

The FOUR PAWS Chocolate Challenge

A business benchmark on
dairy reduction strategies towards
animal welfare and climate action



Animal Welfare.
Worldwide.



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1 Introduction: Why chocolate?

Production standards of chocolate and some of its ingredients, such as cocoa and palm oil, have been under public scrutiny for quite some time. Milk that is used in the production of chocolate products, however, has not been in the public eye yet, despite dairy having grave impacts on factory-farmed animals, the environment, climate, and our health. The chocolate industry is non-transparent and does not disclose how much milk is sourced; however, it is estimated to be in the range of millions of tons of milk annually. This FOUR PAWS Atlas Challenge ranking on chocolate companies focusses on the welfare of cattle in the production chains of this industry, as well as on the contribution of the sourced dairy to the climate crisis. FOUR PAWS analysed the product portfolio, Corporate Social Responsibility (CSR) policies and marketing strategies of companies to see if the chocolate industry is aware of its impact and whether they have measures and goals in place to lower them.

Industrial farming of dairy cows goes hand in hand with practices that harm animal welfare, like zero-grazing, tethering, dehorning, disposal of male calves, and early cow-calf separation. Research shows that consumers are often not aware of this reality behind cow's milk and would like this to change once they know^{1,2}. The toll of milk production on the cattle in the dairy industry requires a thorough revision of our current societal, political, and moral decisions³.

The world's leading climate scientists have made clear that without reducing the climate impact of our food, halting the unfolding climate crisis and achieving the agreed climate goals will not be possible. Animal agriculture is one of the leading contributors of the world's greenhouse gas (GHG) emissions⁴

and dairy production is responsible for one third of all GHG emissions of livestock farming⁵. **According to some companies' calculations, dairy can be responsible for more than 40% of their carbon footprint^{6,7}.** One of the most effective climate actions is to reduce the amount of milk produced and shift to plant-based milk.

Dairy milk emits two to four times as many GHGs than plant-based milks, not to mention land use, freshwater use and eutrophication⁸.

The market for plant-based milk products has been skyrocketing over the last years, as for example the Smart Protein Plant-based Food Sector Report⁹ shows: Based on sales data in European countries from 2017–2020, it concludes growth figures of up to 226%. However, Europeans still consume more than two times as much dairy as the global average. Although the case for a transition to plant-based milk in food production is clear, OECD and FAO expect the global milk production to increase by 14.9% by 2031¹⁰.

Is the confectionary industry – specifically chocolate producers – leading the change to sustainable plant-based foods or does it continue business as usual, pushing for greater efficiency through higher productivity, often at the cost of the welfare of dairy cows? Since animal welfare and the need for climate action are relatively new issues for the chocolate industry, FOUR PAWS wants to know how the industry performs in regard to its responsibility to address the wellbeing of farm animals and the climate crisis. What is the reality behind a chocolate bar?



1.1 Dairy: The hidden animal welfare problem

Approximately 270 million dairy cows are kept worldwide¹¹, and their milk yield has increased enormously in recent decades due to adjustments in genetics, nutrition, and management. To achieve this very high level of performance, restrictions on animal health and welfare are accepted. About three quarters

Dairy cattle are at higher welfare risk than beef cattle, but despite this, dairy production is mistakenly perceived as more humane than beef production⁹.

of all cows fall ill, usually up to two times during one lactation period. Most often, the animals suffer from fertility disorders, mastitis, claw disorders as well as metabolic and digestive disorders¹².

To ensure the absolute minimum level of animal welfare, the following ten practices harming animal welfare, hereinafter referred to as harmful practices, need to be abolished:

- **Concentrate feeding:** After giving birth, high yielding cows develop an energy deficit due to the high milk yield, which is attempted to be compensated with concentrated feed. The unphysiological feeding disrupts the processes in the forestomachs and often leads to digestive disorders and pansenacidosis. Nevertheless, the compensation of the energy deficit does not take place, since the additional energy consumed is primarily used for milk production.
- **Use of high-performance breeds:** The massive increase in milk yield per cow in recent years can be attributed to the selection for milk production with a simultaneous reduction in muscle mass that has led to severe problems in health and longevity. Today, a dairy cow lives an average of five and a half years. Yet a cow is not fully grown until it is five years old.
- **Killing of surplus calves:** The male calves of these high-performance breeds are uneconomical for fattening due to the low amount of meat. In some countries, killing surplus calves is legal, in others they often perish through neglect.
- **Tethering:** Many dairy cattle worldwide are housed in tethering stalls, which means that the animals are tethered half or all year round. Essential behaviours such as locomotion, social and comfort behaviour can not be carried out.
- **Mutilations:** Various mutilations are routinely carried out in dairy farming. These include disbudding or dehorning, castration, and tail docking. All of these procedures are to a great

extent performed without anaesthesia and analgesia¹³. The animals are adapted to their confining environment to prevent injuries to each other and to employees, instead of adapting the environment to the animals' needs.

- **Transport of unweaned calves:** Unweaned calves that are still dependent on milk are transported cross-border over long distances at an age of 14-28 days only. The animals are extremely susceptible to disease at this age because their immune system is not yet mature. They require milk feed, which cannot be provided during the days of transport.
- **Transport of more than 8 hours:** Even for adult animals, being transported for more than 8 hours is extremely stressful. The longer a live animal transport lasts, the more it is compromising animal welfare.
- **Separation of calf and mother:** Separating the calf from the mother almost immediately after birth is a routine practice on dairy farms around the world¹⁴. Due to the lack of contact between the calf and the mother, behaviour disorders such as navel suckling occur as well as an increased susceptibility for diseases.
- **Isolation of young animals:** Most of the calves are individually housed during their first eight weeks after birth. However, essential social behaviour is not enabled due to early isolation and the animals may show signs of mental suffering that can also lead to physical impairment.
- **Prophylactic or metaphylactic use of antibiotics:** As an attempt to compensate for the above-mentioned deficiencies in livestock husbandry, a prophylactic or metaphylactic use of antibiotics is administered which causes antimicrobial resistance and makes infections increasingly difficult or impossible to treat.

These ten harmful practices and husbandry systems have one thing in common: They cause fear, pain, and distress, weaken the immune system, alter brain function and the animals' natural behaviour. Hence, why any acceptable husbandry system needs to exclude these.

More antibiotics are given to farm animals than to humans, accelerating antibiotic resistance in humans¹⁵.

However, high-welfare husbandry systems, in addition to excluding these ten harmful practices, must also meet the needs of the animals and promote positive mental states. For dairy cows this means:

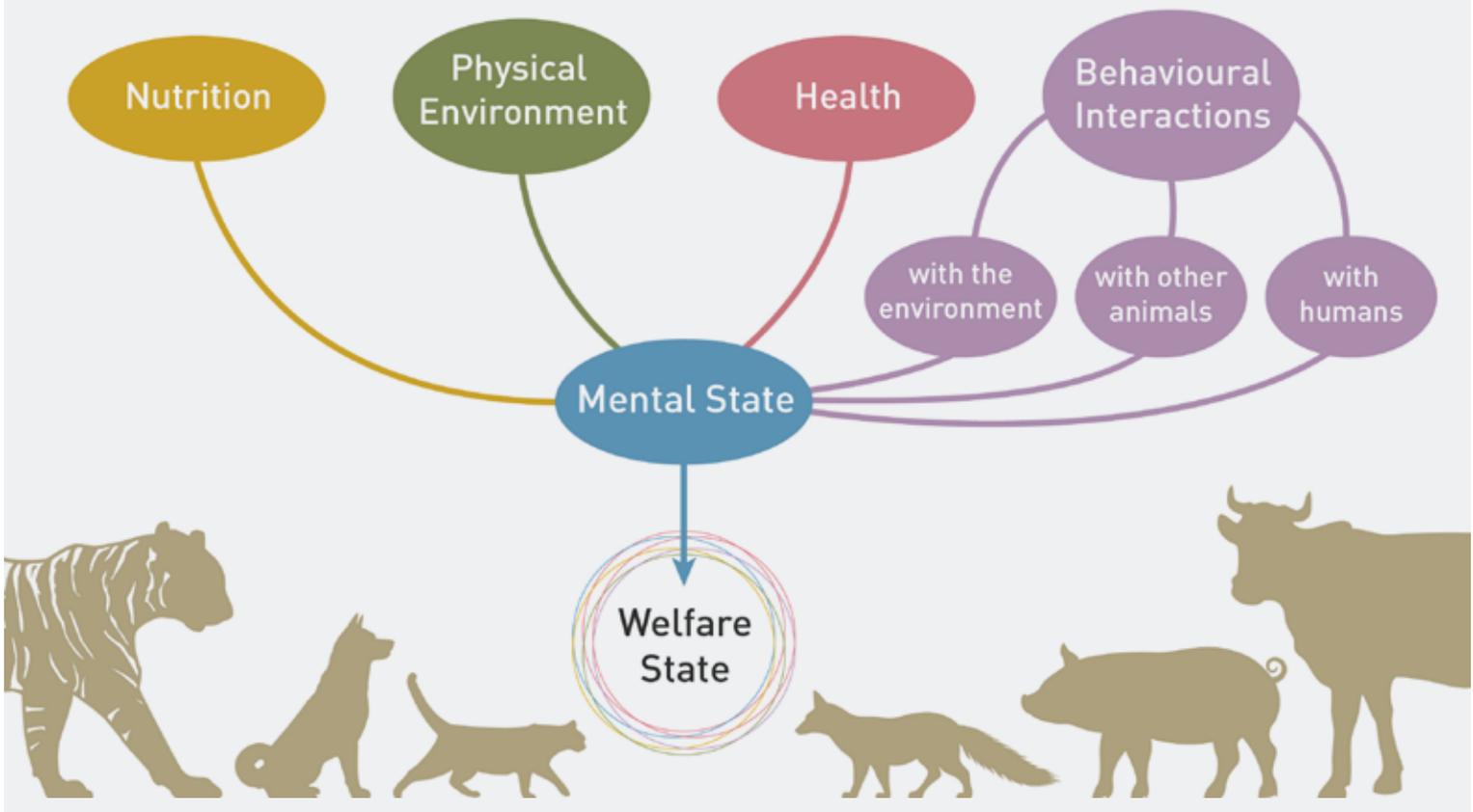
- mother-bonded rearing for at least three months
- longer intercalving periods, lower milk yield, and conversion to dual purpose breeds
- lifelong group husbandry
- upper limit for the number of dairy cattle kept per barn
- minimum space in the stable: 2 m² per 100 kg animal (of this, 50% must be available as a lying area and at least one lying place must be available for each animal in free stall barns), plus access to an outdoor run
- mandatory straw bedding that is dry, soft, and deformable
- paved, partially roofed outdoor area
- access to pasture (at least during the growing season)
- ensuring animal health and providing sick pens
- positive human-animal relation
- slaughtering of animals in the nearest suitable slaughterhouse

The previously known concept of the **Five Freedoms**, which focuses on preventing animals from having negative experiences (e.g. hunger, thirst, pain, fear), is outdated¹⁶. The knowledge about animal welfare has developed significantly in the last 30 years and has led to the **Five Domains Model**. It incorporates the understanding that mental experiences, whether negative or positive, are a reflection of an animal's internal states (e.g. dehydration leading to thirst; injury causing pain) or external circumstances (e.g. threat from attack leading to fear; presence of conspecifics leading to pleasures of being bonded). The Five Domains Model therefore focuses on identifying the internal and external conditions that give rise to mental experiences. The sum of all mental experiences represents the welfare status of an animal at a given time^{17,18}. The aim is to keep negative experiences as mild and as few as possible and to enable animals to also have positive experiences. To manage animal welfare well, a regular monitoring is essential¹⁹.

There are no animal welfare certifications for chocolate that are in accordance with high-welfare husbandry systems.

To measure husbandry systems, the Welfare Quality® assessment system, an EU funded project, was developed²⁰. Some dairy companies in Spain and Finland already implemented the Welfare Quality® assessment systems^{21,22}.

The Five Domains Model



1.2 Dairy's contribution to the climate crisis

1.2.1 Factory farming and the climate crisis

The climate crisis poses an existential threat because it undermines and damages life support systems. Flooding, heatwaves, melting glaciers, and crop failures are a few of the signs that our world's climate is changing dramatically. Halting the climate crisis is urgent. The world's leading climate scientists concluded that to remain within the limit of 1.5 °C of global heating, GHG emissions should peak in 2025 at the latest, and be almost halved by 2030²³. This ambition has been agreed by the world's political leaders in the Paris Agreement of 2015. However, the [United Nations Environment Programme \(UNEP\)](#) concluded that climate policies implemented by these governments by the end of 2020 will further increase emissions and cause global heating of 2.8 °C or more by 2100²⁴.

The science is clear about what needs to happen to stop the climate crisis: Major transitions in all economic sectors as well as consumption patterns are required to reduce harmful GHG emissions. Reforming food systems is key: **Up to one third of all manmade GHG emissions are caused by food systems**²⁵. **Between 14.5%⁵ and 16.5%²⁶ of all emissions originate from livestock farming alone.** Without reducing the emissions of food systems, achieving the agreed targets of the Paris Agreement is impossible, even if other sectors drastically cut emissions²⁷. However, neither governments nor industries take adequate action, and this needs to change.

Looking at the sources of GHG emissions in the livestock sector in detail, it is evident that the husbandry of cattle and other ruminants is problematic. Beef production is responsible for 40% of all emissions related to farm animals in Europe, dairy production for 37%²⁸. **On a global level, dairy production causes one third of all GHG emissions of livestock farming**⁵.

With 40%, food systems represent the biggest manmade source of methane, of which **meat and dairy production is the main culprit with an overall 32% of manmade methane emissions**²⁹. Enteric fermentation in the gut of ruminants such as cattle and anaerobic digestion of manure are the main causes of these emissions. This adds up to the urgency to cut emissions from food systems because methane (CH₄) is a very potent GHG that breaks down in the atmosphere after twelve years, unlike other GHGs that remain in the atmosphere for up to a thousand years. Therefore, reducing its emissions has a relatively fast impact, and these measures are easy and affordable to implement. Although the share of total emissions is relatively low, the [Intergovernmental Panel on Climate Change \(IPCC\)](#) estimates methane to account for almost a third of the warming observed to date³⁰. UNEP concludes that

cutting human-caused methane by 45% this decade would keep warming beneath a threshold agreed by world leaders, and that transitioning to healthy diets high in plants and low in meat and dairy is key in achieving this²⁹.

The global production of meat, fish from aquaculture, eggs, and dairy uses 83% of the world's agricultural land³¹.

Continued growth of consumption of animal-sourced products will increase the need for agricultural land to feed all these farm animals. Expansion of agricultural land at the cost of forests and other ecosystems – the world's carbon sinks – and the cultivation of feed are another major source of climate-harming emissions⁵. **Agricultural expansion is responsible for 88% of deforestation³² and 77% of the world's farmland is used to feed animals** – either by producing feed crops such as soya and maize, or as grazing land³³. At the same time, more and more researchers see another opportunity of changing to diets that are

The global food system is the primary driver of biodiversity loss with agriculture being a threat to 86% of the species at risk of extinction³⁶.

less dependent on animal-derived products: Decreasing the land used to grow animal feed will allow nature to restore on these lands and sequester carbon in rewilded areas. Sun et al.³⁴, for example, modelled the 'double climate dividend' of adopting the EAT Lancet Diet³⁵ in 54 rich countries and allowing nature to restore in the freed-up land. They conclude that this would capture as much carbon as caused by the entire global farming system over 14 years. Another study finds that the combined impact of swift reduction of meat consumption in combination with increased carbon sequestration on former agricultural land could in itself achieve half of the emission reductions needed to achieve the goals set by the Paris Agreement – limiting global warming well below 2 °C, preferably 1.5 °C²⁶.

Animal agriculture's global GHG emissions account for more than the direct emissions from the transport sector³⁷.

1.2.2 The chocolate industry and the climate crisis

Companies are responsible for the climate-harming emissions they cause in their production facilities and through transportation ([scope 1 and 2 emissions](#)) and for the emissions caused by the production of raw materials along their supply chain ([scope 3 emissions](#))³⁸. This is not only a moral responsibility, but increasingly jurisprudence shows that companies can be held accountable for the reduction of emissions in their whole supply chain^a.

^a See e.g. the court ruling in the case Milieudéfense et al. v. Royal Dutch Shell plc <http://climatecasechart.com/non-us-case/milieudéfense-et-al-v-royal-dutch-shell-plc/>

As previously mentioned, dairy production is a big source of GHG emissions and a large share of the climate footprint of chocolate producers is caused by the dairy they use. To align with the Paris Agreement, companies must decrease their dairy footprint. But what are the solutions they should implement when it comes to the milk they source?

Food manufacturers and other industries promote an approach of '**net zero**' or 'climate neutral production' in their climate action policies. The initiative 'Pathways to dairy net zero' – representing many companies and organisations, including important dairy companies – describe the most important principles of net zero. These include:

- reduction of GHG emissions by improving production and efficiency
- removing 'unavoidable' GHG from the atmosphere by carbon sequestration in soils and nature
- offsets/compensation through investments in reducing emissions in other sectors³⁹.

Although an approach based on net zero counting appears positive, it can also be misleading and outright harmful towards climate mitigation and animal welfare in the food production sector, depending on how companies choose to reach net zero. While, in principle, creating 'negative' emissions (e.g. by improved soil management or rewilding of abandoned farmland) sounds promising, the urgency of halting the unfolding climate crisis, the physical limitations of carbon sequestration, and the ineffectiveness of compensation underline the urgency to prioritize swift reduction of GHG emissions in food companies' climate policies. Without the transparency and clarity about the exact reduction of emissions, GHG removals from the atmosphere, and the amount of compensated emissions and methods used, it is virtually impossible to assess the level of ambition of the climate policies and the claimed 'climate neutrality'. 'Net zero' could then be an attempt at **greenwashing**. In this report, we look at the level of ambition of concrete emission reduction goals, and the timespan of concrete proposed measures, rather than compensation measures.

But what are the solutions for the avoidance and reduction of livestock related GHG emissions? There is huge climate mitigation potential in simply reducing animal-sourced products such as cow's milk²⁶. A comparison of cow's milk and plant-based milk shows that cow's milk emits roughly two to four times as many GHGs as plant-based milk⁸. **The land use for cow's milk is more than tenfold that of than plant-based milk^{8,31}**. Many assessments come to the conclusion that not only meat, but also dairy production and consumption should be drastically decreased to stay within planetary boundaries and requirements for healthy food and diets: The EAT Lancet reference diet advises to reduce ~50% of the dairy intake of the average European⁴⁰, and the assessment 'Less is more' by the Greenpeace Scientific Unit advises for a reduction of 50% of global animal-sourced product consumption⁴¹. Some

forerunners in the confectionary industry already show that replacing cow's milk with plant-based alternatives is feasible. The remaining cow-based milk in the production chain should drive a high level of animal welfare and planetary protection. Mitigating GHG emissions and developing farming that is more resilient to a changing climate is an opportunity to change to diverse food systems that enhance animal welfare and support nature and the planet.

Some examples of concrete measures that benefit both animals and the planet:

- **Cows should live free range, outside, eating grass.** Cows on meadows have higher welfare, being away from slatted floors, a lack of sufficiently comfortable floors and other bad health and welfare impacts such as claw diseases and lameness. This decreases the amount of slurry, methane, and ammonium produced in stables and the need for compound feed.
- **Primarily grass-fed cows** will decrease the need for feed production like soya, corn etc., which is a big source of emissions caused by land use and chemical fertilizers. Precondition is to move away from cow breeds, such as high yielding cows, that are overdependent on other protein and energy crops.
- **Lower stocking densities of cows** combined with a halt to the use of chemical fertilizers can support carbon sequestration and benefit biodiversity. Improved water management is needed in, for example, peat lands to avoid GHG emissions from soils.
- **Longer intercalving periods** will not only strengthen the health of dairy cows but also result in fewer calves, less suffering, and lower GHG emissions. Lower consumption (and thus production) of milk can allow cows and the climate this much needed relief.

Some examples of measures with negative outcomes that should be avoided:

- **Increased productivity of cows that can cause them to suffer.** Climate mitigation should move away from driving productivity per cow. Intensive farming of dairy cattle by increasing the kg of milk to make the emissions per kg go down is not effective climate mitigation and comes with a lot of animal suffering.
- **Breeding of specific cow breeds with a dominant focus of increasing productivity also increases suffering.** Climate mitigation measures should not drive further highly productive breeds, but rather encourage more resilient breeds that are healthier and less dependent on specific types of high protein feed.



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2 The FOUR PAWS Atlas Challenge

The FOUR PAWS Chocolate Challenge is part of the Atlas Challenge series; a business benchmark ranking the main players within the food industry sector. Its primary focus is on their sustainable business strategies, which push for the reduction of animal protein and GHG emissions and promote an increase of [vegan](#) products. It targets companies operating within Germany, Austria, and Switzerland (the DACH region), the Netherlands (NL), the United Kingdom (UK), the United States (US), and South Africa (ZA). The name 'Atlas' was inspired by the Atlas Titan in Greek mythology, who was responsible for bearing the weight of the world on his shoulders and who personified endurance. As such, the Atlas Challenge ranking is one which ranks the companies in the various food industry sectors on their current and future plans of being able to carry the responsibility towards a more sustainable world. What the Atlas Challenge entails is assessing the companies' CSR report (and/or policies), their product range, their marketing and promotional tactics, and their commitment and progress towards making positive

changes for factory-farmed animals, the environment, and the planet as a whole by implementing strategies towards animal-based protein reduction and the increase of vegan foods. With the first five rankings having had a focus on meat reduction, this year's Atlas Challenge shines the spotlight on dairy reduction.

After previous Atlas Challenge rankings (which were conducted on the food delivery services, food producers, fast-food chains within the quick service sector, international fast-food chains, and food retailers), FOUR PAWS analysed the performance of selected leading national and international chocolate companies present in the DACH region, UK, US, NL, and ZA.

By assessing the level of effort and progress from the chocolate industry, FOUR PAWS can show companies where they stand and encourage them to reassess their policies and goals to highlight and implement dairy reduction goals tied to high animal welfare standards and climate action objectives.

3 The Chocolate Challenge

3.1 Company selection

Between September 2022 and January 2023, FOUR PAWS assessed a total of 18 chocolate companies mostly present within DACH, NL, UK, US, and ZA.

Consumer-facing (parent) companies were ranked instead of the chocolate brands themselves, as it is the (parent) companies that usually have the CSR policies applicable to all of their brands.

The companies were chosen on the basis of availability, familiarity, and popularity of their chocolates (excluding products such as chocolate spreads, biscuits, and snacks) in each of those seven countries and, aside from national brands, also include global companies with the headquarters in other countries than those seven, specifically Carambar & Co from France that sells the UK Terry's Chocolate Orange, and Ferrero from Italy that sells its variety of chocolates globally.

The assessment was based on publicly available information online, on the input received from those who actively participated through the questionnaire that was sent out as well as further correspondence. Any changes that were implemented by the selected chocolate companies after the set research timeframe and the questionnaire return deadline were not considered in the ranking.

Each chocolate company was contacted periodically between November 2022 and January 2023, asking to take part in the Atlas Challenge by filling in a detailed questionnaire on their sustainable strategies towards an animal- and climate-friendly nutrition through dairy and GHG

emission reduction. In addition to the questionnaire, FOUR PAWS also sent the companies a commitment letter reflecting the FOUR PAWS demands to give them the opportunity to sign and play a leading role in the chocolate industry sector in promoting dairy reduction.

3.2 Commitment demands

FOUR PAWS expects action and progress from the chocolate companies committing to the following scope by 2027:

- defining, implementing, and reporting concrete strategies in the CSR report and/or separate policy to reduce dairy use, which includes a clear statement highlighting the benefits of dairy reduction for animal welfare, and to reduce greenhouse gas emissions from livestock;
- setting time-bound targets to phase out animal-derived ingredients from factory farming and support farmers to implement high-welfare husbandry systems;



- reducing the dairy content of its existing chocolate range and ensuring that the reduction of dairy is not compensated with an increase/replacement of (an) other animal-derived ingredient(s) or additive(s);
- introducing and/or expanding its current product range to include (more) vegan options, including a vegan counterpart to its most popular conventional chocolate product(s);
- promoting vegan alternatives through consumer awareness to highlight animal- and climate-friendly food through specific marketing tools.
- **Dairy reduction** – covers any goals or measures towards reducing dairy and replacing it with plant-based alternatives.

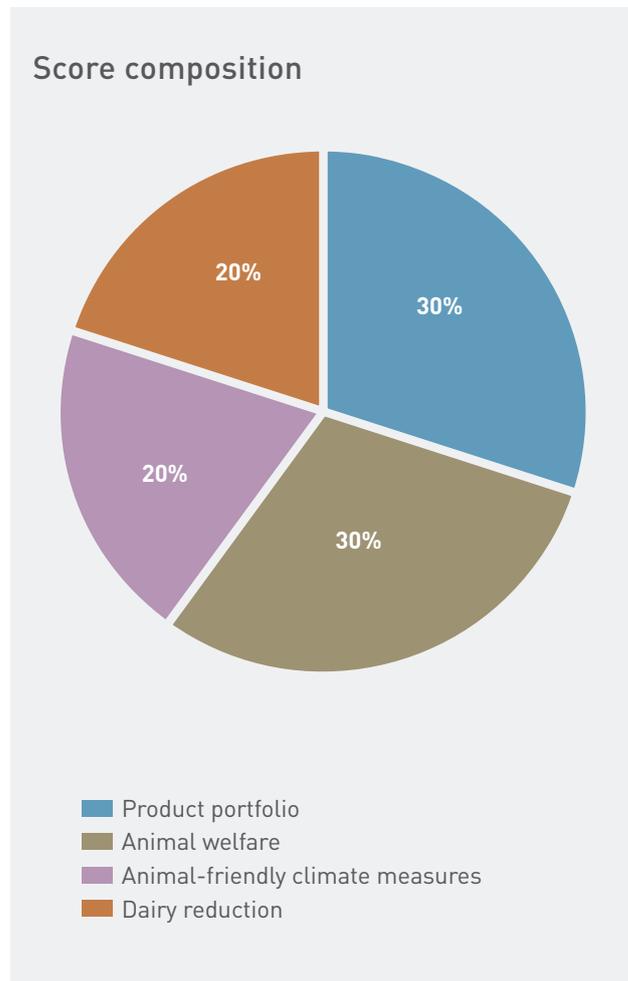
3.3 Questionnaire and scoring requirements

The questionnaire was composed of 19 questions in the order of CSR/Policy, Product portfolio, Marketing, and Future vision. 16 of the 19 questions were scored questions, and three were not-scored questions to acquire a better overall understanding of the chocolate companies' dairy use and opinion on dairy replacement.

The maximum score of 100 points equates to 100%. The scored questions were worth either 5 or 10 points. 10 points were given to the key questions, i.e. those supporting commitment letter demands, 5 to the rest. Most points were awarded on an all-or-nothing basis, with the exception of two questions with intermediary points, depending on how many of the multiple-choice answers were ticked.

The questionnaire was structured in the most convenient way for the respondent. For a more comprehensive presentation of the results, the scored questions of the questionnaire were thus rearranged into the four following thematic categories:

- **Product portfolio** – covers their current availability of vegan chocolate, including from precision fermentation, and their CSR and marketing strategies to increase the range and the demand;
- **Animal welfare** – covers their animal welfare policy on/working towards forbidding the ten harmful practices ([see 1.1 Dairy: The hidden animal welfare problem](#)) and supporting farmers in doing so;
- **Animal-friendly climate measures** – covers scope 3 climate goals linked to dairy, emission reduction measures that show they simultaneously consider animal welfare and any marketing that highlights the positive impact dairy-free products have both on animal welfare and the climate;



The assessment of the non-responsive chocolate companies, as well as those who explicitly stated they did not wish to take part, was solely based on research conducted by FOUR PAWS.

Throughout this report, icons illustrate whether a company:

-  answered the questionnaire
-  provided information via e-mail
-  rejected participation
-  or did not react at all.

This did not influence their scores but is highlighted to honour active participation of companies.

For the full questionnaire, inclusive of maximum scores and scoring requirements, please refer to [Annex 8.1](#).

3.4 Explanatory notes for legend of the result overview

In [chapter 4](#), the results will be displayed in a result overview for each thematic category to show at a glance how the chocolate companies performed regarding each question. A ✓ will mean they scored the points, and a ✘, ? or — will mean that they did not score any points. The number of ✓ does not necessarily correlate with the score, given the different weighting of each question as explained under [3.3 Questionnaire and scoring requirements](#).

Here is how to read the symbols explained in the legend:

- ✓ Yes
- ✘ No
- ? No (clear) information given / could be publicly found within the allocated research time
- Not applicable

✓ A yes was given in the following cases:

- The chocolate company participated and
 - answered 'yes' to the question and, where required, provided a relevant reference to support the claim, e.g. an excerpt from their CSR or one of their policies;
 - did either not answer the question or answered with 'no', but FOUR PAWS found relevant information during the online research and thus coordinated with the chocolate company to change their answer to a 'yes'.
- The chocolate company did not participate, but FOUR PAWS was able to find the relevant information during the online research timeframe.

✘ A no was given in the following cases:

- The chocolate company participated and
 - answered 'no' to the question, in line with what FOUR PAWS found / did not find during the online research;
 - answered 'yes' but did not provide a reference where necessary, or FOUR PAWS deemed the reference not sufficient/relevant.
- The chocolate company did not participate and
 - FOUR PAWS did not find any dairy-free chocolate products within the online research timeframe for the two questions on the availability of dairy-free chocolate;
 - FOUR PAWS did not find relevant information for the questions on marketing and on highlighting the positive impact of dairy-free products. This is because both questions would require a clear and open communication of the respective topics from the chocolate companies to their customers to receive a 'yes'.

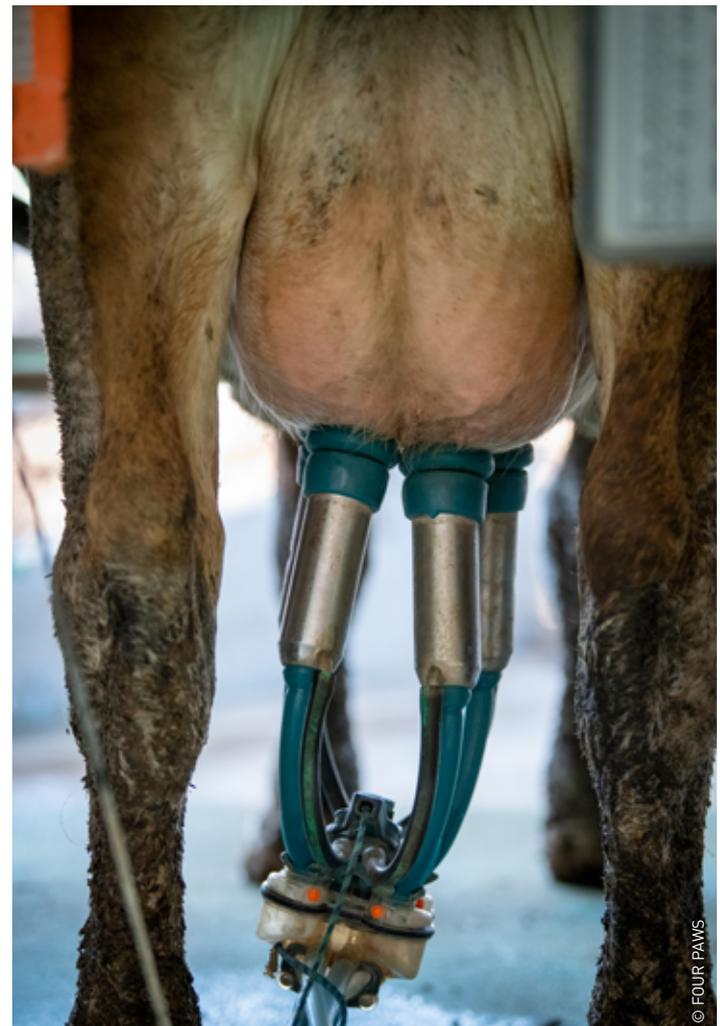
? A question mark was given in the following cases:

- The chocolate company did not participate, and FOUR PAWS could not find any or no clear information during the research timeframe, except for the four questions mentioned above, where a 'no' would be given.
- The chocolate company participated and
 - left the question unanswered;
 - gave an answer that did not fit the question;
 - could/did not, where required, provide a reference to support their chosen answer.

— A dash was given for 'does not apply' in the instance where the question depended on a 'yes' of the previous question that was given a 'no' or question mark.

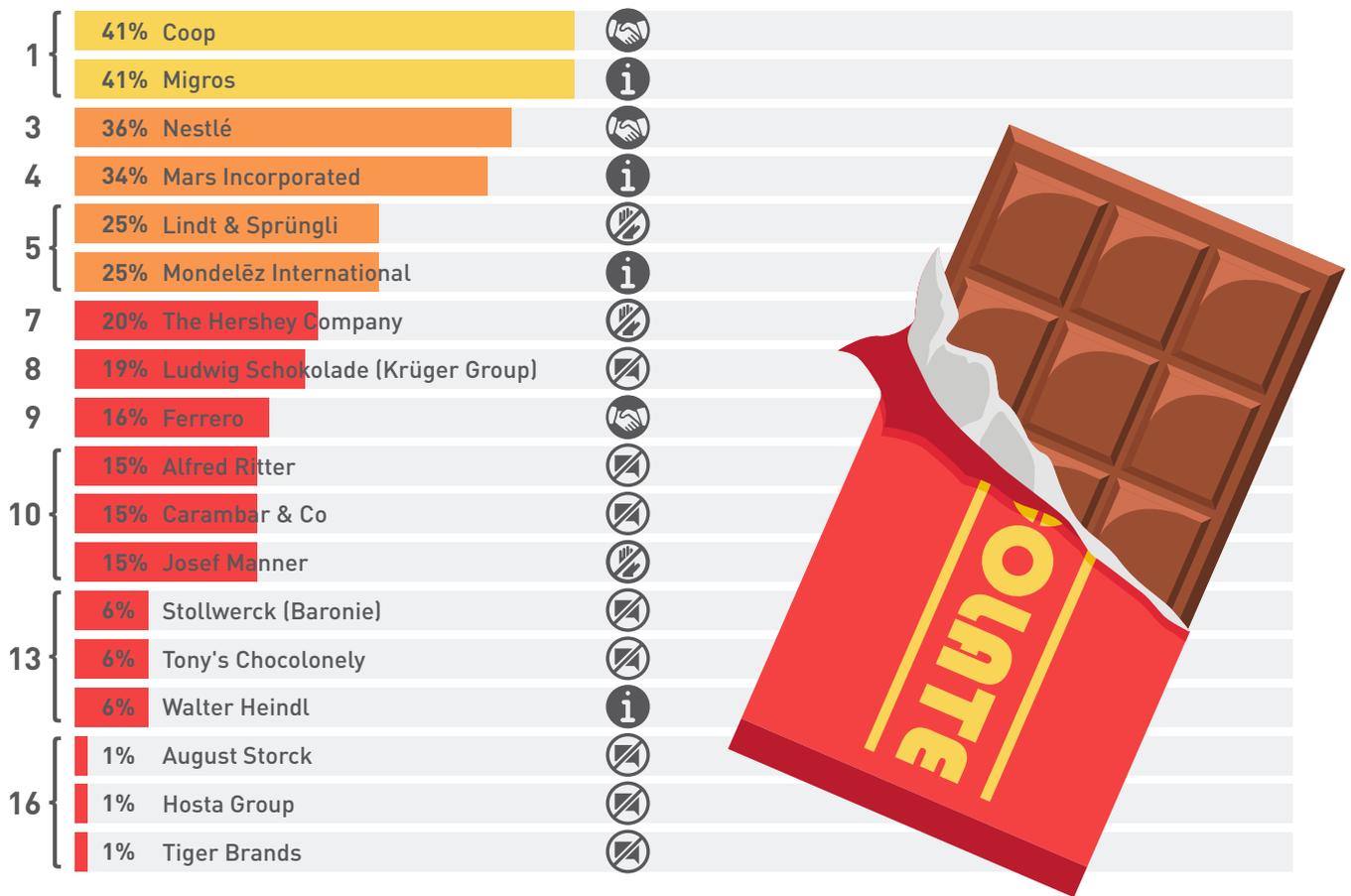
Text in green and red:

In order to display some of the results in the animal welfare category ([4.2.2 Animal welfare](#)) in a more nuanced way, coloured text was used instead of symbols. Red text means the findings were not sufficient to receive any points, green text means they achieved a point.



4 Results

4.1 Overall ranking



SCORE	SCORING CATEGORIES	COMPANIES
81 - 100	Very good	0
61 - 80	Good	0
41 - 60	Average	2
21 - 40	Poor	4
0 - 20	Very poor	12

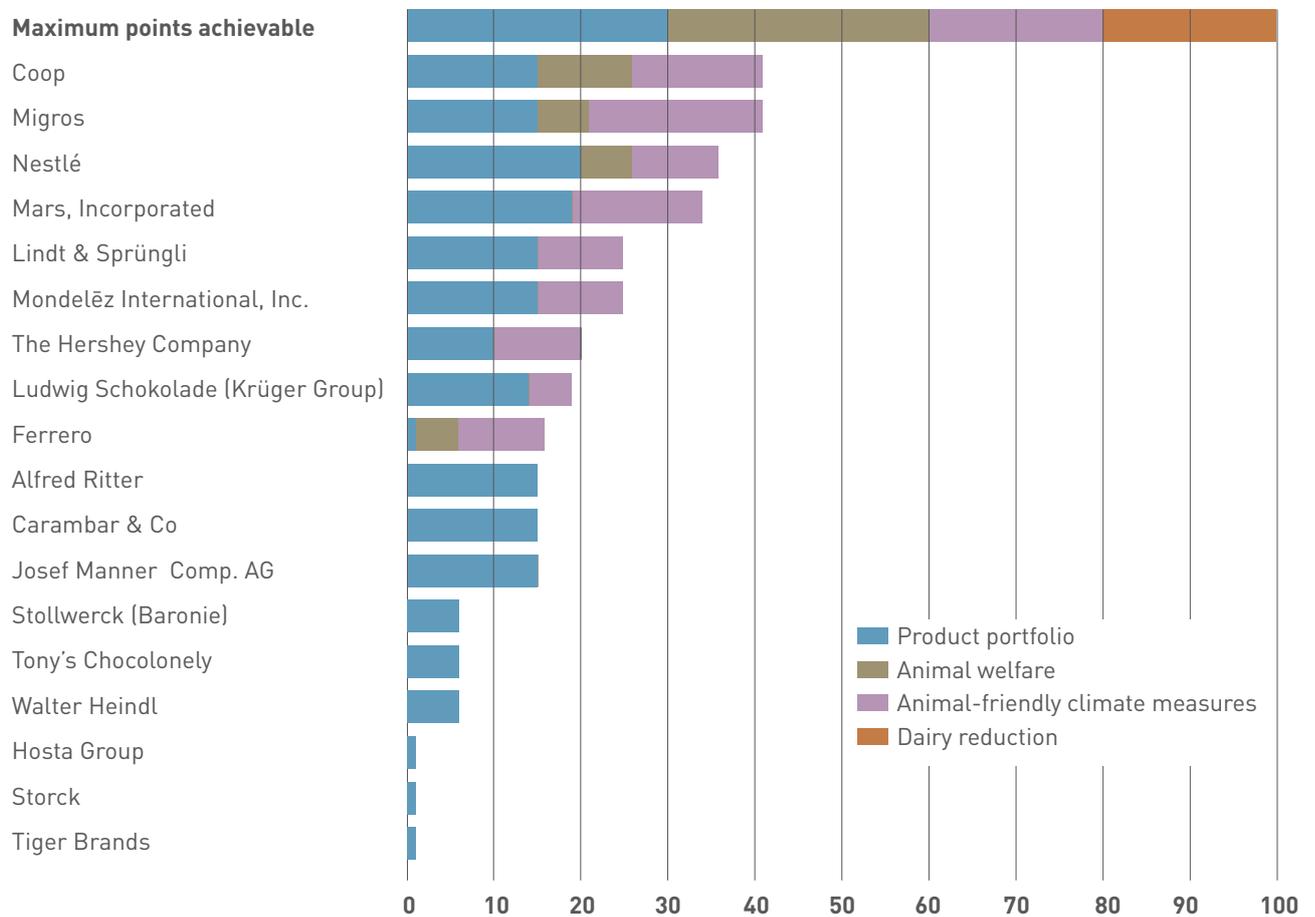
The two top companies scored 41% in the Average scoring category, four in the Poor, and the majority, twelve companies, scored in the Very poor category. No one scored in the Good and Very good categories. In the following chapters, the ranking results will be laid out by thematic category, and the noteworthy company details will be laid out in the company spotlights.

SYMBOL	PARTICIPATION TYPE	COMPANIES
	answered questionnaire	3
	information via e-mail	4
	rejected participation	3
	no reaction	8

Three companies filled in the questionnaire, four provided information via e-mail, three rejected participation and eight did not react despite several reminders.

4.2 Results by thematic category

Overview of all scores



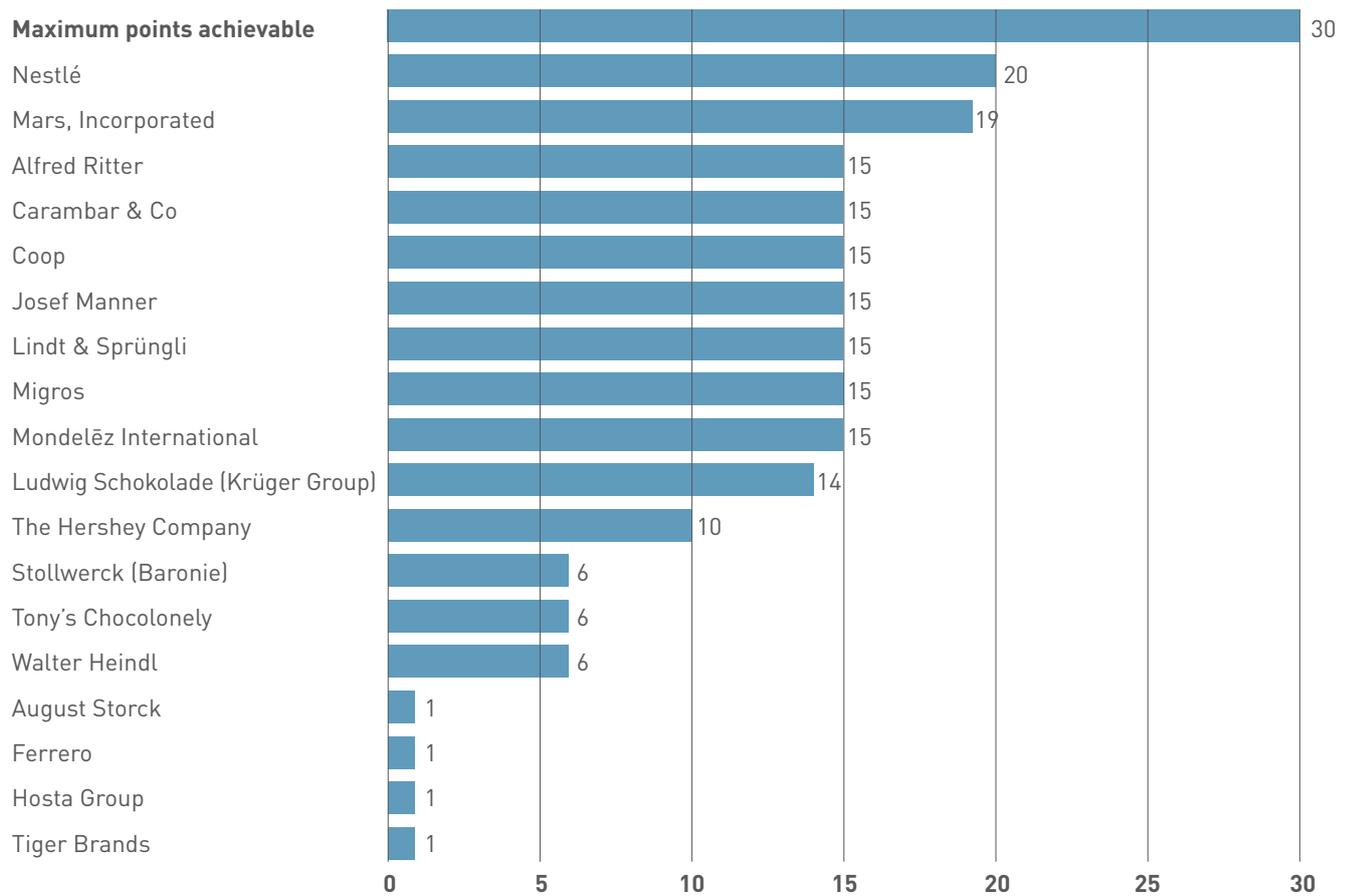
The chart shows the composition of each company's result as a total percentage and subdivided by each thematic category. While all companies were awarded points for their product portfolio for selling vegan dark or white chocolate and/or vegan 'milk' chocolate, only half (nine) scored in the animal-friendly climate measures category. In the animal welfare category, only four had animal welfare policies in place that allowed for some points to be awarded, although not many, amongst which were the three highest-scoring companies. In regard to the dairy reduction category, after which the ranking is named, not a single company formulated any goals or measures that could have justified any points.

An overall result overview is available in [8.2 Result overview](#).



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4.2.1 Product portfolio



No company achieved the maximum of 30% in this category. The highest scores in this category were achieved by Nestlé (20%) and Mars (19%), who both lacked a concrete strategy on the increase of vegan 'milk' chocolate; Mars additionally missed offering a vegan dark or white chocolate. The lowest score in this category was given to Ferrero, Hosta, Storck, and Tiger Brands with only 1% for the vegan dark chocolate they offered.

PRODUCT PORTFOLIO

Chocolate company		Alfred Ritter	Carambar & Co	Coop	Ferrero	Hosta Group	Josef Manner	Lindt & Sprüngli	Ludwig Schokolade (Krüger Group)	Mars, Incorporated	Migros	Mondelēz International	Nestlé	Stollwerck (Baronie)	August Storck	The Hershey Company	Tiger Brands	Tony's Chocolonely	Walter Heindl	
	%																			
Availability of dairy-free dark chocolate	1	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Availability of dairy-free milk chocolate	4	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✗	✗	✗	✗
Use of vegan alternative(s) in dairy-free 'milk' chocolate	5	✓	✓	✓	—	—	✓	✓	✓	✓	✓	✓	✓	—	—	✓	—	—	—	—
Marketing measures promoting vegan chocolates	5	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✓	✓	✓
Strategy to increase vegan 'milk' chocolate	10	?	?	✗	✗	?	?	?	?	?	?	?	✗	?	?	?	?	?	?	?
(Plan to) use dairy products from precision fermentation	5	?	?	✗	✗	?	?	?	?	✓	?	?	✓	?	?	?	?	?	?	?
	%	30	15	15	15	1	1	15	15	14	19	15	15	20	6	1	10	1	6	6

✓ Yes

✗ No

? No (clear) information given / could be publicly found within the allocated research time

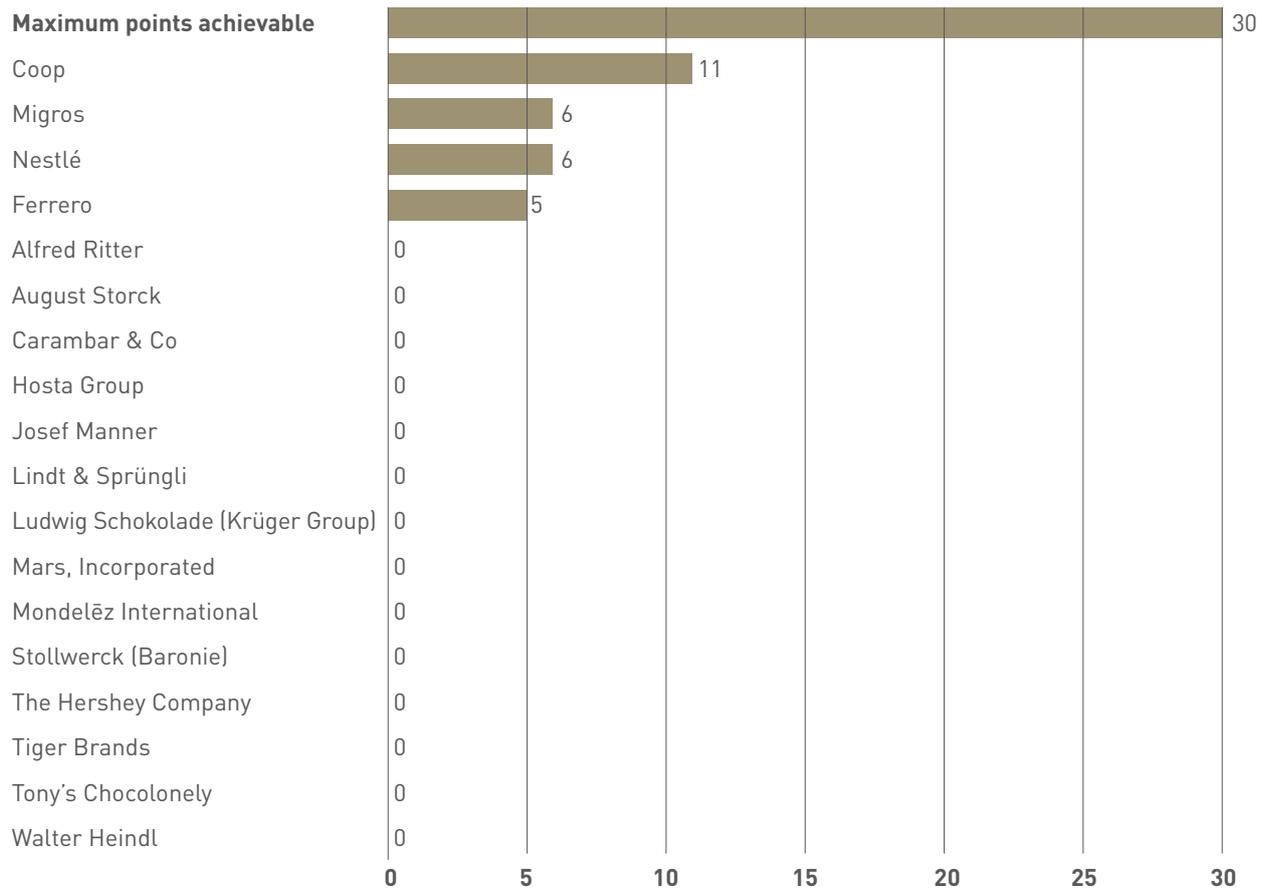
— Not applicable

- With 20%, Nestlé received the highest score in the product portfolio category.
- While all companies offered at least one type of vegan chocolate, only 11 out of 18 had dairy-free 'milk' chocolate in which dairy was replaced by plant-based alternatives (rice, nuts, oats mostly) in all cases, which – from the animal welfare perspective – is a good thing compared to using gelatine, eggs, or other animal-derived ingredients.
- Thirteen out of 18 companies had marketing measures in place to promote their vegan chocolate, mostly those who also offered vegan 'milk' chocolate.
- None of the chocolate companies had a concrete strategy in place to increase their share of vegan 'milk' chocolates, which showed that the replacement of dairy in their products was not very high on their agenda.
- Only two companies scored in regards to dairy products from precision fermentation: While Nestlé had announced the test launch of an animal-free dairy milk alternative product in cooperation with Perfect Day⁴², Mars already had an animal-free dairy chocolate (CO2COA) – also using Perfect Day protein – on the market⁴³.



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4.2.2 Animal welfare



30% was the maximum achievable score under the thematic category of animal welfare. The companies' overall performance in this category was rather poor: Only 4 out of 18 achieved points, with Coop leading the field with 11%, while the big majority could not be awarded any points at all. This was down to the fact that most companies did not have an animal welfare policy and if so, not a very detailed one that could have provided sufficient information to fulfil the questions asked.

ANIMAL WELFARE

Chocolate company	%	Alfred Ritter	Carambar & Co	Coop	Ferrero	Hosta Group	Josef Manner	Lindt & Sprüngli	Ludwig Schokolade (Krüger Group)	Mars, Incorporated	Migros	Mondelēz International	Nestlé	Stollwerck (Baronie)	August Storck	The Hershey Company	Tiger Brands	Tony's Chocolonely	Walter Heindl
																			
Dairy traceability	5	?	?	✓	✓	?	?	?	?	?	?	?	only fresh milk	?	?	?	?	?	?
Exclusion of practices harming animal welfare	10	?	?	max 8. h transport tail docking	✗	?	?	?	?	✗	young calves not isolated	✗	exclude high-performance breeds tail docking, dehorning castration w/o anaesthesia	?	?	✗	?	?	?
Goal to eliminate remaining practices harming animal welfare	5	?	?	✗	✗	?	?	?	?	?	?	?	✗	?	?	?	?	?	?
Concrete measures to eliminate practices harming animal welfare	5	?	?	✗	✗	?	?	?	?	?	?	?	✓	?	?	?	?	?	?
Support farmers in transitioning towards high welfare husbandry systems	5	?	?	✓	✗	?	?	?	?	?	✓	?	✗	?	?	?	?	?	?
	%	30	0	0	11	5	0	0	0	0	6	0	6	0	0	0	0	0	0

- ✓ Yes
- ✗ No
- ? No (clear) information given / could be publicly found within the allocated research time
- Not applicable

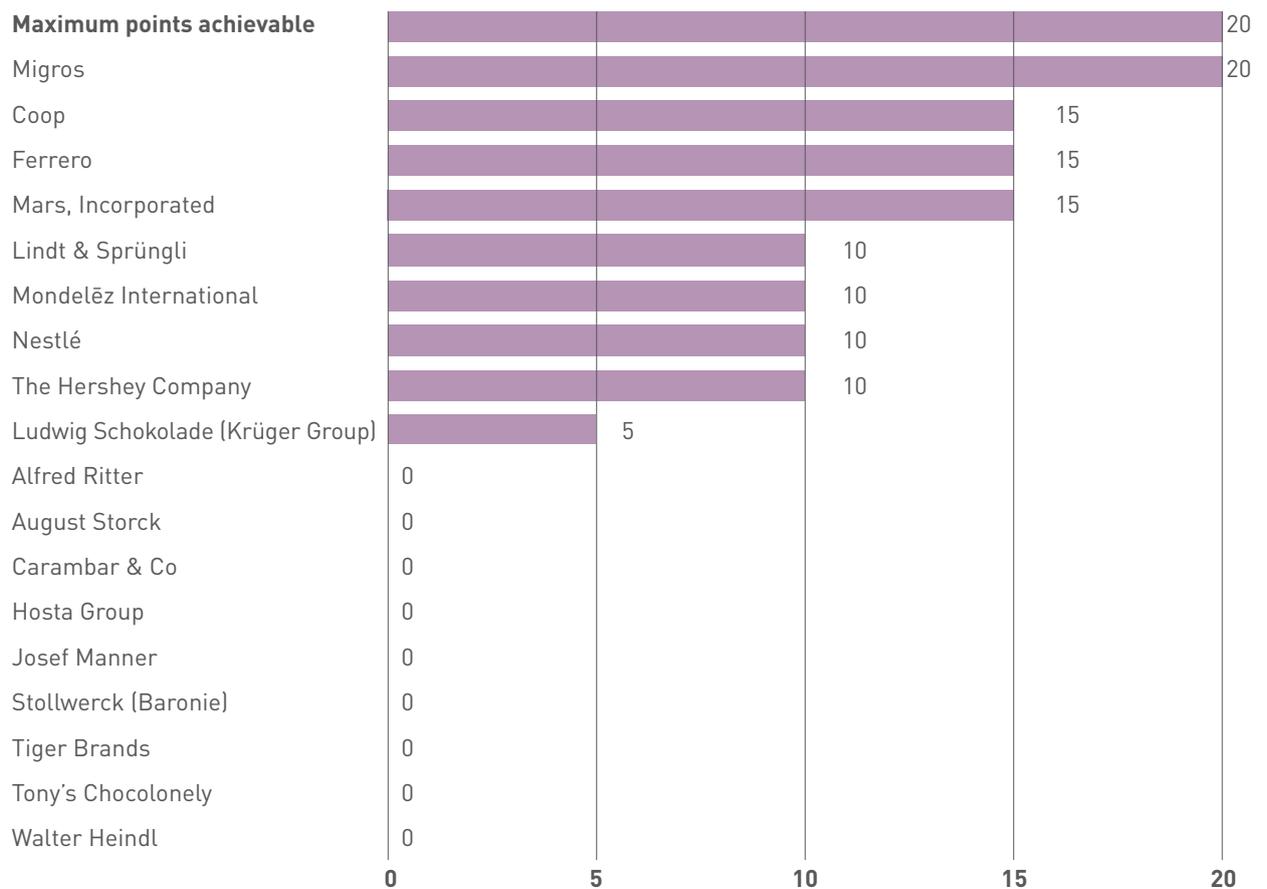
- Only 2 out of 18 companies, Coop⁴⁴ and Ferrero⁴⁵, stated that they can trace all their sourced dairy back to the farm of origin.
- Nestlé could trace its fresh milk back to farm level, but not its dairy ingredients such as milk powders, whey, or lactose, which are typically used in chocolate production, which is why it did not score here.
- Only three companies, Coop, Migros and Nestlé, have excluded in their animal welfare policies one of the ten harmful practices [see 1.1 Dairy: The hidden animal welfare problem] that FOUR PAWS is expecting to be eliminated as a minimum animal welfare requirement, which gained Coop, Migros and Nestlé 1 out of 10 points each.
- Ferrero, Mars, Mondelēz, Nestlé and The Hershey Company are members of the Sustainable Dairy Partnership (SDP)⁴⁶, which builds on the Dairy Sustainability Framework (DSF)⁴⁷. It includes requirements focused mostly on maximising efficiency by intensifying the productivity per animal and thus reducing emissions. It was not a framework that

ensured high-welfare husbandry systems, still being based on the outdated Five Freedoms. However, their foundational requirements regarding animal care prohibits tail docking⁴⁸. Nestlé was the only of the above companies listed as DSF implementing member⁴⁹ and the only one who listed tail docking in their own animal welfare policy. FOUR PAWS can only assume that the other companies are still working towards fulfilling the foundational requirements. Tail docking is one of three mutilations, next to dehorning and disbudding in general and castration without anaesthesia. One point could be achieved by eliminating all types of mutilations. As this was not the case, no points were given here, which is symbolised by the red text in the result overview.

- Only Migros and Nestlé were transparent on the level of enforcement of their own animal welfare policies.
- Nestlé was the only company with a concrete measure to eliminate the harmful practices.
- Only Coop and Migros supported farmers in transitioning towards high-welfare husbandry systems.



4.2.3 Animal-friendly climate measures



A maximum score of 20% could be achieved in the animal-friendly climate measures category, which was achieved only by Migros. The lowest achieved score was zero, by nine companies who were also the nine lowest scoring companies in the overall ranking.

ANIMAL-FRIENDLY CLIMATE MEASURES

Chocolate company		Alfred Ritter	Carambar & Co	Coop	Ferrero	Hosta Group	Josef Manner	Lindt & Sprüngli	Ludwig Schokolade (Krüger Group)	Mars, Incorporated	Migros	Mondelēz International	Nestlé	Stollwerck (Baronie)	August Storck	The Hershey Company	Tiger Brands	Tony's Chocolonely	Walter Heindl	
	%																			
Scope 3 climate goals linked to dairy	10	?	?	✓	✓	?	?	✓	?	✓	✓	✓	✓	?	?	✓	?	?	?	
Considering animal welfare when reducing emissions	5	?	?	✗	✗	?	?	?	?	?	✓	?	✗	?	?	?	?	?	?	
Highlighting positive impact of dairy-free products	5	✗	✗	✓	✗	✗	✗	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	
	%	20	0	0	15	10	0	0	10	5	15	20	10	10	0	0	10	0	0	0

✓ Yes

✗ No

? No (clear) information given / could be publicly found within the allocated research time

— Not applicable

- Eight out of 18 had a scope 3 emission reduction goal linked to dairy. Aside from the questions in the product portfolio category, this question was the one that most companies scored in. In all cases, the reduction goal appeared to only be related to emission reduction of dairy per kg, not to reducing/removing dairy in their product formulations ([see 4.2.4 Dairy reduction](#)).
- Only one company assessed, Migros, considered animal welfare when reducing emissions, meaning it has identified a concrete measure (pasture grazing) to be animal- and environment-friendly.
- Four out of 18, Coop, Ludwig, Mars, and Migros, highlighted the positive impact that dairy-free products have on both animal welfare and the environment. However, none of them took their own clear stance, and instead listed the reasons that consumers have for choosing vegan products. Two more companies (Nestlé, specifically KitKat, and Tony's Chocolonely) stated the environmental benefits without mentioning the animal welfare aspect. The reasons for not taking a stronger stance, or only doing so on the environmental aspect, are unknown.



4.2.4 Dairy reduction

Maximum points achievable

Maximum points achievable	0	5	10	15	20
Alfred Ritter	0				
August Storck	0				
Carambar & Co	0				
Coop	0				
Ferrero	0				
Hosta Group	0				
Josef Manner	0				
Ludwig Schokolade (Krüger Group)	0				
Lindt & Sprüngli	0				
Mars, Incorporated	0				
Migros	0				
Mondelēz International	0				
Nestlé	0				
Stollwerck (Baronie)	0				
The Hershey Company	0				
Tiger Brands	0				
Tony's Chocolonely	0				
Walter Heindl	0				

None of the companies assessed received points for any of the three questions in this category.

DAIRY REDUCTION

Chocolate company		Alfred Ritter	Carambar & Co	Coop	Ferrero	Hosta Group	Josef Manner	Lindt & Sprüngli	Ludwig Schokolade (Krüger Group)	Mars, Incorporated	Migros	Mondelēz International	Nestlé	Stollwerck (Baronie)	August Storck	The Hershey Company	Tiger Brands	Tony's Chocolonely	Walter Heindl	
	%																			
Dairy reduction goal	10	?	?	×	×	?	?	?	?	?	?	?	×	?	?	?	?	?	?	?
Concrete measures to reduce dairy	5	?	?	×	×	?	?	?	?	?	?	?	×	?	?	?	?	?	?	?
In case of reduction dairy will be replaced by vegan alternative(s)	5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	%	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

- ✓ Yes
- ✗ No
- ?
- No (clear) information given / could be publicly found within the allocated research time
- Not applicable

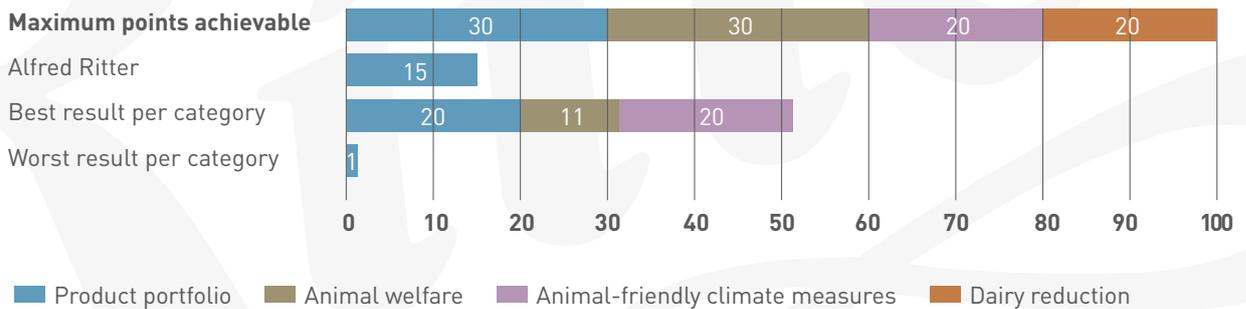
- The eight companies with scope 3 emission goals [\(see 4.2.3 Animal-friendly climate measures\)](#) all showed that scope 3 emissions are the largest part of their carbon footprint, and that dairy plays a role in it. Some even openly communicated that dairy is the biggest contributor to their scope 3 emissions. Yet, astonishingly, none of them drew the conclusion to reduce (their use of) dairy; instead, they tried to drive down emissions per kilogram of dairy by increasing the productivity per cow, further compromising animal welfare.
- It is evident that dairy reduction is not (yet) a priority for chocolate companies. Currently, the sustainability efforts of most chocolate companies are focussed on cocoa and palm oil sourcing, motivated by combatting deforestation and partly also slavery.

4.3 Company spotlights

This chapter will go into more depth about the highlights and shortcomings of each company, as well as discuss nuanced issues. It will not necessarily go into every single question for

each company, especially in the case where there was simply no information available at all.

4.3.1 Alfred Ritter

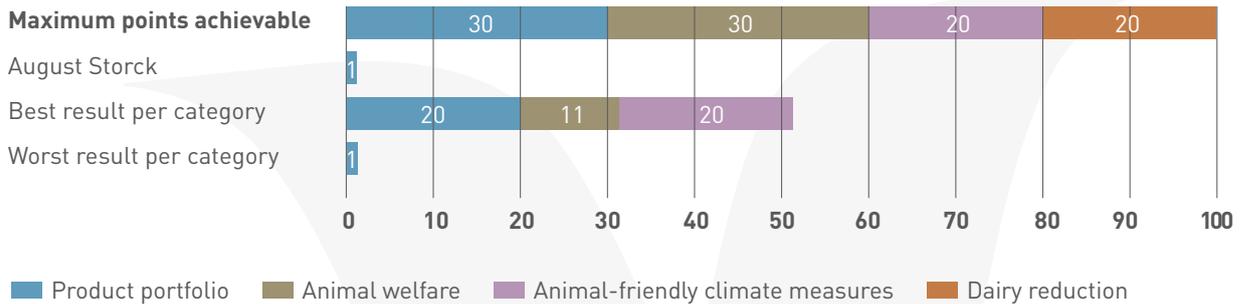


Alfred Ritter, hereinafter referred to as Ritter, is the company behind the German chocolate brand Ritter Sport, selling, next to its conventional range, also several vegan 'milk' chocolate products made with ground almonds, as well as vegan dark chocolates⁵⁰. Ritter marketed these extensively on social media^{51,52} and on its website, and introduced new vegan 'milk' chocolate flavours in 2023⁵³.

In terms of climate goals, Ritter set a goal to achieve complete CO₂ neutrality by 2025, including scope 3 emis-

sions and on dairy specifically. However, it did not set a goal for actual emission reductions. In fact, it stated that it is compensating unavoidable scope 1 and 2 emissions with CO₂ certificates and was not explicit about how it planned to achieve its scope 3 goal, making it unclear whether any reduction was planned.

Ritter was the only company that mentioned how much milk powder it sourced per year (10,000t), which we did not score but applaud its transparency, even if Ritter did not (yet) aim to reduce this number.



August Storck, hereinafter referred to as Storck, is a Germany-based producer of popular chocolate brands like Merci and Toffifee. While it did not offer any dairy-free 'milk' chocolate, its dairy-free Merci Dark Chocolate 72% earned it 1% in the product portfolio category. Albeit being a vegan chocolate, it was not labelled nor marketed as such, which Storck was clearly doing with other brands of its portfolio, e.g. nimm^{54,55}.

As no CSR or other relevant policies could be found, most of the questions could not be answered by the research conducted by FOUR PAWS. At the time of writing, Storck did have a website referring to their sustainability efforts, where it mentioned the efficient use of energy and the reduction of GHG emissions as guiding principles⁵⁶, but did not further elaborate nor make a reference to their scope 3 emissions let alone mention dairy in this context.

4.3.3 Carambar & Co

CARAMBAR

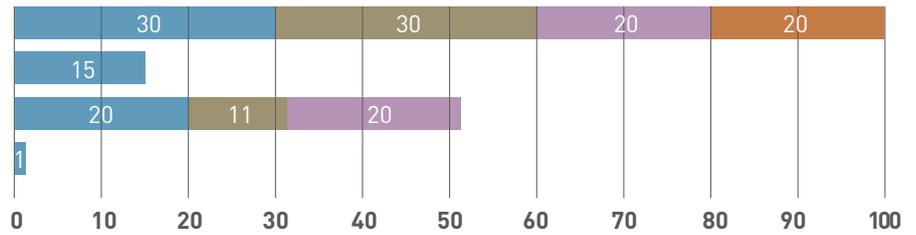


Maximum points achievable

Carambar & Co

Best result per category

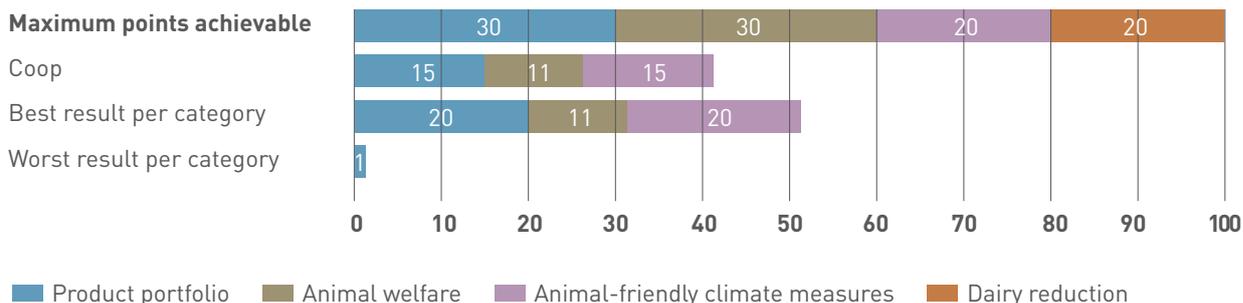
Worst result per category



■ Product portfolio ■ Animal welfare ■ Animal-friendly climate measures ■ Dairy reduction

Carambar & Co, hereinafter referred to as Carambar, is a French company with the French chocolate brands Poulain and Michoko, the Swiss brand Suchard and the UK brand Terry's Chocolate Orange. Terry's Chocolate Orange launched a vegan bar in 2022⁵⁷ made with dried rice syrup⁵⁸. Poulain⁵⁹ and Suchard⁶⁰ had at least one dairy-free dark chocolate each. Carambar did not mention its vegan chocolates on its website despite having a whole page dedicated to all of Terry's conventional range, but has marketed Terry's vegan bar on Terry's social media^{61,62}.

Carambar had no CSR policy. The only information related to any of the questions outside of product portfolio that FOUR PAWS found, was an interview between Eurazea and Carambar in 2021, where Thierry Gaillard, Group CEO of Carambar, mentioned having started a carbon assessment on scope 1, 2, and 3 emissions and having a long-term goal of carbon neutrality⁶³. However, no concrete measures or goals had been set since then.



Coop is one of Switzerland’s biggest retailers and also the parent company of different brands, including the chocolate brand Halba as well as its own-brand chocolate. Halba offered dairy-free dark chocolate⁶⁴ and Coop Karma offered vegan ‘milk’ chocolate made with oat milk powder and nut butters⁶⁵, which were marketed on social media⁶⁶. Coop stated that there would be a lack of consumer acceptance for not substituting all the dairy with dairy-free alternatives, and did not see a current demand for dairy from fermentation.

In terms of animal welfare, Coop stated that it has fulfilled its target of having transparent product chains⁶⁴ despite Halba only having transparency to the country where the product was last processed⁶⁷. Coop’s no-go list⁶⁸ explicitly forbade live animal transport of over eight hours in regard to its whole product portfolio. Its milk programme gave farmers a financial incentive to produce in a more animal-friendly manner⁶⁹, including reducing concentrate

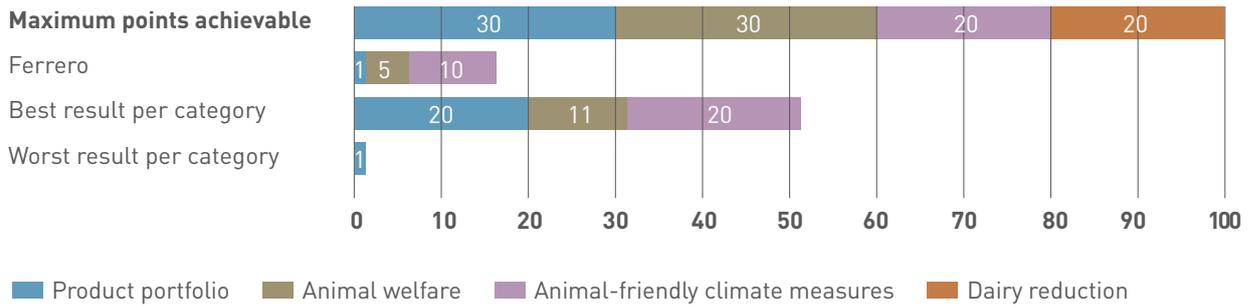
feeding and forbidding tethering, which was still allowed under Swiss law⁶⁹. Further, without providing a reference, Coop explained that it also supported farmers via the StAR programme that gave workshops on antimicrobial resistance (AMR).

Although Coop did not have its own scope 3 emission reduction target, it answered that their supplier did: reducing the CO₂ emission per kg of milk by 2027, as validated by the Science-Based Targets initiative (SBTi). Coop stated that it planned to set its own emission reduction goals with the SBTi initiative, including for milk, in 2023, and that a strategy to increase their vegan ‘milk’ chocolate products could become part of that. When highlighting the positive effects of dairy-free products, Coop mentioned both environmental and animal welfare benefits, but only in the context of what consumers chose those for; it did not take its own stance⁷⁰.

FERRERO



**Rank
9**



Ferrero is an Italian parent company with a variety of chocolate brands available globally, such as Duplo, Ferrero Rocher, Hanuta, Kinder, Mon Chéri, to name a few.

During the research timeframe, Ferrero did not offer any dairy-free 'milk' chocolate. It did have dark chocolates that happened to be vegan: Mon Chéri and the dark chocolates of Thorntons. However, they were not marketed as vegan.

In terms of animal welfare, Ferrero's requirements in its supplier code and 2023 Dairy Charter did not cover any

of our ten harmful practices because it was based on the outdated Five Freedoms; [see 1.1 Dairy: The hidden animal welfare problem.](#)

Ferrero had a climate policy to reduce scope 1, 2, and 3 emissions intensity by 43% per tonne of product produced from a 2018 base year and mentioned dairy as one of its key ingredients.

Lastly, Ferrero did not have any dairy reduction goals or measures but did state that its strategy included developing new plant-based products.



Maximum points achievable

Hosta

Best result per category

Worst result per category

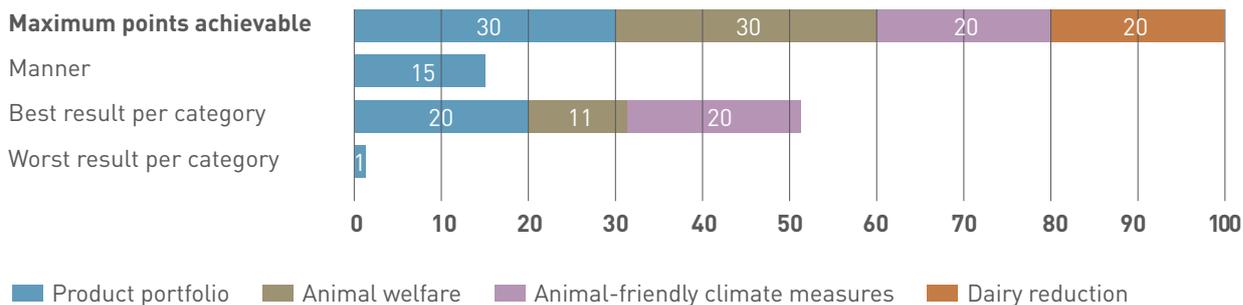


■ Product portfolio ■ Animal welfare ■ Animal-friendly climate measures ■ Dairy reduction

Hosta is a German parent company owning, amongst others, the German chocolate brands Romy and Nippon and the Dutch brand Droste. Although none of them offered dairy-free 'milk' chocolate, Droste offered a dairy-free dark chocolate, the Droste Pastilles puur. It did not appear to be labelled or marketed as dairy-free or vegan^{71,72,73}.

Their low score was due to the fact that it lacked transparency and did not have a CSR or other policies for Hosta itself, nor for its chocolate brands Romy, Nippon, or Droste.

4.3.7 Josef Manner

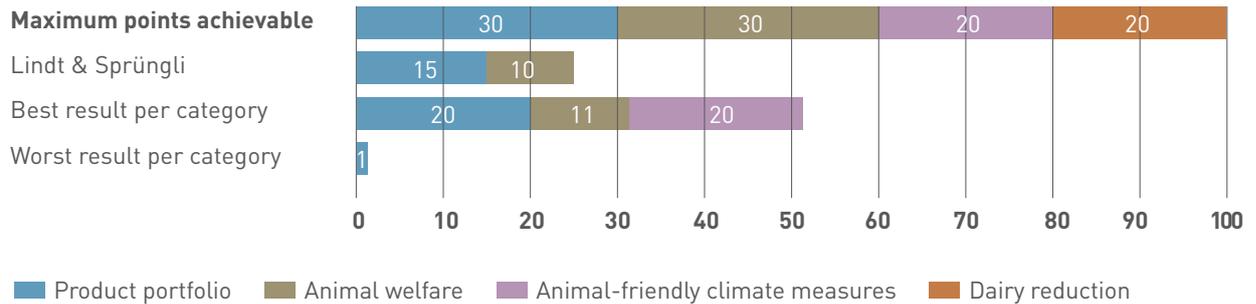


Josef Manner, hereinafter referred to as Manner, is the producer of the world-famous Manner wafers, which are partly chocolate-coated, and also the mother company of the chocolate brands Victor Schmidt (Mozart balls), Casali (chocolate bananas) and Ildefonso (nougat confectionery). In addition to vegan dark chocolates, vegan 'milk' chocolates were also available, in which plant-based alternatives to dairy like hazelnuts, cocoa and palm fat were used. More points were awarded for highlighting their vegan Manner products by providing a vegan filter on their website⁷⁴. As a side note: The Casali chocolate bananas are also a dairy-

free product with dark chocolate, but contain gelatine⁷⁵, which makes it neither vegetarian nor vegan.

There was a CSR subpage⁷⁶ which also mentioned some environmental and sustainability topics evolving around cocoa and palm oil, but there was no reference to dairy, animal welfare, or the climate crisis. Manner let us know that dairy reduction is not yet anchored in their strategy as a sustainability goal, but that they would further discuss it internally regarding the further development of their sustainability strategy.

4.3.8 Lindt & Sprüngli



Lindt & Sprüngli, hereinafter referred to as Lindt, is the company of the Swiss chocolate brand Lindt. Lindt offered vegan dark and vegan 'milk' chocolate made from oat drink, which it marketed extensively^{77,78,79}.

In terms of animal welfare, Lindt was severely lacking. It had responsible sourcing approaches for its 'priority raw materials' that did not include dairy, despite eggs being included⁸⁰. It is unclear why a company selling mainly milk chocolate would prioritise eggs over dairy. However, it is positive that there was some interest in animal welfare, albeit just for eggs.

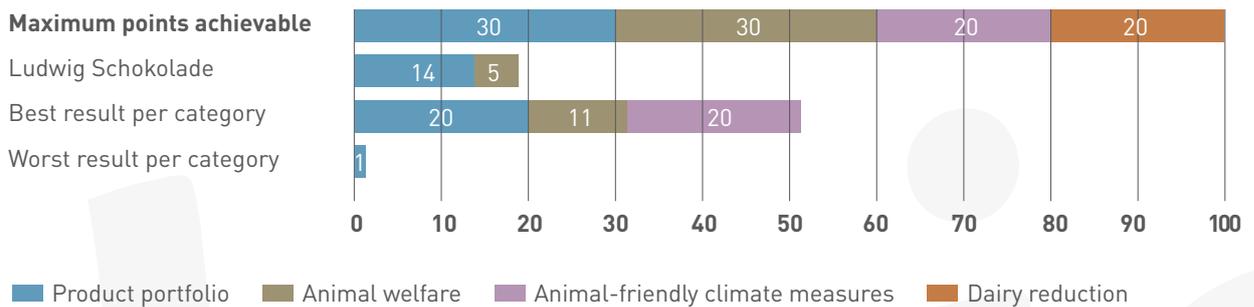
Lindt did have a climate strategy of reducing their GHG emissions in the production process by 2% per year from 2020, until a science-based target is announced in 2023. It is important to note that a 2% emission cut is far from what is needed to remain within 1.5 °C global heating as per the Paris Agreement²³. However, it was encouraging to see that, in 2021, it had already achieved a 20% reduction, going far above their 2% a year minimum.



**Ludwig
Schokolade**



**Rank
8**



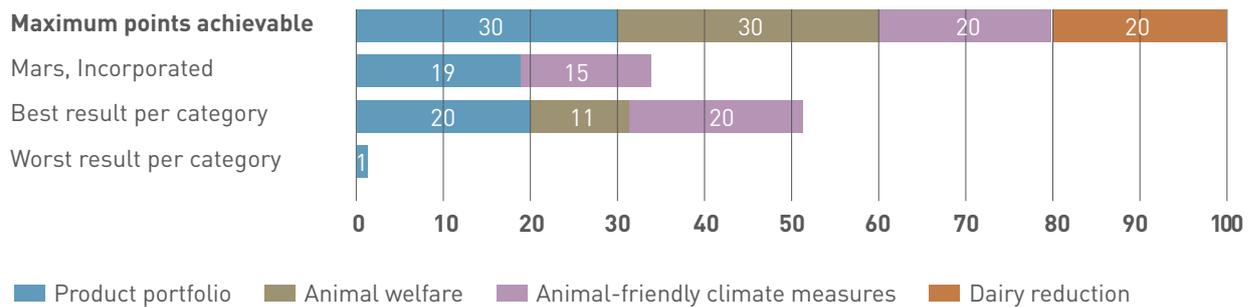
Ludwig Schokolade, hereinafter referred to as Ludwig, is the chocolate company of Krüger Group and owns the German chocolate brands Schogetten, Trumpf, and Mauxion. Schogetten was the only brand with dairy-free 'milk' chocolate, which it marketed on various channels^{81,82,83}. None of the brands had dairy-free dark or white chocolate, as even Mauxion's simple dark chocolate tablet contained dairy⁸⁴.

Krüger Group mentioned in its CSR policy that most of its dairy came from cows free from tethering⁸⁵. However, this was not applicable to all dairy as a minimum standard, and we did not know whether it was applicable to the dairy sourced for Ludwig. In terms of farmer support, we considered the QM Sustainability Module that collected information from milk producers and evaluated where the strengths and weaknesses lie. However, it was only an information-gathering tool rather than tangible farmer support in the form of financial support, education, or the like.

Ludwig and Krüger Group stated that they will account for scope 3 emissions in 2022⁸⁵, but neither had scope 3 emission reduction goals as of then. Their only goal was to become climate neutral by 2040, which does not include scope 3 emissions. They are participating in an emission compensation project 'Project Togo' rather than working on reducing emissions. It is worth noting that Krüger Group produces its milk through a method that requires less water and electricity⁸³.

Krüger had a statement on its website about the feasibility and the rising demand of 'environmentally friendly and respectful plant-based diets'⁸⁶. Its policy even compared the CO₂ footprint of oat milk to dairy milk⁸³. Unfortunately, Schogetten only advertised the climate neutrality of the packaging of their vegan Schogetten, not the environmental benefits of it being vegan (let alone the animal welfare benefits)⁸³, which could be seen as a wasted opportunity.

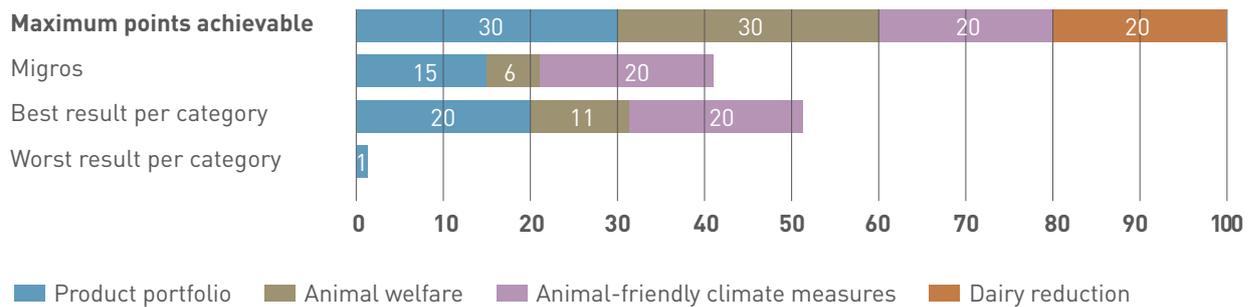
MARS



Mars, Incorporated, with the confectionary branch Mars Wrigley, hereinafter referred to as Mars, is a global company with headquarters in the US that is famous for, to name a few, Bounty, Dove/Galaxy, Maltesers, Mars, Milky Way, Snickers, and Twix. Several of Mars' brands have/will come out with a vegan version: Bounty, Topic⁸⁷ and Galaxy⁸⁸ made from nut pastes and dried rice syrup. Mars was also in partnership with an exclusively vegan chocolate brand, CO2COA, made with milk protein from fermentation⁴³. However, Mars did not mention the vegan bars on its website, and in fact did not even list CO2COA as one of its brands. In terms of marketing, the conventional Topic bar was discontinued so we could not find marketing for its vegan counterpart; Bounty did not have a brand website; and Galaxy had a website but did not list its vegan bars⁸⁹. The only marketing is undertaken by CO2COA itself.

In terms of animal welfare, Mars forbade dehorning without anaesthesia, whereas FOUR PAWS is against dehorning entirely. Other than that, it recognised the Five Freedoms, which is an outdated principle that does not suffice for any points, [see 1.1 Dairy: The hidden animal welfare problem](#). Mars had some plans to improve its traceability, but did not focus on dairy and full traceability was in any case not yet ensured⁹⁰.

In terms of climate, Mars had the goal of achieving net zero GHG emissions by 2050 (after its previous pledge of cutting emissions by 67%), including all scope 3 emissions, and specifically referred to dairy. Its brand CO2COA mentioned that its vegan product is animal-friendly and environment-friendly, hence highlighting the positive impact of dairy-free products. Neither Mars nor its brands Bounty and Galaxy took a stance on this.

MIGROS

Migros is the leading Swiss retailer and parent company to chocolate brands Chocolat Frey and Niagara (both under Delica AG), as well as Migros' own brand chocolates such as M-Basic, M-Classic and V-Love. FOUR PAWS contacted Delica and Migros. Delica rejected participation but provided information via e-mail, whereas Migros never responded.

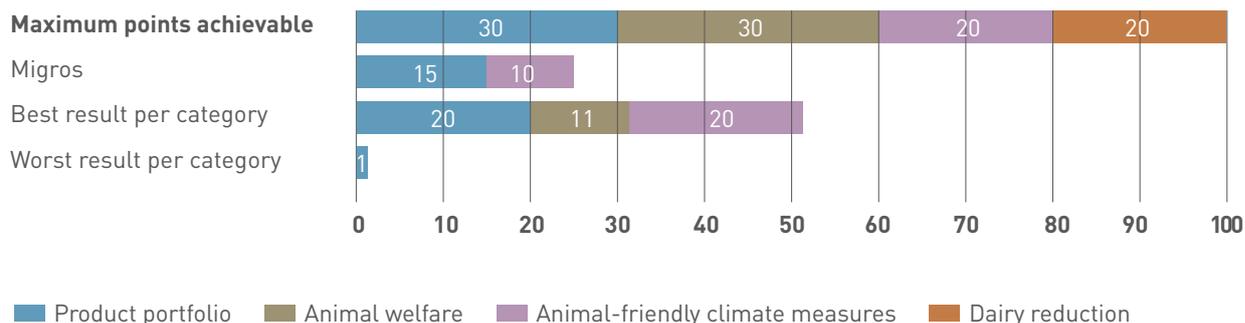
Chocolat Frey had vegan dark chocolate⁹¹ and Migros V-Love vegan 'milk' chocolate with rice drink powder and ground hazelnuts⁹², which were promoted on social media⁹³.

In its 'Overview of animal welfare requirements per animal species' document⁹⁴, Migros simply stated that they abide by the Swiss regulation, which did not count as their own animal welfare policy. However, its webpage 'Animal welfare guidelines'⁹⁵ was an own animal welfare policy that excluded certain practices, some as a general standard, some only for products of a certain provenance, which were therefore not taken into consideration. Isolation of social animals, including calves, is generally forbidden, and awarded them one point. Prophylactic use of antibiotics is only forbidden in Switzerland and Europe and did not receive a point based on the above-mentioned reasons. Its exclusion of permanent tethering did not award them a point due to the fact that it only refers to permanent tethering instead of completely forbidding it. In total, this means Migros only excluded one of ten harmful practices

as a minimum standard to all its products, which, although better than the 15 companies that did not exclude a single one, does not ensure the absolute minimum level of animal welfare, as laid out in [1.1 Dairy: The hidden animal welfare problem](#). Worth mentioning is Migros' performance report⁹⁶ that assessed on a yearly basis how animals were in fact kept and treated, including the amount of animals having undergone mutilations or that were transported more than eight hours. Being transparent on the level of enforcement of its own policies is something FOUR PAWS applauds.

Migros also supported farmers by offering a financial bonus for producing sustainably (specifically, reducing concentrate feed)⁹⁷, which is exemplary.

Migros had a scope 3 emission reduction goal, namely of 27.5% by 2030, which was validated by the SBTi and refers to sustainable animal agriculture⁹⁸. Further, Migros, as the only one of 18 companies, explicitly mentioned the relationship between climate and animal welfare and stated a concrete measure of ensuring both: pasture grazing⁹⁹, which, according to FOUR PAWS, is one of the main methods to mitigate climate change whilst also improving animal welfare. This sets Migros apart, as most others do not mention the relationship at all. Although mostly spreading awareness on the environmental benefits of going dairy-free or vegan¹⁰⁰, Migros also discussed animal welfare as a reason to go vegan¹⁰¹.



Mondelēz International, hereinafter referred to as Mondelēz, is the producer of iconic chocolate brands like Cadbury, Milka, and Toblerone. Different dark vegan chocolates were available, amongst them Côte d’Or Noir and the relatively newly acquired brand Hu¹⁰², which offers several certified vegan organic and paleo chocolates, also with nut butter fillings, setting them apart from conventional dark chocolate. Additionally, Mondelēz launched a vegan counterpart to its Cadbury Bar, the Cadbury Plant Bar, which used almond paste instead of dairy, in the UK at the end of 2021 and was being marketed for Veganuary¹⁰³.

While Mondelēz claimed to expand their portfolio to deliver against their environmental targets and meet consumers’ evolving needs, which includes innovations to introduce more plant-based offerings into the core portfolio, no concrete strategy to increase vegan ‘milk’ chocolates could be found.

Mondelēz said in their [Environmental, Social and Governance \(ESG\) report](#)⁷ that their R&D future focus includes supply chain traceability without dairy being specifically mentioned. Compared to other ingredients that were considered key, such as palm oil, of which 85% could already be traced back to the plantation and 99% to the mill, the traceability of dairy lagged behind. As is the case for most assessed companies, Mondelēz’ general animal welfare policy¹⁰⁴ was based on the outdated Five Freedoms, and their dairy animal welfare approach¹⁰⁵ did not explicitly exclude either of the ten harmful practices that FOUR PAWS sees as the minimum requirement to ensure animal welfare ([see 1.1 Dairy: The hidden animal welfare problem](#)).

Within their sustainability goals, Mondelēz’ set 2025 goal regarding dairy was formulated as ‘majority of dairy materials purchased from suppliers operating under animal welfare schemes’¹⁰⁶ and they claimed to have already reached 74% in 2021, thus being ‘on track’. It is unclear what is meant by their statement. The bar for their standards needs to be set higher to exclude the worst practices, be more concrete and also more encompassing: Initially, Mondelēz said it wants to focus on liquid milk in Europe and North America only.

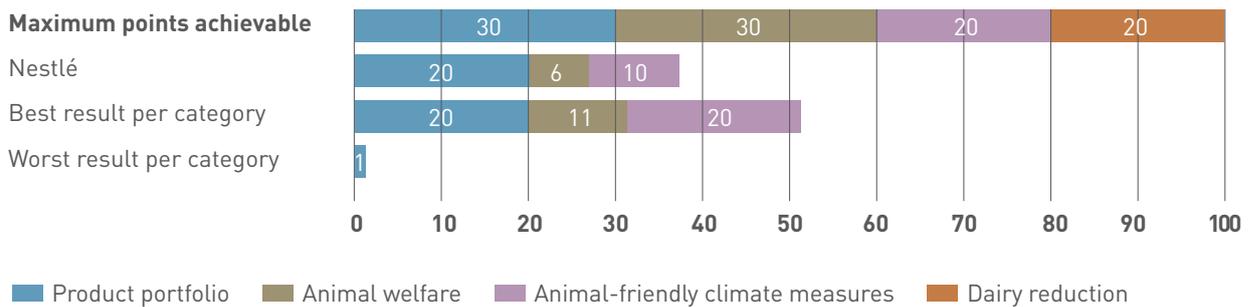
In its ESG climate policy, Mondelēz has set the goal of net zero GHG emissions by 2050; by 2025, the goal is to reduce absolute end-to-end GHG emissions by 10% against a 2018 baseline. Over 70% of Mondelēz’ [CO₂ equivalent \(CO₂e\)](#) emissions were scope 3-related, dairy having played the second-biggest role with 21.2% of the overall carbon footprint (after cocoa with 30.5%).

Mondelēz stated it is focused on reducing the climate footprint of dairy. In connection to this, it made a bold statement in its ESG report: “We see animal welfare as inseparable from the climate impact of dairy farming – there is a clear link between healthy, productive animals and lower emissions. So we are working with farmers on both fronts – to decrease emissions and improve animal welfare.” Unfortunately, it only mentioned concrete measures for carbon improvement, including the increase of animal productivity, which is the opposite of what FOUR PAWS is asking for, and did not elaborate on corresponding animal welfare ones at all.

4.3.13 Nestlé



Nestlé



The Swiss food giant Nestlé is the producer of an omnipresent chocolate portfolio including KitKat, Smarties, and Lion. Next to a few dairy-free dark chocolates from its brand Les Recettes de l'Atelier, available mostly in France and some other European countries, it also offered a dairy-free 'milk' chocolate: In its KitKat V – the vegan equivalent of its most popular brand globally – a rice-based alternative to dairy¹⁰⁷ was used. KitKat V was available in 15 countries across Europe, announced to be soon available in Australia and Brazil and has been intensively marketed^{108,109}. Additionally, Nestlé was already piloting a beverage product with animal-free protein from precision fermentation, which is identical to the whey protein found in cow's milk¹¹⁰. It claimed that it would replace dairy content in some of its products with plant-based ingredients and continue to look at ways to innovate in the plant-based space as part of R&D work, including for consumers looking for vegan chocolate options, but did not have a specific and time-bound strategy it followed.

In a somewhat contradictory manner, when asked for reasons for not substituting all dairy with dairy-free alternatives, Nestlé mentioned two points: ingredient functionality/property and health/nutritional profile. This came as a surprise, because for some of their existing

plant-based products, these given reasons apparently were not a problem: Nestlé has been praising the quality of its KitKat V, where the plant-based ingredients seemed to have worked well, just as its Wunda pea-based milk alternative, of which they particularly emphasized its nutritional profile¹¹¹.

Two of the four key pillars of activity for Nestlé's approach to sustainable sourcing¹¹² were transparency and animal welfare. In regard to transparency, Nestlé wanted to improve the traceability of its raw materials and the understanding of how they are produced. At the time, only fresh milk could be traced back to farm level; dairy ingredients (e.g. powder) were only traceable to cooperative level. Concerning animal welfare, Nestlé wanted to contribute to continuously improving how the animals in its supply chains are treated. It talked about rigorous animal welfare standards. Looking at the practices harming animal welfare FOUR PAWS wants to see excluded, Nestlé only received one point for the exclusion of high-performance breeds¹¹³. Although it had the most exclusions of mutilations of all companies – dehorning, tail docking, and castration without anaesthesia – disbudding was still allowed with anaesthesia¹¹³, so it did not get this point.

Nestlé was also the only company to have concrete measures in place to exclude dairy from farms still applying practices harming animal welfare. It worked with farmers and suppliers to establish action plans to eliminate close confinement and tethering¹¹⁴. Farmers were assessed by independent auditors. If they failed to meet the Responsible Sourcing Standard¹¹³, Nestlé prioritised engagement and first tried to help them in addressing the issue at stake. If they were unable or unwilling to take appropriate corrective action, it considered ending its business relationship.

As for farmer support, all activities were directed towards animal health in the context of raising the milk yield (low-stress milk production systems¹¹²) and driving down GHG emissions in dairy production (Cool Farm Tool), but not prioritising high animal welfare husbandry, so no points were given here.

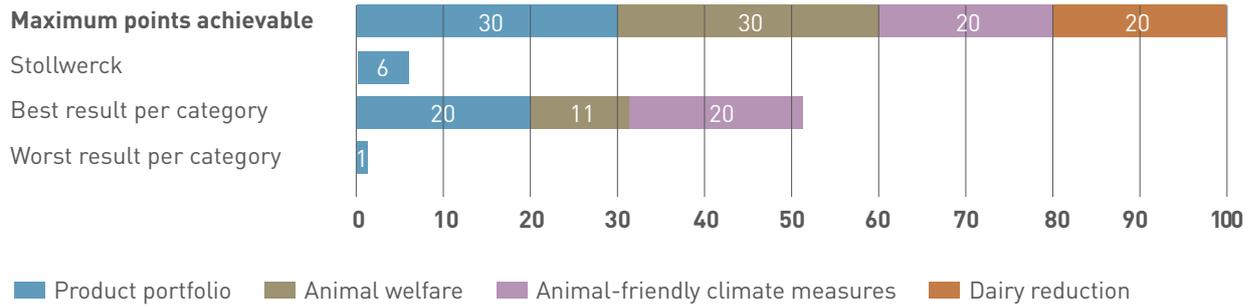
Nestlé's climate targets covered all 3 scopes including GHG emission reduction for dairy and livestock. In its sustainability report, Nestlé revealed that 95% of GHG emissions came from activities in the supply chain¹¹², which made tackling scope 3 emissions its main focus. Over 70% of its emissions were caused by sourcing its ingredients, of which more than half was accounted for by dairy and livestock (34.2 million tonnes of CO₂e in 2018)¹¹⁵.

In its climate policy, its target is to halve its GHG emissions by 2030 against a 2018 baseline and to have achieved net zero by 2050.

In respect of considering animal welfare in the light of reducing carbon intensity, the measures mentioned¹¹⁵ were centred around the increase of productivity¹¹², which is compromising animal welfare.

In regard to highlighting the positive impact dairy-free products have on animal welfare and the environment, Nestlé particularly emphasised the climate benefits of its KitKat V: As can be read on the KitKat website¹⁰⁸, the vegan version has an 18% lower carbon footprint than its conventional predecessor, mainly due to having replaced dairy by vegan ingredients. Unfortunately, animal welfare was not mentioned in this context, so no point was awarded.

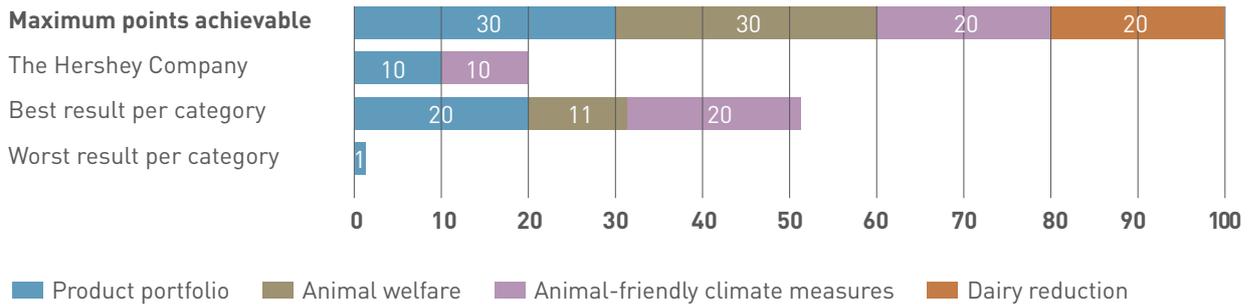
Nestlé let us know that it considers its move into plant-based options as a complement to its dairy-based food offerings, that it believes dairy products are and will continue to be important in the future and it envisions net zero emissions for the dairy industry. The complete renunciation of animal milk was not a solution from Nestlé's perspective¹¹⁶.



Stollwerck is a German chocolate manufacturer that belongs to Belgian parent company Baronie Group and is known for its brands Alpia, Sarotti, or Alprose. Under their brand Sarotti, various vegan dark chocolates were available and also marketed with an emphasis on the vegan formula, its sustainability and fair production^{117,118}.

In the CSR, set by Baronie¹¹⁹, climate change was only mentioned in the context of affecting cocoa farms and in its Code of Conduct¹²⁰. The reduction of its carbon footprint was mentioned as an important objective, followed only by superficial examples of scope 1 and 2 measures. No concrete GHG emissions reduction goals in regard to scope 3 were mentioned, let alone dairy specifically, nor animal welfare.

4.3.15 The Hershey Company



The Hershey Company, hereinafter referred to as Hershey, is a US-based chocolate producer, well-known for brands like Hershey’s Kisses, Reese’s, and KitKat*. In their Oat Made range (recently put on limited shelves for in-market testing¹²¹), dairy was replaced by almonds, oat, and rice for dairy-free ‘milk’ and dark chocolates.

It was unclear whether the milk used for chocolate was traceable back to farm level¹²². In regard to supporting farmers, the support was directed at more sustainable dairy production that did not have animal welfare at its core but concentrated more on environmental issues.

Hershey had clear scope 3 climate goals linked to dairy: 96% of their total GHG emissions came from scope 3 and

dairy was mentioned as the area with the greatest reduction potential¹²³. Its absolute reduction goal was 50% in scope 1 and 2 by 2030, and 25% in scope 3 emissions by 2030, against a 2018 baseline¹²⁴.

Hershey pointed out that dairy sourcing, without proper stewardship, amongst other things, can lead to significant carbon emissions and animal rights abuses. It stated: ‘This is why Hershey is committed to responsible and sustainable dairy sourcing that positively impacts our shared environment and ensures the health and wellbeing of workers and animals’¹²², but unfortunately failed to mention how exactly they want to avoid animal rights abuses.

* Only in the US; in the rest of the world, Nestlé produces KitKat.

4.3.16 Tiger Brands

TIGER BRANDS

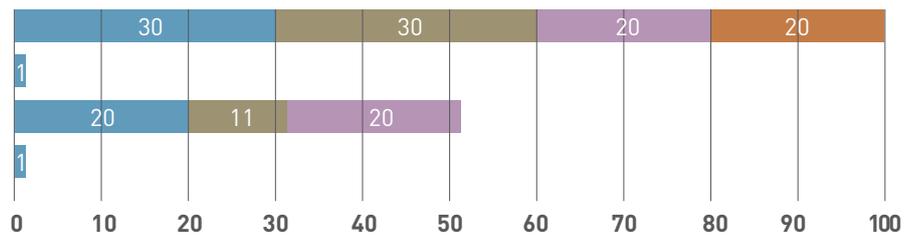


Maximum points achievable

Tiger Brands

Best result per category

Worst result per category



■ Product portfolio ■ Animal welfare ■ Animal-friendly climate measures ■ Dairy reduction

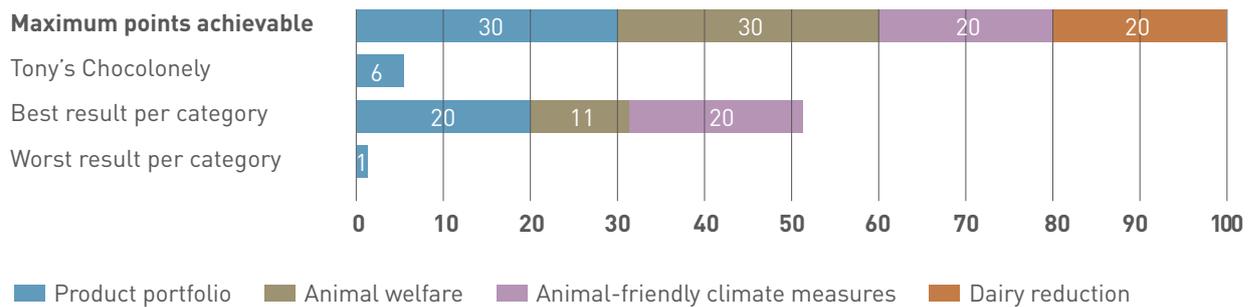
Tiger Brands is a South African food and beverage company and producer of the chocolate brand Beacon, which is only available in South Africa. Tiger Brands offered a presumably dairy-free dark chocolate¹²⁵ as found in Beacon Heavenly Midnight Velvet; FOUR PAWS was not able to find any dairy-free 'milk' chocolate during the research timeframe.

Tiger Brands did not have a publicly available animal welfare policy, just a brief paragraph linked to its sourcing practices as part of its Sustainability Report¹²⁶, which did not hint at any of the ten harmful practices. Tiger Brands' climate policy described GHG emissions reduction goals of 45% by 2030 against a 2020 baseline. It did have a scope

3 reduction strategy of 25%, which it did not elaborate on any further and which did not mention dairy either.

While Tiger Brands was not highlighting the positive impact of dairy-free products within their own range, it did so in regard to their investment into plant-based food company Herbivore Earthfoods whose product line includes dairy-free milk alternatives and desserts, confectionery, and protein alternatives. Tiger Brands claimed being proud of Herbivore's impact, being seven times more water-efficient and emitting 90% less GHG emissions than animal-based products¹²⁷.

4.3.17 Tony's Chocolonely



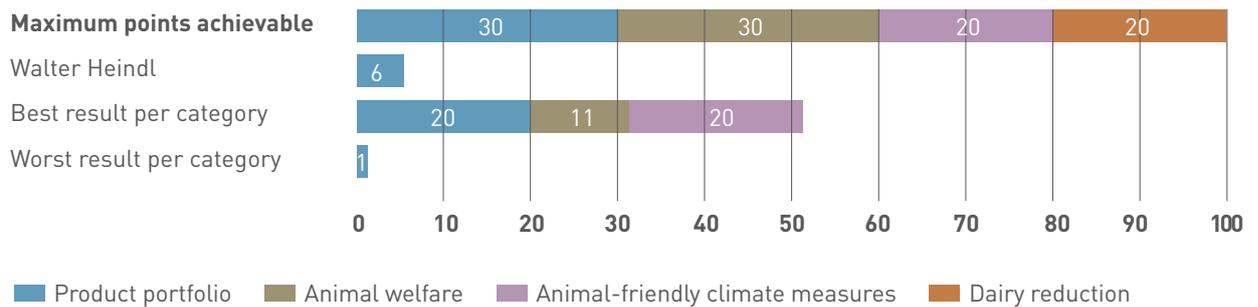
Tony's Chocolonely, hereinafter referred to as Tony's, is a Dutch chocolate producer with the focus on abolishing slavery from the cocoa chain. Tony's offered various dairy-free dark chocolates, one of which was with vegan caramel in some countries. It featured a vegan filter on their website¹²⁸, although it was not available on all country websites. A dairy-free 'milk' chocolate was not available in the research timeframe and Tony's took a very clear stance on vegan milk chocolate: It said on its website that it is not on its schedule¹², because its focus is on a 100% slave-free chocolate.

When it comes to traceability, Tony's only knew that the milk powder from its chocolate producer Barry Callebaut came from Europe. It said in the Q&A section of its website that it would prefer to switch to sustainably produced, traceable, and animal-friendly milk powder, which is why it was in talks with animal welfare organisations in the Netherlands,

scientists, stakeholders from the dairy industry, and other experts, concluding: 'We are on our way, but not there yet.'¹³⁰

Tony's has calculated its total emissions, most of which come from scopes 2 and 3. It revealed that milk powder, belonging to scope 3, was its biggest CO₂ offender, having caused 44% of emissions alone. That is why in its 2020/2021 Annual Fair report¹³¹, Tony's stated it wanted to reduce the impact of its milk powder on the total CO₂ emissions. It was not elaborated on how to achieve this though, and in its newest 2021/2022 report⁶, a similar statement was not to be found. Still, Tony's said to be continuously on the lookout for ways to reduce its carbon footprint, which it continued to offset.

While no statement on dairy reduction could be found, Tony's claimed to keep exploring innovations in alternative milk powder options in the climate context⁶.



Walter Heindl, hereinafter referred to as Heindl, is an Austrian family-run business that is known for its brand Confiserie Heindl that offers filled chocolates and pralines. Heindl offered a range of dairy-free dark chocolate products like its Schoko-Maroni¹³² (choco-chestnuts) or Orangenspalten (orange splits) that were vegan from the very beginning. Vegan products made up 25% of Heindl's portfolio which are prominently displayed in its online shop¹³³.

On its website¹³⁴, Heindl outlined a few sustainability and fair-trade topics, but not in depth. For example, some scope 1 and 2 climate measures are mentioned to reduce the ecological

footprint, but no concrete climate goals regarding scope 3 with a link to dairy were found.

Heindl explained that it did not substitute dairy with dairy-free alternatives because it would mean a high investment in machinery and equipment, due to vegan alternatives not having the same processing properties (flow behaviour, viscosity, yield point, fineness of the contained crystals), making it nearly impossible to produce both kinds in the same production line. Taste also played a role, but Heindl stated they are constantly testing and hoped to achieve satisfactory results in the medium term to then make a changeover.



5 Conclusion

Despite some positive initiatives by some of the chocolate companies, the results were all around disappointing, with not a single company achieving at least 50% as its score. It is clear that the topic of dairy is not (yet) a priority for chocolate companies, despite the extensive animal welfare and climate issues linked to dairy production. Instead, companies are – typically, but not as a standard – focused on the efforts towards fair trade and sustainability for their cocoa and palm oil.

Even those with climate goals only undertook measures such as optimising animal feed that reduces methane emissions by kilogram of milk, or by compensating/offsetting emissions, despite it being unrealistic for them to achieve the Paris Agreement goals this way. The emissions from milk might be seen by those companies as ‘unavoidable remaining emissions’ that have to be compensated for. Simply reducing their milk, for example through product reformulations, in order to avoid these emissions altogether, was not considered by any of the chocolate companies assessed as part of this ranking.

Given that none of the assessed chocolate companies had plans to reduce their dairy use, it is deeply concerning and unacceptable to see that even for the few who had animal welfare policies in place, they are still severely lacking where high-welfare husbandry systems are not referred to and the harmful practices that dairy cows are subjected to are not explicitly excluded. It is time milk chocolate is seen for what

it is: a dairy product made with the milk of cows who deserve a better life.

Although the presence of vegan options does not per se lead to a reduction in dairy products, it was still encouraging to see the recent developments that meant that most companies had at least one vegan chocolate, many even vegan ‘milk’ chocolate. However, often, in the case for companies with several brands, only one or two of their many brands offered a vegan version (KitKat from Nestlé, Terry’s Chocolate Orange from Carambar, Galaxy from Mars, etc.), which means they still represent a very small share of the total product portfolio of a company. Some companies argued they are not increasing their vegan ranges more (or even making their products completely vegan) due to a presumed lack of consumer acceptance. However, FOUR PAWS believes that companies have the choice to strategically determine their path and set clear signals, and many studies have shown that consumer acceptance is steadily increasing^{135–137}.

None of the chocolate companies assessed as part of the Atlas Challenge have yet committed to a binding dairy reduction approach, nor signed the FOUR PAWS commitment letter. However, FOUR PAWS is hopeful that a positive shift that is both measurable and doable will enable companies to take a stronger stance against the suffering of cattle in the dairy industry and to help mitigate the climate crisis.

Recommendations

- Creating at least one vegan version of each iconic milk chocolate bar.
- Investing in dairy from fermentation would eliminate any taste and texture differences.
- Implementing a transparent animal welfare policy based on excluding all the ten harmful practices and including the Five Domains principle.
- Calculating scope 3 emissions and setting science-based targets can be a long and complicated process. Having an interim goal before the final goal is in place, is important.
- Advertising ALL advantages of vegan chocolate by highlighting the company's own stance on the benefits of both animal welfare and environmental reasons.
- Non-dairy milk chocolates are encouraged, with conventional dairy chocolates coming from high-welfare husbandry systems.
- Focusing on dairy reduction, not reduction of emissions per kilogram.

Milk chocolate can be made vegan thanks to plant-based milks and nut butters.



© CCO

Commitment demands

FOUR PAWS expects action and progress from the chocolate companies committing to the following scope by 2027:

- Defining, implementing, and reporting concrete strategies in the CSR report and/or separate policy to reduce dairy use, which includes a clear statement highlighting the benefits of dairy reduction for animal welfare, and to reduce greenhouse gas emissions from livestock.
- Setting time-bound targets to phase out animal-derived ingredients from factory farming and support farmers to implement high-welfare husbandry systems.
- Reducing the dairy content of its existing chocolate range and ensuring that the reduction of dairy is not compensated with an increase/replacement of (an)other animal-derived ingredient(s) or additive(s).
- Introducing and/or expanding its current product range to include (more) vegan options, including a vegan counterpart to its most popular conventional chocolate product(s).
- Promoting vegan alternatives through consumer awareness to highlight animal- and climate-friendly food through specific marketing tools.

Demand for organic vegan chocolate is expected to reach USD 216.8 million by the end of 2032, with a value CAGR of 11.5%¹³⁸.

Between 2016 and 2020, vegan confectionery launches increased at 17% CAGR, while total confectionery launches only rose by less than 2%. In 2020, plant-based confectionery launches doubled¹³⁹.

What's next?

FOUR PAWS is looking forward to a positive exchange with the chocolate companies who are willing to support the integration of more sustainable food strategies to reduce the amount of dairy and increase plant-based products by signing the FOUR PAWS commitment letter.

Contact details:

For further information about the Atlas Challenge or if you wish to be one of the pioneers in the chocolate industry by committing to dairy reduction goals and increasing innovative plant-based offerings, please get in touch at TheAtlasChallenge@four-paws.org

6 Glossary

- **Antimicrobial resistance (AMR):** AMR is the ability of microorganisms such as bacteria, viruses, fungi, and parasites to resist the effects of antimicrobial drugs such as antibiotics, antivirals, and antifungals. This occurs when the microorganisms develop resistance to the drugs, making them less effective in treating infections. AMR is a serious global public health threat that can result in longer hospital stays, higher healthcare costs, and increased mortality rates. Factors contributing to AMR include the overuse and misuse of antimicrobial drugs in humans and animals, as well as poor infection prevention and control measures. Addressing AMR requires a coordinated and multifaceted approach that includes the appropriate use of antimicrobial drugs, infection prevention and control, surveillance and monitoring, and research and development of new antimicrobial agents.
- **Carbon footprint:** The total amount of greenhouse gases, particularly carbon dioxide (CO₂), released into the atmosphere as a result of human activities such as the consumption of fossil fuels, transportation, and production of goods and services. It is usually expressed in terms of carbon dioxide equivalent (CO₂e) and can be measured for organisations, products, events, and individuals. The carbon footprint is an important indicator of the environmental impact of human activities and is used to assess the level of contribution to climate change.
- **CO₂ equivalent:** Carbon dioxide equivalent or CO₂e is a metric enabling comparison of the global warming impact of different greenhouse gases, expressed in tons of CO₂ emissions with the same global warming potential as one metric ton of another greenhouse gas.
- **Corporate Social Responsibility (CSR):** CSR is a business approach that integrates social and environmental concerns into a company's operations and interactions with stakeholders. The goal of CSR is to create a positive impact on society and the environment while also achieving business success. CSR activities may include philanthropic initiatives, environmental sustainability practices, ethical business operations, and social impact programmes that benefit employees, customers, communities, and the environment. CSR is increasingly important for companies that want to demonstrate their commitment to social and environmental issues and build long-term relationships with stakeholders.
- **Environmental, Social, and Governance (ESG) report:** An ESG report is a document that provides information on a company's performance in relation to Environmental, Social, and Governance (ESG) factors. It typically includes an overview of the company's ESG strategy and policies, key performance indicators, and targets for improving ESG performance. ESG reports are used by investors and other stakeholders to assess a company's ESG performance and to make informed investment or business decisions.
- **Factory farming / industrial farming:** Factory farming is an industrial method of raising farm animals. On factory farms, animals are raised under conditions intended to maximise production at minimal cost. The animals in these systems regularly suffer from most cruel practices and their basic needs are not met. On factory farms, animals are confined in small spaces and the animals are kept indoors and/or in cages for their entire life.
- **Five Freedoms:** The Five Freedoms is a set of animal welfare principles that were originally proposed by the UK Farm Animal welfare Council in 1965. However, the Five Freedoms are outdated nowadays and an inadequate tool for assessing animal welfare. The Five Freedoms are as follows:
 - Freedom from hunger and thirst
 - Freedom from discomfort
 - Freedom from pain, injury, and disease
 - Freedom to express normal behaviour
 - Freedom from fear and distress
- **Five Domains Model:** The Five Domains Model is a modern tool for guiding animal welfare assessments. The Five Domains Model framework recognises that animals have complex emotional and cognitive lives, and that their welfare is influenced by factors beyond their physical health. It also emphasises the importance of promoting positive emotional states in animals, rather than simply preventing negative states. The Five Domains are as follows:
 - **Nutrition:** the provision of food and water to meet the animal's physiological needs;
 - **Environment:** the provision of a suitable physical and social environment to meet the animal's behavioural and social needs;
 - **Health:** the prevention and treatment of disease and injury to maintain the animal's physical health;
 - **Behaviour:** the provision of opportunities for the animal to perform normal behaviours and express natural instincts;
 - **Mental state:** the provision of conditions that promote positive emotional states and minimise negative emotional states.

- **Greenhouse gas (GHG) emissions:** GHG emissions are the release of gases into the atmosphere that contribute to global warming and climate change. The main GHGs are carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), which are released through human activities such as transportation, energy production, and agriculture. GHG emissions are usually expressed in terms of CO₂ equivalent (CO₂e). GHG emissions are an important measure of a country's, organisation's, or individual's contribution to the climate crisis. In the Paris Agreement, the signing countries agreed to limit global warming to 1.5 °C, meaning that greenhouse gas emissions must peak before 2025 at the latest and decline by 43% by 2030¹⁴⁰.
- **Greenwashing:** The practice of making false or exaggerated environmental claims to appear eco-conscious so consumers, civil society, and others believe that a company is doing more to protect the environment than it really is. Greenwashing can be done in many ways, such as by vague or unproven statements, using green imagery without actually changing the product, or highlighting minor environmental benefits while ignoring more significant impacts. Greenwashing is considered deceptive marketing and can harm consumer trust in legitimate environmental efforts.
- **High-welfare husbandry systems:** Keeping animals in a way that ensures the physical and mental wellbeing of animals and the freedom to express behaviours that are important to them. Apart from the fulfilment of basic requirements like clean water, adequate food, outdoor access, and contact to conspecifics, the environment needs to be appropriate to the animal's intrinsic/ species-specific needs.
- **Intergovernmental Panel on Climate Change (IPCC):** The IPCC is the United Nations body for assessing the science related to climate change. It provides regular assessments of the scientific basis of climate change, its impacts and future risks, and options for adaptation and mitigation.
- **Net zero:** Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Achieving net zero in the dairy industry requires reduction of GHG emissions by reducing the animal-sourced product production and consumption significantly¹⁴¹. The concept of net zero has been highly criticised in recent years as polluting companies and countries use carbon capture technology, carbon sequestration, and offsetting mechanisms instead of actively reducing their emissions, even though these methods of compensating emissions have not been proven, are often flawed, and are not enough to achieve what is required to meet the Paris Agreement 2050 goals¹⁴².
- **Plant-based/vegan:** free from all animal-derived products/ingredients (none of the following: meat, fish, eggs, dairy, honey, gelatine).
- **Science-Based Targets initiative (SBTi):** SBTi reviews and certifies the climate targets of companies who are members of the initiative. Companies' climate targets are certified as 1.5 °C or 2 °C compatible – in line with the goals of the Paris Climate Agreement – if they align with SBTi's own methodology and benchmarks. Although this is seen as a demonstration of leadership on climate action and a reduction of environmental impact by some, the SBTi also is being criticised for having a flawed and harmful methodology, having a lack of scrutiny of self-reported data by companies, and having potential conflicts of interest by civil society organisations and scientists^{143,144}.
- **Scope 1, 2, and 3 emissions:** A company's GHG emissions are classified into three 'scopes':
 - Scope 1 emissions are direct GHG emissions occurring from sources owned or controlled by the company, e.g. emissions from combustion in owned or controlled boilers, furnaces, vehicles, etc. or from chemical production in owned or controlled process equipment;
 - Scope 2 emissions are indirect emissions from the generation of purchased electricity consumed by the company;
 - Scope 3 emissions are all other indirect GHG emissions as a consequence of the activities of the company, but occur from sources not owned by the company, e.g. by extraction and production of purchased materials, transportation of purchased fuels and the use of sold products and services. Scope 3 is an optional reporting category¹⁴⁵.
- **United Nations Environment Programme (UNEP):** Since its inception in 1972, UNEP has been the global authority that sets the environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the UN system, and serves as an authoritative advocate for the global environment.

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8 Annex

8.1 Questionnaire and scoring requirements

No.	Question	Max. score	Scoring requirements
CSR REPORT / POLICY			
1.	<p>Do you have a specific and time-bound reduction goal for dairy?</p> <p><input type="checkbox"/> Yes. Please provide a reference, e.g. page of your CSR, separate policy, or other public commitments.</p> <p><input type="checkbox"/> No</p>	10	<p>Points: all or none</p> <p>Requirement:</p> <ol style="list-style-type: none"> 1. Time-bound 2. concrete, i.e. amount 3. dairy reduction <p>Example: 'By 20XX, we will have reduced dairy by Y%.'</p>
2.	<p>Do you have concrete measures to reduce dairy?</p> <p><input type="checkbox"/> Yes. Please specify which and provide a reference, e.g. page of your CSR, separate policy, or other public commitments.</p> <p><input type="checkbox"/> No</p>	5	<p>Points: all or none</p> <p>Requirement: at least one concrete measure that reduces dairy</p> <p>Examples: plans to expand vegan chocolate range and decrease dairy chocolate range, plans to reformulate products to eliminate or reduce dairy content, plans to purposefully market its vegan chocolate and not its dairy chocolate</p>
2. a)	<p>If yes, will you replace the reduced dairy content with a plant-based alternative?</p> <p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No, with another animal-based ingredient.</p>	5	<p>Points: all or none</p> <p>Requirement: Yes tick: replacing dairy with a plant-based alternative</p>
3.	<p>Do you have a specific and time-bound strategy to increase vegan 'milk' chocolate products?</p> <p><input type="checkbox"/> Yes. Please specify which and provide a reference, e.g. page of your CSR, separate policy, or other public commitments.</p> <p><input type="checkbox"/> No</p>	10	<p>Points: all or none</p> <p>Requirement:</p> <p>Examples: 'By 20XX, we will introduce Y amount of vegan products.' or: 'By 20XX, Y% of our chocolates will be vegan.'</p>
4.	<p>Have you set clear climate goals that are specifically linked to dairy (scope 3 emissions)?</p> <p><input type="checkbox"/> Yes. Please specify which and provide a reference year and starting situation and reference documentation, e.g. page of your CSR, separate policy, or other public commitments.</p> <p><input type="checkbox"/> No</p>	10	<p>Points: all or none</p> <p>Requirements:</p> <ol style="list-style-type: none"> 1. Time-bound 2. Percentage/amount of reduction (net zero is not enough if company does not explicitly mention reduction) 3. Reference year (company needs to know its current emissions in order to be able to reduce them) 4. Reduction needs to be specifically linked to dairy (dairy mentioned in relation to scope 3) <p>Example: 'By 20XX, we will have reduced scope 3 emissions (including dairy) by Y%.'</p>
5.	<p>Some methods of reducing the greenhouse gas emissions from dairy production can lead to lower animal welfare, e.g. by further increasing the productivity of high-performance dairy cows, feed management to lower methane emissions etc. How do you take into consideration animal welfare aspects?</p> <p>Please provide a reference along with your answer, e.g. page of your CSR, separate policy, or other public commitments.</p>	5	<p>Points: all or none</p> <p>Requirement: Mention of interconnectedness of animal welfare and emissions, concrete examples of positive measures, and no examples of negative measures</p> <p>Positive examples:</p> <ul style="list-style-type: none"> • Cows should live free range, outside, eating grass. Cows on meadows have higher welfare, being away from slatted floors, a lack of sufficiently comfortable floors and other bad health and welfare impacts such as claw diseases and lameness. This decreases the amount of slurry, methane, and ammonium produced in stables and the need for compound feed. • Primarily grass-fed cows. This will decrease the need for feed production like soya, corn etc., which is a big source of emission caused by land use and emissions from chemical fertilizers. Precondition is to move away from cow breeds, such as high yielding cows, that are overdependent on other protein and energy crops. • Lower stocking densities of cows, combined with a halt to the use of chemical fertilizers can support carbon sequestration and benefit biodiversity. Improved water management is needed in e.g. peat lands to avoid GHG emissions from soils. • Longer intercalving periods will not only strengthen the health of dairy cows but also result in fewer calves, less suffering, and lower GHG emissions. Lower consumption (and thus production) of milk can allow cows and the climate this much needed relief.

			<p>Negative examples:</p> <ul style="list-style-type: none"> ● Increased productivity of cows can cause cows to suffer. Climate mitigation should move away from driving productivity per cow. Intensive farming of dairy cattle by increasing the kg of milk to make the emissions per kg go down is not effective climate mitigation and comes with a lot of animal suffering. ● Breeding of specific cow breeds with a dominant focus of increasing productivity also increases suffering. Climate mitigation measures should not drive further highly productive breeds, but rather encourage more resilient breeds that are healthier and less dependent on specific types of high protein feed.
6.	<p>Can the sourced dairy be traced back to the farm of its origin?</p> <p><input type="checkbox"/> Yes. Please specify how.</p> <p><input type="checkbox"/> No</p>	5	<p>Points: all or none</p> <p>Requirement: Own explicit statement that the company can trace back all its dairy to the farm of origin. Does not require consumers to be able to trace it.</p> <p>Example: 'We can trace all of our sourced dairy back to its farm of origin.'</p>
7.	<p>Which of the following practices are explicitly excluded by your animal welfare policy?</p> <p>Please tick all that apply and provide a reference along with your answer, e.g. page of your CSR, separate policy, or other public commitments.</p> <p><input type="checkbox"/> Use of high-performance breeds (e.g. Holstein Friesian or Jersey Cattle)</p> <p><input type="checkbox"/> Killing of surplus calves (calves not used for breeding or fattening for meat production)</p> <p><input type="checkbox"/> Separation of calf and mother</p> <p><input type="checkbox"/> Young animals kept in isolation</p> <p><input type="checkbox"/> Mutilations (such as dehorning/ disbudding and tail docking, as well as castration without anaesthesia and analgesia)</p> <p><input type="checkbox"/> Concentrate feeding</p> <p><input type="checkbox"/> Tethering of the animals</p> <p><input type="checkbox"/> Prophylactic/metaphylactic application of antibiotics</p> <p><input type="checkbox"/> Live transport of more than 8 hours</p> <p><input type="checkbox"/> Live transport of unweaned animals</p> <p><input type="checkbox"/> No animal welfare policy in place</p>	10	<p>Points: One for each tick</p> <p>Requirement: Explicit exclusion of the harmful practice by own animal welfare policy (not by abiding the law) for all dairy (not just a portion) as minimum standard. For ticks that cover several practices (e.g. mutilations), all practices must be explicitly excluded to achieve a tick/point. Practices must currently be excluded, and not being phased out with no time-bound goal.</p> <p>Example: 'Our Animal welfare Policy includes clear exclusion criteria for all products of animal origin:</p> <ul style="list-style-type: none"> ● No prophylactic use of antibiotics [= 1 point] ● No individual husbandry for social animals [= 1 point] ● No permanent tethering' [= no point] <p>= total of 2 points. No point for tethering, as temporary tethering is still allowed.</p>
7. a)	<p>Do you have a time-bound goal to stop sourcing dairy from farms that still apply the practices not ticked under question 7?</p> <p><input type="checkbox"/> Yes. Please provide a reference, e.g. page of your CSR, separate policy, or other public commitments.</p> <p><input type="checkbox"/> No</p>	5	<p>Points: all or none</p> <p>Requirement:</p> <ol style="list-style-type: none"> 1. time-bound 2. explicitly mention all practices that are not yet forbidden by the company's animal welfare policy <p>Example: 'We aim to forbid the temporary tethering, all mutilations, [etc.] by 2030.'</p>
8.	<p>Do you have concrete measures to ensure that you are no longer sourcing dairy from farms applying the above practices in Q7, for example by putting pressure on dairy suppliers (or chocolate suppliers, if you are not sourcing dairy directly) or changing suppliers?</p> <p><input type="checkbox"/> Yes. Please specify which.</p> <p><input type="checkbox"/> No</p>	5	<p>Points: all or none</p> <p>Requirement: Concrete measures that need backing up by certification or 3rd party audit and that ensure they are no longer sourcing from farms applying at least one of the practices in Q7. The Five Freedoms principles are outdated and do not cover all Q7 practices.</p> <p>Example: 'We will terminate any contracts with suppliers who are still undertaking tethering, concentrate feeding, [etc].'</p>
9.	<p>Do you support farmers in the transition towards high-welfare husbandry systems, for example through fixed contracts, education, etc.?</p> <p><input type="checkbox"/> Yes. Please provide a reference/link.</p> <p><input type="checkbox"/> No. Please explain why not.</p>	5	<p>Points: all or none</p> <p>Requirement: Support of various types (fixed contracts, financial incentives, educational programmes, etc.) must be in relation to dairy cattle and must be specific about supporting high-welfare husbandry systems (Five Freedoms is not sufficient).</p> <p>Example: 'We implement programmes for good agricultural practices' is too vague.</p> <p>'Farmers who implement the requirements (concentrate feed reduction; no tethering) receive more money for the milk they produce' meets the requirements because it lends (financial) support towards high-welfare husbandry systems (which, amongst other things, require no concentrate feeding and no tethering).</p>

PRODUCT PORTFOLIO			
10.	How much dairy did you source for your chocolate production in 2021 globally? <i>Please convert to liters of cow's milk.</i>	0	non-scoring question
11.	What is your most popular milk chocolate product and how much dairy does it contain per 100g?	0	non-scoring question
12.	What, if any, dairy-free chocolate do you offer? Please tick all that apply. <input type="checkbox"/> Dairy-free 'milk' chocolate. <i>Please list all by name and where they are available.</i> <input type="checkbox"/> Dairy-free dark or white chocolate <input type="checkbox"/> No dairy-free chocolate	5	Points: 4 for dairy-free 'milk' chocolate, 1 for dairy-free dark or white chocolate, 5 for both, 0 for none. Requirement: Any chocolate product where the cocoa content is less than 50% and/or where it is marketed and accepted by consumers as a milk chocolate alternative. Milk from precision fermentation that contains milk allergens but is vegan also counts. As dairy-free dark or white chocolate counts any other dairy-free chocolate product. The products need to be currently on the market (but not necessarily in all countries) and cannot be discontinued.
12. a)	If you offer dairy-free 'milk' chocolate products, do you use a plant-based alternative to dairy? <input type="checkbox"/> Yes. <i>Please specify which.</i> <input type="checkbox"/> No, we use another animal-derived ingredient instead. <i>Please specify which.</i>	5	Points: all or none Requirement: Dairy being replaced with plant-based alternative, not another animal-derived ingredient. Example: rice syrup, hazelnut paste, oat milk, ...
13.	What are your reasons for not substituting (all) the dairy with dairy-free alternatives? <i>Please select all that apply.</i> <input type="checkbox"/> Lack of consumer acceptance <input type="checkbox"/> Costs <input type="checkbox"/> Ingredient functionality/property (taste, smell, binding agent, mouth feel, consistency ...) <input type="checkbox"/> Health/nutritional profile	0/0	non-scoring question
MARKETING STRATEGIES			
14.	Do you have marketing measures to specifically promote your vegan products (e.g. on social media, TV, print ads, own website page, ...)? <input type="checkbox"/> Yes. <i>Please provide a reference/link.</i> <input type="checkbox"/> No. <i>Please explain why not.</i> <input type="checkbox"/> Not applicable (no vegan products currently available)	5	Points: all or none Requirement: <ul style="list-style-type: none"> • A website page, social media post, press release. Not a mention in the CSR policy. • Marketing of any vegan chocolate: 'milk', dark, white, etc. as vegan; not promoting a product that happens to be vegan without mentioning that it is vegan. • Marketing from company itself or at least one of their brands and/or those in partnership with; not brands the company invested in. • Content can be as old as 2019 to cover pre-pandemic period.
15.	Do you highlight and spread awareness about the positive impact dairy-free products have on animal welfare and the environment? <input type="checkbox"/> Yes. <i>Please provide a reference/link.</i> <input type="checkbox"/> No. <i>Please explain why not.</i>	5	Points: all or none Requirement: <ul style="list-style-type: none"> • As highlighting and spreading awareness counts: a website page, social media post, press release, podcast, interview, etc. Not a mention in the CSR policy. • Marketing has to mention both environmental and animal welfare benefits. • Benefits can be mentioned by simply stating that those are the reasons consumers have to choose dairy-free/vegan products. • Statement can be from company itself or at least one of their brands and/or those in partnership with; not brands the company invested in. Example: 'Our vegan chocolate is animal- and environment- friendly.'
FUTURE VISION			
16.	Are you planning to use dairy products from precision fermentation? <input type="checkbox"/> Yes. <i>Please provide a reference/link if already available.</i> <input type="checkbox"/> No. <i>Please explain why not.</i>	5	Points: all or none Requirement: Having invested in research towards, developing or already selling milk from fermentation.
TOTAL POINTS		100	

8.2 Result overview

Chocolate company	Alfred Ritter	Carambar & Co	Coop	Ferrero	Hosta Group	Josef Manner	Lindt & Sprüngli	Ludwig Schokolade (Krüger Group)	Mars, Incorporated	Migros	Mondelēz International	Nestlé	Stollwerck (Baronie)	August Storck	The Hershey Company	Tiger Brands	Tony's Chocolonely	Walter Heindl	
																			
PRODUCT PORTFOLIO																			
Availability of dairy-free dark chocolate	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Availability of dairy-free milk chocolate	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✗	✗	✗	✗
Use of vegan alternative(s) in dairy-free 'milk' chocolate	✓	✓	✓	—	—	✓	✓	✓	✓	✓	✓	✓	—	—	✓	—	—	—	—
Marketing measures promoting vegan chocolates	✓	✓	✓	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✓	✓	✓
Strategy to increase vegan 'milk' chocolate	?	?	✗	✗	?	?	?	?	?	?	?	✗	?	?	?	?	?	?	?
(Plan to) use dairy products from precision fermentation	?	?	✗	✗	?	?	?	?	✓	?	?	✓	?	?	?	?	?	?	?
ANIMAL WELFARE																			
Dairy traceability	?	?	✓	✓	?	?	?	?	?	?	?	only fresh milk	?	?	?	?	?	?	?
Exclusion of practices harming animal welfare	?	?	max 8. h transport tail docking	✗	?	?	?	?	✗	young calves not isolated	✗	exclude high-performance breeds tail docking, dehorning, castration w/o anesthesia	?	?	✗	?	?	?	?
Goal to eliminate remaining practices harming animal welfare	?	?	✗	✗	?	?	?	?	?	?	?	✗	?	?	?	?	?	?	?
Concrete measures to eliminate practices harming animal welfare	?	?	✗	✗	?	?	?	?	?	?	?	✓	?	?	?	?	?	?	?
Support farmers in transitioning towards high-welfare husbandry systems	?	?	✓	✗	?	?	?	?	?	✓	?	✗	?	?	?	?	?	?	?
ANIMAL-FRIENDLY CLIMATE MEASURES																			
Scope 3 climate goals linked to dairy	?	?	✓	✓	?	?	✓	?	✓	✓	✓	✓	?	?	✓	?	?	?	?
Considering animal welfare when reducing emissions	?	?	✗	✗	?	?	?	?	?	✓	?	✗	?	?	?	?	?	?	?
Highlighting positive impact of dairy-free products	✗	✗	✓	✗	✗	✗	✗	✓	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗	✗
DAIRY REDUCTION																			
Dairy reduction goal	?	?	✗	✗	?	?	?	?	?	?	?	✗	?	?	?	?	?	?	?
Concrete measures to reduce dairy	?	?	✗	✗	?	?	?	?	?	?	?	✗	?	?	?	?	?	?	?
In case of reduction dairy will be replaced by vegan alternative(s)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

✓ Yes, ✗ No, ? No (clear) information given / could be publicly found within the allocated research time, — Not applicable

This table provides an overview of the chocolate companies evaluated as part of the Chocolate Challenge ranking and maps out their results according to the asked questions, re-arranged into four thematic categories. The number of ✓ does not necessarily correlate with the score, given the different weighting of each question.

Disclaimer: FOUR PAWS conducted the research based on publicly available information online between September 2022 and January 2023. Any changes that were implemented by the selected chocolate companies after this set time frame were not taken into account.

As part of the research and analysis, FOUR PAWS sent a questionnaire to the selected chocolate companies for their input, which was only answered by Coop, Nestlé, and Ferrero. Migros, Mars, Mondelēz, and Walter Heindl provided some information via e-mail. All the other companies were evaluated solely by FOUR PAWS' research on publicly available information online.

