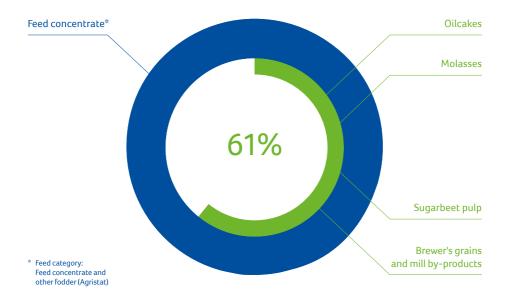
Around **90%** of the fodder for our cows comes from Switzerland.

Compared to other countries, Swiss milk producers use very little feed concentrates.

Our dairy cows are fed 90% domestic fodder. (23) This primarily consists of roughage like grass, hay, silage and maize, which is abundantly available in Switzerland. We cover a good four-fifths of our cows' daily feed requirements with high-quality domestic roughage. A cow can eat about 70 to 140 kilograms of native meadow forage per day, and 15 to 25 kilograms of hay in winter. (24)

Thanks to the high quality of the basic fodder, Swiss milk producers use very little feed concentrates compared to other countries – barely 100 grams per kilogram of milk as compared to well over 200 grams in Germany and the Netherlands, for example. (25)

Swiss dairy cows only eat feed that is free of both palm oil⁽²⁶⁾, and animal meal.⁽²⁷⁾ This, as well as the use of sustainably produced soy, is guaranteed with the "Sustainable Swiss Milk" industry standard.⁽²⁶⁾



61% of feed concentrate is a by-product of food production .⁽²⁸⁾

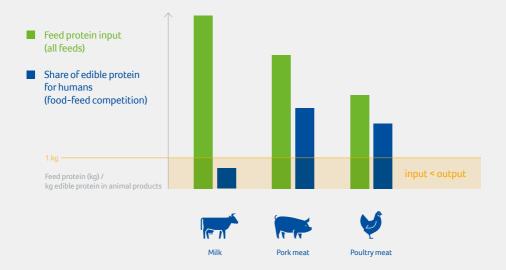
What is considered waste in food production is valuable feed concentrate for dairy cows.

By-products from food processing that are inedible for humans still contain plenty of valuable energy and nutrients. To prevent waste, these are fed to livestock. Such energy-rich waste is registered as feed concentrates. (29) They not only help to close cycles but are also important to ensure balanced feeding for our cows.

The cows eat food production by-products such as oil cake (soya and rapeseed extraction meal), molasses, sugar beet pulp, brewer's grains and mill by-products.

In this way, about 305,000 tonnes of waste can be indirectly used by humans and nutrient cycles are closed.⁽²⁸⁾

This not only produces milk and dairy products that are rich in nutrients and enjoyable to drink, but also makes a major contribution to reducing food waste. (29)



Dairy cows have the **highest protein efficiency** of farm animals. (30)

Cows turn inferior resources into valuable protein.

The ability of dairy cows to convert forage resources from grassland and food by-products into high-value products is becoming increasingly important for the food security/protein sufficiency of the world's population. (30) No other animal converts resources that are not usable for humans into valuable food in such an efficient and resource-conserving way. The total of 1.2 million hectares of grassland provides an ideal basis for dairy cows in Switzerland. (31)

Compared to other farm animals, our dairy cows can turn their forage into valuable food with little input. Because cows are roughage eaters, they also require very little feed that would be edible for us humans. For 1 kilogram of milk protein, only 0.71 kilogram of edible protein are fed to humans. Edible protein makes up only 13% of the total protein available in the feed for dairy cows, as compared to 70% for poultry, for example. Our dairy cows therefore have the best protein efficiency compared to other farm animals (30)

In Switzerland, only

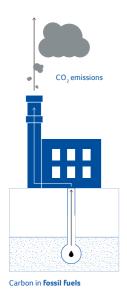
of surface and groundwater is used for agriculture, compared to almost 70% worldwide.

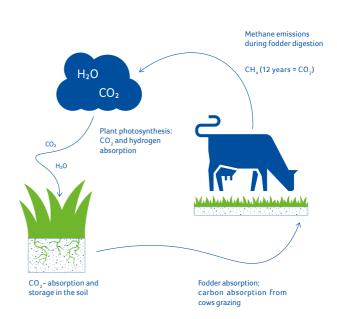
Switzerland has large water resources, and agriculture also uses them sparingly. Only 8% of "blue" water (surface and groundwater) is used for agriculture in our country, as compared to almost 70% worldwide. (32,33)

Climate change will lead to more regional and temporally limited droughts. On an annual basis, however, there is enough water available in Switzerland. ⁽³⁴⁾ Nevertheless, our milk producers will face challenges over the years to come and will have to adapt their management to the changing climate conditions.

Thanks to an average of 1200 mm of precipitation per year ("green" water), 98% of the total Swiss agricultural area is irrigated exclusively with rainwater. This water is part of the natural cycle and is absorbed by grass and plants. These natural conditions, plenty of grass and sufficient water, are ideal for dairy farming. (32.35)

Dairy farming in Switzerland, a water-rich country, is particularly site-adapted.





Unlike fossil fuel emissions, cow emissions are part of an ecological cycle.

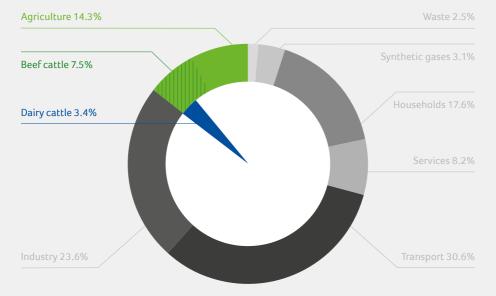
The digestive emissions of dairy cows should not be equated with fossil emissions. After all, dairy cows produce nutrient-rich food and thus contribute to feeding the population. (36)

The carbon cycle using the example of cows' digestive emissions:

Cows emit methane when digesting their basic fodder. This natural process can only be influenced to a limited extent. The methane emitted by cows decomposes into CO_2 and hydrogen after 12 years. (37) Through photosynthesis, plants reabsorb the CO_2 from the atmosphere and return the carbon (C) to the soil. (36) A part remains bound as humus (carbon sink), while the other part is emitted back into the atmosphere through harvesting, the eating of cows or the death of the plant. The cycle starts all over again. (38) By looking at the cycle, it becomes clear that cows' digestive emissions are unfairly criticised.

When assessing agricultural emissions, cows should not be considered in isolation, but rather as part of a whole farm. A dairy farm that is site-adapted ensures that emissions and carbon sinks function in a cycle. Dairy cattle are part of an ecological cycle.

Fossil fuels remain in the atmosphere for centuries.



Digestive emissions from dairy cattle account for 3.4% of Switzerland's greenhouse gas emissions.

Cows are not climate killers.

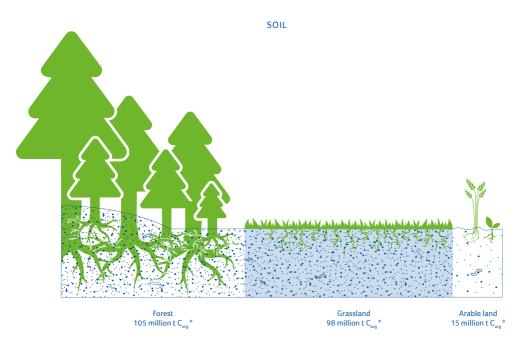
All life on earth is fundamentally associated with the production of greenhouse gas emissions. According to the currently used calculation methods, a total of 45.3 million tonnes of CO₂ are emitted in Switzerland per year. (39)

Transport accounts for the largest share with 30.6%, followed by industry with 23.6% and households with 17.6%. Swiss agriculture is responsible for 14.3%.⁽³⁹⁾ In dairy production, emissions are caused by manure management, feedstuffs and the digestion of ruminants.⁽⁴⁰⁾

The digestive emissions of cattle generate 7.5% of Switzerland's greenhouse gas emissions. Dairy cows (incl. young cattle) contribute 3.4% to total emissions. (39,41)

Other existing calculation methods, which show lower emissions for cows, are currently being discussed in research. (42)

The dairy cow population of 500 000 cows on average is decreasing annually.⁽⁴³⁾



^{*} organic carbon: measure of organic matter comprising all living and dead biomass.

Switzerland's grasslands store over **98 million tonnes** of organic carbon.*

More than a third of Switzerland's total area is covered with grasslands. $^{(44)}$

The vast grassland areas, which mainly serve as fodder for dairy cows, also have a high potential for carbon storage. Meadows and pastures store a total of 98 million tonnes of organic carbon (storage capacity of 80 tonnes $C_{\rm org}/ha$), about the same storage capacity as Swiss forests. Although arable soil also has a carbon storage capacity, it is lower than grassland and forest (50 tonnes $C_{\rm org}/ha$). (45)

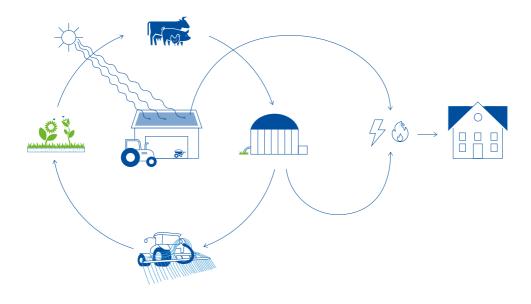
The longer the organic carbon is stored in the soil, the more positive the effect on the climate. For the amount of organic carbon to remain stored, the humus content must be maintained. (46)

If humus is built up, agricultural land even contributes to lower circulating CO₂. (47)

Farmers can use different management practices to boost carbon storage, such as intercropping, optimised crop rotation, artificial grassland or soil conservation farming. Soil carbon sequestration is a continuous process that is

largely dependent on soil texture (carbon to clay ratio), management and land cover. (46)

Grasslands have a particularly high CO₂ sequestration potential.



Agriculture is making headway: in just seven years, solar electricity production has increased **28-fold**.

Agriculture's direct energy demand can be broken down as follows: 36% for fuels, 32% for fossil fuels and 24% for electricity. (48) Fuels are mainly used for agricultural machinery. The electrification of these machines, and thus the possibility of switching to renewable energy, is under development but not yet ready for mass rollout.

Fossil fuels are used in the form of fuel oil and gas, with greenhouse heating accounting for the largest share. $^{(48)}$

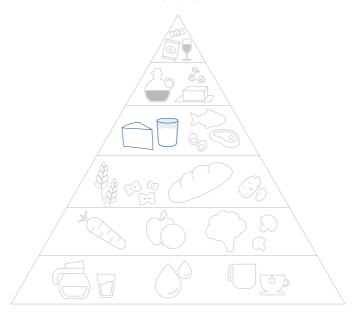
Electricity is consumed for drying hay, milking or cooling milk, among other things. (48) Farms have large roof areas that are suitable for electricity production with photovoltaics and heat production from solar thermal systems. The usable potential of renewable energies that can be obtained from Swiss agriculture for energy production is estimated at 2100 GWh/year for electricity and 1300 GWh/year for heat. (49) Agricultural electricity production from solar energy and biomass has increased steadily, especially in recent years. Between 2010 and 2017, it

increased 28-fold from solar energy and almost three-fold from biomass. (50)

A biogas plant can help to close energy cycles, reduce the burden of bio-waste disposal and improve farmyard manure management. (51)

Agriculture has great potential for the production of green energy.

NUTRITION



Implementing the food pyramid recommendations could reduce the environmental impact of food by **50%**. (52)

Milk and dairy products are part of a healthy and sustainable diet.

The Swiss Society for Nutrition recommends 3 portions of milk and dairy products per day. 1 portion corresponds to 2 dl of milk or 150-200 g of dairy products or 30-60 g of cheese. Animal foods complement the plant base of the food pyramid and are also correct and important in a sustainable diet. (53) Evaluations show that we currently consume on average only 2 portions of the recommended 3 portions of milk and dairy products daily. (54)

Milk and dairy products contain many important nutrients. They contribute a significant proportion of the daily requirement of proteins of high nutritional quality and are excellent providers of minerals such as calcium and vitamins. (55)

We also make our diets more sustainable by ensuring that the products we consume are locally and seasonally produced, and by avoiding food waste as much as possible. [56]





^{*} CH soy is not widespread

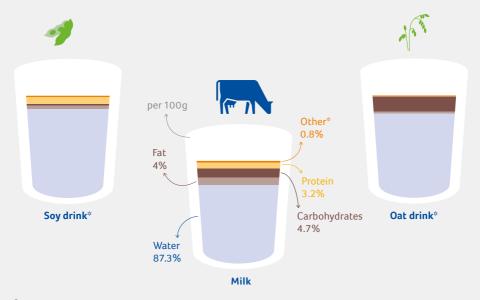
When compared by **protein content**, oat and soy drinks have a greater environmental impact than Swiss milk.

A comparison of environmental impact by protein content shows that milk is a good choice.

Our diet accounts for 30% of our ecological footprint⁽⁵⁷⁾, because all food has an environmental impact. This also applies to plant-based drinks and milk.

The nutrients in a food and the bioavailability of these nutrients are central to a healthy and balanced diet. Accordingly, these are also important indicators when calculating the environmental impact of a product. When comparing different products, the unit is therefore crucial. The results turn out differently when milk and plant drinks are compared per litre or per protein content, for example. Studies have shown that milk performs well when nutrients are included in the assessment of environmental impact. (58)

In comparing milk with vegetable drinks, it is therefore important to take into account a wide range of criteria (including protein content, kilocalories, calcium, nutrient density etc.). [58,59,60)



^{*} not enriched

When it comes to **nutrients**, Swiss milk clearly outperforms soy and oat drinks.

The nutrients in plant-based drinks cannot replace those in milk. (61)

In terms of the amount of nutrients, their naturalness and bioavailability (absorption and processing in the body), milk has clear advantages compared to plant-based alternatives. Even if the plant-based drinks are fortified, they do not come close to milk in terms of nutrient composition. (62)

Milk proteins meet a large share of the daily requirement for high-quality protein. (62) The protein quality of milk compares favourably with that of plant-based drinks. (63) In addition, milk is a key source of calcium, whereas plant-based drinks naturally contain very little to no calcium. (64)

Replacing milk completely with plant-based drinks without adjusting the overall diet could lead to nutrient deficiencies in the long term. ⁽⁶²⁾

^{*} contains vitamins and mineral nutrients

SOCIAL ASPECTS



Different areas influence personal quality of life.

Sustainability encompasses various aspects. In addition to ecology and economic efficiency, the social dimension is also of great importance. After all, it is people who are behind milk production, namely the producers with their families and employees.

A high quality of life for milk producers and their families is essential for the future of sustainable milk production in Switzerland. Quality of life includes areas of life such as health, financial status and the social environment. In addition to objective criteria like income or working hours, subjective criteria like satisfaction and a sense of purpose also play an important role when people assess their own quality of life. (65)

Social sustainability is a key concern for Swiss milk producers, which is why a self-check on quality of life was developed in a first step together with the HAFL University of Agricultural, Forest and Food Sciences. The questionnaire is intended to encourage people to reflect on their own situation.

There is little meaningful data and information on social sustainability in Swiss agriculture. For this reason, it is all the more significant that quality of life is now being taken up as a topic and is becoming major component in the implementation of sustainability.

Quality of life is key for good future prospects in dairy production.



































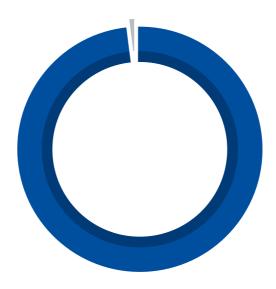
A global issue: Good nutrition and thus good agriculture are integral parts of the **UN** goals.

Swiss agriculture operates under many national, but also international framework conditions.

Under the Paris Climate Agreement of 2015, global warming is to be limited to 1.5 degrees above pre-industrial times. (66) In the same year, the 2030 Agenda was adopted along with the Sustainable Development Goals (SDGs), which are to be achieved by 2030 by all UN Member States. Switzerland and non-state actors are called upon to implement the goals nationally and to make an active contribution to sustainable development. (67.68)

Swiss milk producers are thus influenced by international framework conditions while remaining an active part of the international dairy industry. They are key members of bodies such as the International Dairy Federation (IDF) and the European Milk Forum (EMF), which focus on knowledge-sharing, common standards, progress and innovation.

For example, the IDF 2022 developed and updated global standards and methodologies for calculating the footprint of milk production: "The IDF global carbon footprint standard for the dairy sector". (69)



In 2022, **99,99%** samples were germ-free, an outstanding performance compared to other countries.⁽⁷⁰⁾

Strict controls guarantee high-quality and safe milk and dairy products.

Our Swiss milk is free of residues and additives. If sick animals are treated with medication, weaning and blocking periods apply during which their milk may not be used for consumption. (71) In addition, neither hormones nor antibiotics may be administered in our country to boost performance.

We are known worldwide for the quality and safety of our food. In terms of holistic process control, the relevant requirements are monitored and checked by the responsible bodies, from animal husbandry and milk testing to hygiene in the processing plants.⁽⁷⁰⁾

Facts



#1
No one eats 300 g of broccoli per

meal to get enough calcium, but

180 g of yoghurt does the trick.

Science shows that increasing the consumption of milk and dairy products can reduce the rate of heart attacks.

#2

#5

If I'm lactose-intolerant, I don't have to give up dairy products.

Milk is important for bone formation and bone strength.

#3

#6

Milk is a natural food without additives.

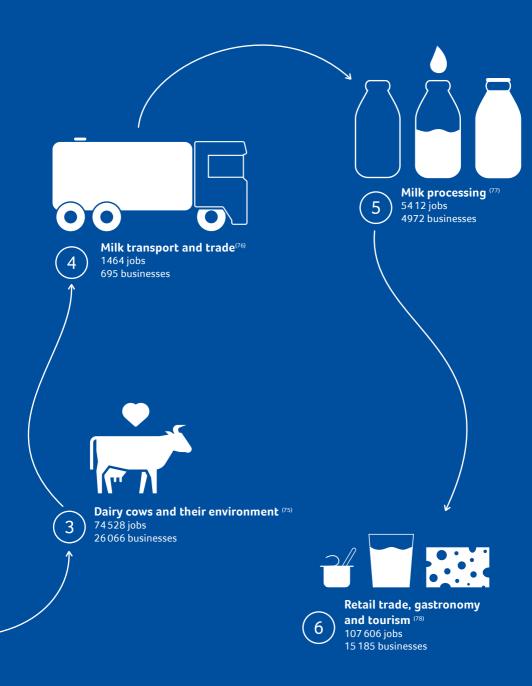
Milk consumption can reduce the risk of colon cancer.



Click here for more milk myths and answers. (72)

The value chain surrounding Swiss milk production creates many jobs and thus forms a major income source for many farming families as well as for professionals outside agriculture in the upstream and downstream sectors. In addition to milk production companies, milk processors and milk consumers and people from research, offices and the retail trade also work with milk. This value chain ensures that consumers can enjoy Switzerland's top products and have a balanced diet!





THE SWISS MILK VALUE CHAIN

Overview of value chain elements for the dairy industry

Sales in Swiss francs	Total	As a %	Dairy industry
Upstream services for agriculture / the dairy industry ⁷⁹	7 480 000 000	35	2618000000
Production output for agriculture / the dairy industry ⁷⁹	11 170 000 000	35	3 909 500 000
Cheese dairy milk services: Commercial cheese dairies without industrial cheese production 80	900 000 000	100	900 000 000
Services of the retail trade with foodstuffs 81	28 315 000 000	13	3 680 950 000

The number of milk producers is constantly decreasing.(82)

Total number of farms with dairy cows, with and without marketed milk production



The number of organic dairy farms is increasing nationwide from year to year. (83)

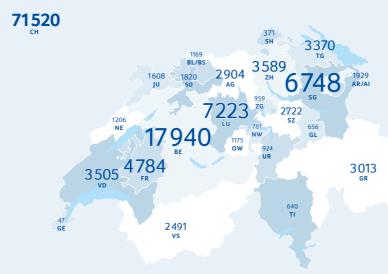
Share of organic dairy farms per canton as a percentage

9.9% Nationwide average



Even in the most remote areas, many people are employed on dairy farms. (84)

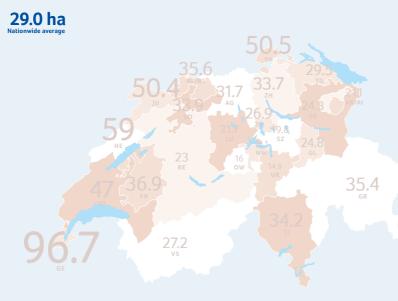
Share of workers on farms with and without marketed milk



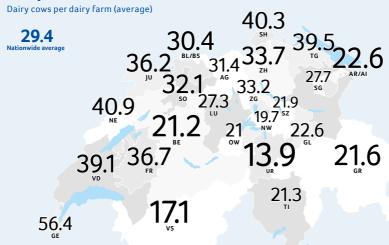
Milk is produced in all cantons.

Smaller farms are found in the mountains, larger ones on the plains.

Average agricultural area for all dairy farms, in hectares (85)



Switzerland is characterised by small family-run businesses, which guarantee optimum treatment of dairy cows. (86)



The quantities produced are small by European standards.

Farm managers are highly professional. (87)

Milk marketed per dairy farm and year in thousands of kilos



List of sources





Further publications:

Swiss dairy industry in figures 2023/24

Is milk harmful or is all that just a myth?

Market situation report

Milk price monitoring

Publisher: Schweizer Milchproduzenten SMP Laubeggstrasse 68 / CH-3006 Bern

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