

2nd Public Commitments Report - Minerva Foods
(Base year - 2023)

Table of contents

1. Animal Welfare at Minerva Foods	02
2. Business Benchmark on Farm Animal Welfare	02
3. Introduction to the 2nd Commitments Report	03
4. Mapping status of the supply chain	06
5. Global status of good practices of animal welfare	07
6. Antibiotics	09
7. Reduced reliance on animal protein	12
8. Certifications on animal welfare	14
9. Specie-specific commitments	15
10. Final message and future advances	53
11. Glossary	54
12. Appendix	59

1. Animal Welfare at Minerva Foods

Our mission at Minerva Foods is to foster connections between people, food, and nature. We recognize the importance of **animal welfare** as a core [value](#) within our sustainability pillar. We view animals as sentient beings and are committed to sharing and upholding the principles of the Five Domains of Animal Welfare, as recommended by the Farm Animal Welfare Committee ([FAWC](#)).

2. Business Benchmark on Farm Animal Welfare ([BBFAW](#))

At Minerva Foods, we are committed to upholding the highest standards of animal welfare, both within our own operations and in our relationships with suppliers, customers, and other stakeholders. Our participation in the **BBFAW** ranking serves to reaffirm our commitment to addressing this issue. We are pleased to report that we have made significant progress since the initial assessment in 2018, when we were classified in Tier 6. In the subsequent assessments, we were classified in Tier 5 in 2019, moved up to Tier 3 in 2020 and 2021, by following the public disclosure of our strategies and the rollout of more robust action plans. During this period, we initiated a program to obtain animal welfare certifications for all Minerva Foods slaughter units. This included the [North American Meat Institute](#) (NAMI) certification, which was achieved in 2023.

The BBFAW assessments were suspended in 2022 to allow for revisions to the methodology. They were then resumed in 2023 with the inclusion of additional questions and scores related to "*Reducing Reliance on Animal Protein*." Considering this new scenario, the company has been downgraded to Tier 4E. Nevertheless, of the 150 companies assessed in 2023, we are pleased to be among the 27 best classified. In 2024, we attended the London Stock announcement of the BBFAW results for the base year 2022. At that time, we refined our strategies and action plans to maintain our progress in the pursuit of exemplary animal welfare standards in collaboration with the primary NGOs involved in the benchmark such as [Compassion in World Farming](#) and [Four Paws](#).

3. Introduction of the 2nd Public Commitments Report

In 2023, we achieved a significant company milestone with the release of our inaugural Public Commitment Report (base year 2022). The report outlines 52 commitments on key animal welfare issues, including the use of antibiotics, close confinement, environmental enrichment, routine mutilations, long-distance live transport, inhumane practices, pre-slaughter stunning, animal welfare certifications, and reducing reliance on animal-sourced foods. The targets for each commitment range between 2024 and 2045. These targets were initially set based on the level of complexity of each supply chain, particularly in terms of the difficulty at accessing information and traceability. These commitments are subject to ongoing review to ensure compliance and may be subject to change.

The release of the public commitments report provides a clear and transparent overview of our approach to animal welfare in the supply chain, offering customers and suppliers a comprehensive understanding of our strategy and progress towards excellence. In addition to communicating Minerva Foods' expectations regarding recommended practices, we also provide comprehensive technical assistance to facilitate the implementation of improvements within the supply chain. This support is evidenced by the promotion of training and capacity-building courses in animal welfare, as well as the monitoring of individualized action plans. Further details on the training courses promoted by our company in recent years can be found in our [Animal Welfare Report](#) (base year 2023).

Following the initial assessment of public commitments by leading global animal welfare and sustainability management agencies such as [BBFAW](#) and [Coller Fairr](#), we have developed action plans to advance our efforts in mapping animal welfare practices across the supply chain, altering the profile of suppliers, and restructuring our corporate animal welfare operations. For instance, based on the indicators monitored via the self-assessment questionnaires, we were able to prioritize suppliers that were more aligned with our animal welfare guidelines. To achieve this goal, in 2023 we established a dedicated office to address “supplier-related matters”.

The implementation and oversight of these action plans have significantly advanced the objectives outlined in the public commitments. We are pleased to announce the release of our **second report on Public Commitments to Animal Welfare**. This report presents the results and progress on the 52 commitments, along with the latest compliance status (base year 2023) for the entire Minerva Foods supply chain. Topics such as the use of antibiotics, animal welfare certifications, and strategies geared towards reducing the company's reliance on animal protein are subject to global commitments, while the remaining topics are species-specific.

Our global animal protein chain encompasses the production and marketing of fresh meat, protein processing, product distribution, and the processing of slaughter by-products. These by-products are derived from a range of species, including cattle, sheep, chickens, pigs, fish, dairy products, and eggs. Additionally, our supply chain includes non-animal products (see Table 1). Our chain does not include seafood, veal, geese, ducks, or rabbits. Additionally, we do not utilize **cloned** animals or those subjected to any **genetic engineering practices**. As detailed in the [Animal Welfare Report](#) (base year 2023), **Minerva Foods has not exported live cattle** since 2023.

Table 1: Minerva Foods global supply chain

Species / raw material / derivatives	Slaughter	Processing	Ingredients	Distribution	Volume (ton)	% total of chain	Country
Beef cattle	X	X	X	X	1,035,603	90.61	Argentina, Brazil, Colombia, Paraguay and Uruguay
Sheep	X			X	79,814	6.98	Australia and Brazil
Broiler		X		X	9,878	0.86	Argentina and Brazil
Pork		X		X	6,668	0.58	Argentina and Brazil
Fish					6,913	0.60	Brazil
Dairy Products			X		39.2	0.0034	Argentina
Egg Products			X		2.1	0.00018	Argentina
Non-animal products			X	X	4,000	0.35	Argentina and Brazil
Minerva Foods' total animal protein chain					1,138,917.3	99.65	-
Minerva Foods' total global supply chain					1,142,917.3	100	-

The 2nd Public Commitments Report is structured as follows:

- a)** Mapping the status of animal welfare indicators obtained through self-assessment questionnaires.
- b)** Reporting data and providing a global status of good animal welfare practices within the company.
- c)** Global public commitments and data reporting on antibiotic use and animal welfare certifications, along with the Company's key actions and commitments to reduce reliance on animal-sourced foods.
- d)** Data reporting, presentation, and discussion of species-specific public commitments, along with the status of target achievement.
- e)** Concluding message and future advances.

f) Glossary

This report introduces three new public commitments: two of them are related to reduce reliance on animal protein and another one is related to CAFOs. Additionally, it presents for the first time data on the quantity of antibiotics used by our suppliers and key performance indicators (KPIs) for the pork, broiler, and fish supply chains. To enhance understanding, we have included a glossary of terms.

4. Mapping Animal Welfare Indicators

We achieved a significant milestone in mapping animal welfare indicators through the self-assessment questionnaires distributed to our suppliers. In 2022, we reached **32.50%** of the global volume mapped, and in 2023, we surpassed this figure, reaching **50.0%** (Figure 1).

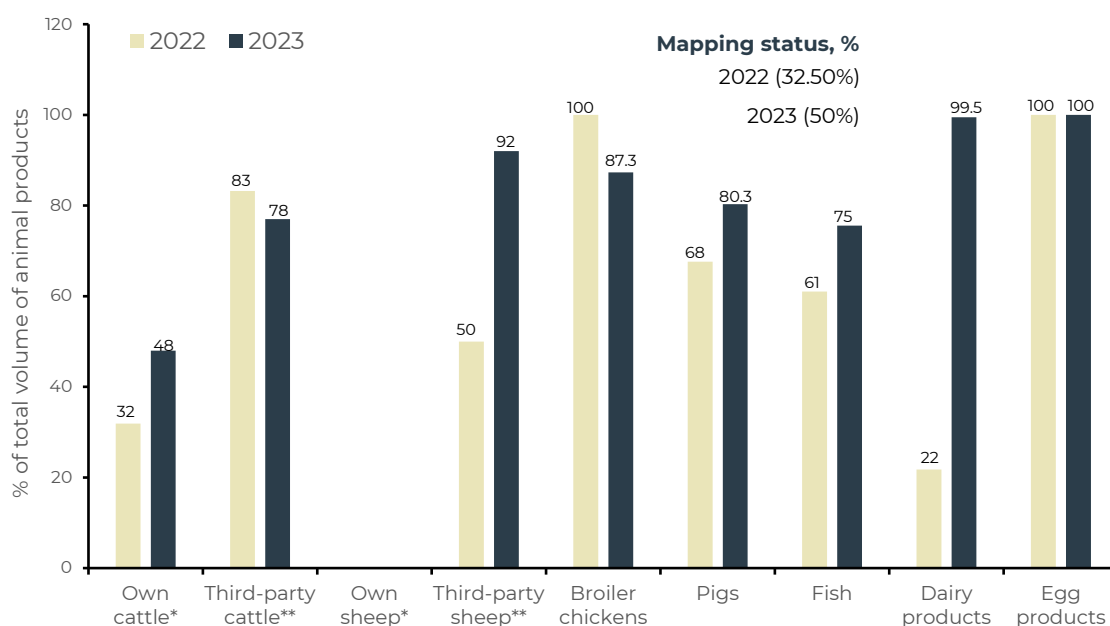


Figure 1. The mapping of the status of animal welfare practices for each company chain obtained through the self-assessment questionnaires. *Own cattle and sheep: originate from animals slaughtered in our own slaughter facilities. **Third-party cattle and sheep: originate from raw materials and/or by-products purchased from third parties or slaughter units not under the Minerva Foods umbrella.

It is important to note that our own cattle and sheep chain has achieved 100% mapping for certain animal welfare indicators. This is due to the

information being controlled at our unit operations, which include data on the number of animals pre-slaughter stunned, long-distance live transport, production systems (pasture-based systems or CAFOs), and castration. The remaining indicators are obtained exclusively through self-assessment. For other species in the supply chain, including broiler, pigs, fish, sheep, third-party cattle, dairy products, and egg products, all collected indicators are derived from self-assessment.

We made progress in mapping the supply chains of our own cattle, pigs, fish, and dairy suppliers; however, there was a slight decline in the share of mapped supply chains for third-party cattle and broiler chickens (Figure 1). These advancements stem from closer collaboration between the animal welfare department and the company's purchasing sector, which held meetings, technical visits, and training sessions with raw material suppliers. Additionally, between 2022 and 2023, the self-assessment questionnaires were revised for greater clarity and ease of completion. Conversely, during this same period, changes and additions of new suppliers occurred, particularly in the third-party chicken and beef distribution chains, resulting in a reduction in the mapping status.

5. Global Status of Good Animal Welfare Practices

This section presents a global mapping of good animal welfare practices in the Minerva Foods supply chain (Figure 2). For more detailed descriptions of closed confinement, environmental enrichment, mutilation, and stunning methods, please refer to the glossary of terms, which is based on BBFAW definitions and guidelines.

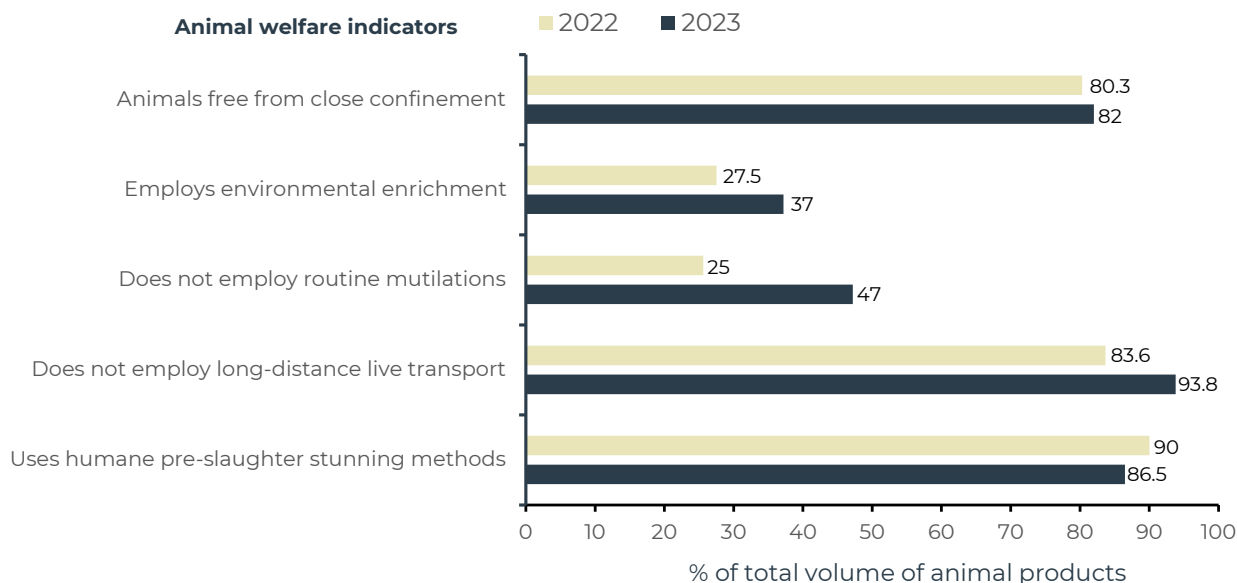


Figure 2: Data reported based on the total volume of Minerva Foods' animal protein production chain, considering: 2022 = 1,041,403 tons; 2023 = 1,138,917.3 tons.

1) **Close Confinement:** We prioritize acquisition of animals, raw materials, and ingredients of animal origin from production systems where animals are kept free from close confinement. In 2023, **82%** of the animals in Minerva Foods' supply chain were raised free from close confinement.

2) **Environmental enrichment:** We encourage suppliers to provide environmental enrichment sources for the animals, with the objective of enabling them to express natural behaviors when they are motivated to do so. In 2023, **37.20%** of suppliers of animals, raw materials, and ingredients of animal origin utilized some type of environmental enrichment.

3) **Routine mutilations:** We encourage suppliers to refrain from any form of routine mutilation and, at the same time, we encourage the use of alternative, non-painful methods. In 2023, **47.20%** of suppliers of animals, raw materials, and ingredients of animal origin reported that they do not perform any forms of routine mutilation within the supply chain.

4) **Long-distance live transport:** We work to ensure that animals of our supply chain are transported safely, with travel times of no more than eight hours for cattle, sheep, pigs, and fish, and no more than four hours for broiler chickens

and laying hens. In 2023, 93.8% of the animals in our supply chain were not subjected to long travel times during the pre-slaughter transportation phase.

5) **Humane methods of pre-slaughter stunning:** We work to ensure that all animals in our chain are stunned prior to slaughter. The exception is limited to specific markets that require religious slaughter. In some instances, animals may be subject to non-pre-slaughter stunning. In 2023, **86.5%** of the animals in our supply chain underwent pre-slaughter stunning.

6. Antibiotics

Antibiotics		
Public commitment	Target Year	Status
<p>By 2040, 80% of the global animal product chain will no longer utilize prophylactic and metaphylactic antibiotics.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022-2025: Conduct a comprehensive mapping of the cattle, sheep, and broiler chicken supply chains on this topic. ○ 2024-2028: Complete the mapping for the pork, laying hen, dairy cows and fish supply chains on this topic. ○ 2024-2026: Engage suppliers in this topic and the company's guidelines through seminars and technical visits. ○ 2029-2030: Provide reports on the classification of antibiotics as critically important, highly important, or important, along with details on their use. ○ 2030-2032: Report on the quantity of antibiotics used across beef cattle, broiler, and pork supply chains. ○ 2031-2039: Gradually adapt, forecast, and replace suppliers who fail to comply with the established policy. 	2040	In progress (41.1%)

In alignment with the guidance provided by the World Health Organization ([WHO](#)) and the [Global Roundtable for Sustainable Beef](#), Minerva

Foods is taking measures to address the emergence of antibiotic resistance. To achieve this goal, Minerva Foods encourages suppliers to refrain from using antibiotics and/or antimicrobials prophylactically, metaphylactically, or as a growth promoter. It is recommended that antibiotics must be used in a rational manner, prescribed by a veterinarian, solely for the treatment of clinical cases, as a strategy to mitigate animal suffering. Furthermore, we encourage the use of alternative approaches to the use of critically important antibiotics, such as the use of probiotics and prebiotics, organic acids, rotation of rearing spaces, environmental enrichment, low density, and others. Finally, we believe that implementing good animal welfare practices is one of the main ways to reduce the need for antibiotics in the company's supply chain.

In 2023, **41.1%** of Minerva Foods' suppliers reported not using antibiotics prophylactically, metaphylactically, or as a growth promoter (Figure 3). A total of **6%** of suppliers still reported use of antibiotics prophylactically, **1.5%** reported using them metaphylactically, and **0.1%** reported using them as a growth promoter. Furthermore, **1.5%** of suppliers indicated that they have not yet implemented controls on antibiotic use.

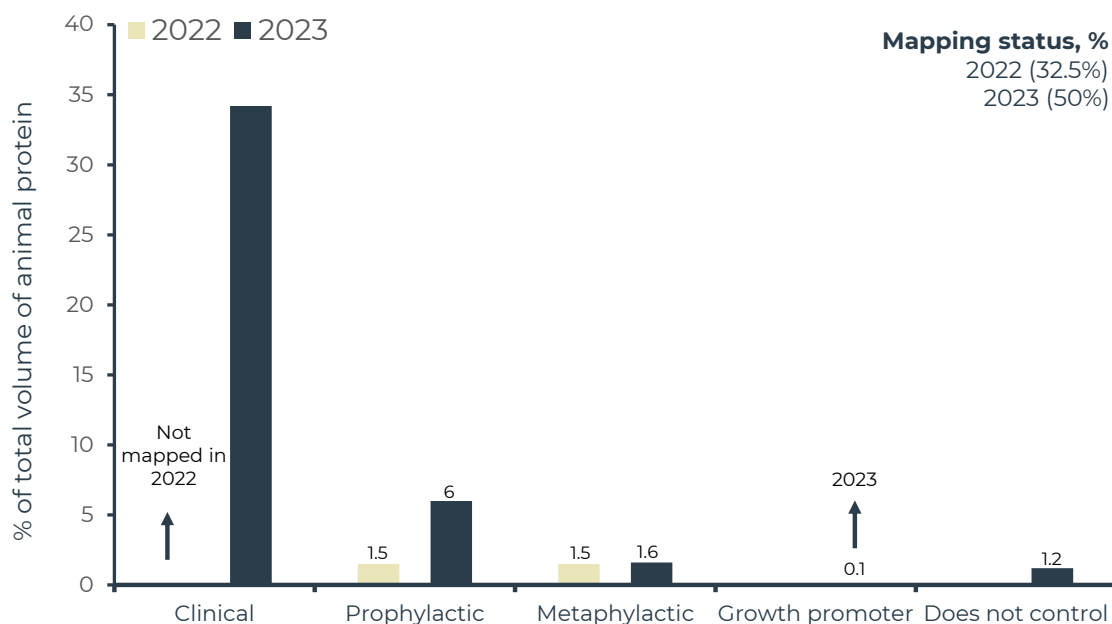


Figure 3: Antibiotic Use in the Global Animal Supply Chain of Minerva Foods (Comparison 2022 -2023). Data reported as the proportion of the total volume of animal products purchased by Minerva Foods: 2022 = 1,041,403 tons; 2023 = 1,138,917.3 tons.

Figure 4 illustrates the outcomes for each species within the supply chain. Furthermore, Table 2 outlines the principal antibiotics used in the beef cattle, pork and broiler chicken supply chains, along with the typical dosage. In the beef and dairy cattle supply chain, antibiotic therapies are primarily employed for the treatment of clinical cases. However, **6.3%** and **1.3%** of beef cattle suppliers still reported using antibiotics prophylactically and metaphylactically, respectively. This was mainly to prevent and/or treat diseases of the respiratory system, ruminal acidosis and in protocols for adapting animals to new nutritional plans.

The highest rates of prophylactic, metaphylactic and growth-promoting antibiotic use are reported in the broiler, pork and fish supply chains. In the broiler chain, antibiotics are used primarily for the treatment of respiratory diseases. In the pork chain, they are used for the treatment and/or prevention of bacterial infections of the digestive system. In the fish chain, they are used for the treatment and/or prevention of bacterial infections. It is notable that a significant share of suppliers in these chains also reported not controlling antibiotic use (Figure 4).

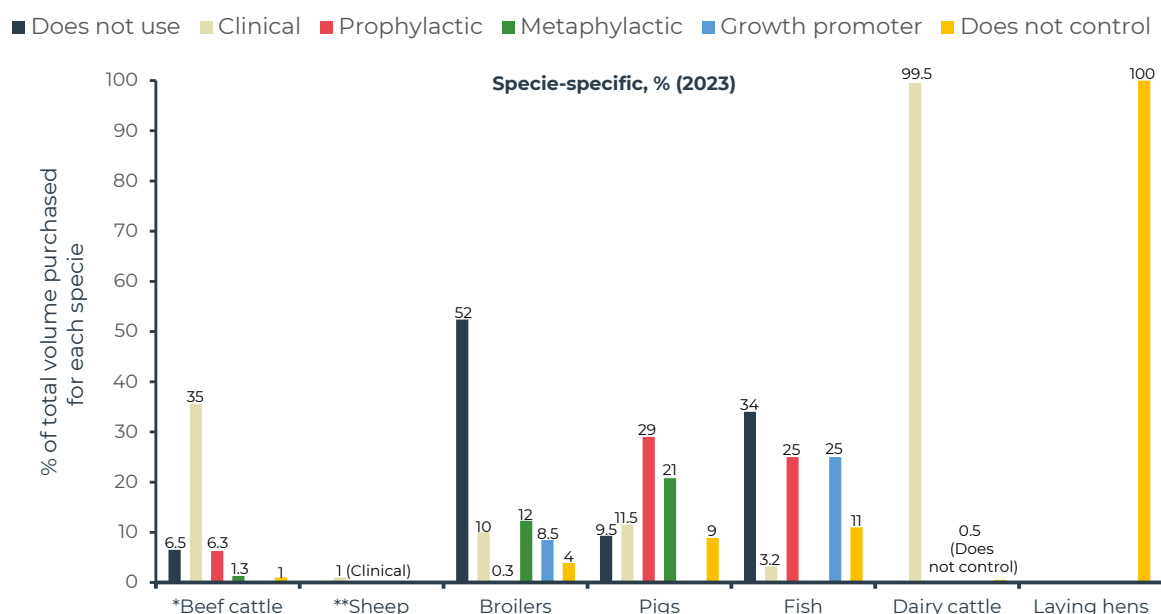


Figure 4: Various forms of antibiotic use for each species in the Minerva Foods supply chain in 2023. * Global beef chain (i.e., own cattle + third-party cattle); ** Global sheep supply chain (i.e., in-house sheep + third parties). Please refer to Figure 1 for reference of the mapping status for each supply chain.

Table 2: Types of antibiotics and average quantity reported for the beef cattle, pig and broiler chains.

Medically important antibiotics	*Beef cattle, mg kg ⁻¹	Pigs, mg kg ⁻¹	Broiler chickens, mg kg ⁻¹
Critically important			
Quinolon	26	9.6	17
Cephalosporin (1 st - 2 nd generation)	33.75	-	-
Cephalosporin (3 rd - 4 th generation)	25.25	29.6	0.05
Macrolides	14.9	20	30
Glycopeptides	49	-	-
Polymixins	56	-	-
Penicilins	49	14	20
Highly important			
Aminoglycosids	28.5	12.5	10
Tetracyclines	56.3	20	26
Sulfonamides	-	-	25.4

*Global beef cattle chain (i.e. own cattle + third-party cattle)

The company will develop targeted action plans to assist the supply chain in implementing protocols and technologies for gathering data on antibiotic applications, with a particular emphasis on those who have indicated that they currently lack the necessary resources to control this information. Concurrently, we will also disseminate recommendations for effective therapies and management strategies with the objective of reducing the prophylactic and metaphylactic use of antibiotics. This will be achieved through a series of annual workshops, technical visits, publicity campaigns and the distribution of informational booklets.

7. Reducing reliance on animal-sourced foods

Reducing reliance on animal-sourced foods		
Public commitment	Target Year	Status
Reducing reliance on animal-sourced foods through waste reduction, improved raw material utilization, business focus realignment, protein diversification and product reformulation on a global scale.	Ongoing commitment	In progress
To ensure that 15% of total hamburger production comes from formulations with a higher proportion of plant-based ingredients.	Ongoing commitment	Achieved (16%)
By 2023, to replace the ingredient egg in all (100%) traditional pâté lines by plant-based products ingredients (e.g., potato and cassava flour).	Ongoing commitment	Achieved (100%)

Minerva Foods has established clear business strategies aimed at reducing reliance on animal-sourced foods. These strategies focus on reducing waste, addressed through [Minerva Biodiesel](#); maximizing the use of raw materials, managed by [Minerva Casings](#), [Minerva Ingredients](#), and [Minerva Leather](#); and shifting business priorities, supported by the Corporate Venture Capital initiative, which invests in startups that expand beyond the animal protein value chain. Additionally, these efforts are further advanced through the [MyCarbon](#) subsidiary. For more details on the key actions and targets in each of these areas, please refer to **Appendix I** of this report.

Minerva Foods is also investing in the production and marketing of products with alternative proteins, including soy milanesas and patties (hamburger patties that contain **60%** vegetable raw materials in their formulation). A total of 124 tons of milanese soybeans were sold in 2023, an increase of **17%** compared to 2022. In 2023, **16%** of the company's burger production (1,620 tons) was destined for patties. Furthermore, in 2023, as in 2022, the company continued to sell **4,000** tons of other plant-based products, including wine, potatoes, and chocolate, among others.

All animal welfare KPIs, along with the topic of reducing reliance on animal protein, are the responsibility of our global Animal Welfare manager, Tâmara Borges, who coordinates operations in this area, while the team of R&D is assigned to execution. The topic is also discussed in meetings at C-level, administrative and advisory boards, with the participation of the company's CEO. The entire technical staff of the Company's corporate on Animal Welfare is responsible for all activities and execution of work plans related to animal welfare KPI's and for reducing reliance on animal protein, at daily basis. A recent example is the replacement of egg powder, previously used in the production of the traditional pâté line, with plant-based ingredients like wheat and potato flour. After experimental trials conducted between 2022 and 2023, egg powder was completely removed from the company's traditional pâté formulation, leading to a reduction of **1 ton** of powder egg purchases in 2023.

8. Animal Welfare Certifications

Animal Welfare Certifications		
Public commitment	Target Year	Status
<p>By 2024, obtain animal welfare certification for all the company's units.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2023-2024: Certification of all cattle slaughter units by the NAMI (North American Meat Institute) protocol. 2022-2024: Certification of all sheep slaughter units under the Australian Livestock Processing Industry Animal Welfare Certification System (AAWCS) protocol. 	2024	Achieved (100%)

In 2023, Minerva Foods achieved **100%** certification of its cattle slaughter units in animal welfare, with 20 plants certified through unannounced audits. Furthermore, all sheep slaughtering in Australia is certified by the Australian Livestock Processing Industry Animal Welfare Certification System (AAWCS). For further information on the company's animal welfare certifications, please refer to our [Animal Welfare Report](#) (pages 13-14).

In 2023, we began mapping animal welfare certifications across our third-party supply chain using self-assessment questionnaires. In the beef supply chain, **40%** of suppliers reported having animal welfare certifications, including [PAACO](#), [Grass Fed](#), and [AW Approved](#). In the broiler chain, **60%** of suppliers reported certification (e.g., [GAP](#) and [PAACO](#)), while **25%** in the fish chain (e.g., [ASC](#) and [BAP](#)) and **10%** in the pork chain (e.g., [Welfcert](#)) reported the same. Our goal is to implement engagement initiatives aimed at increasing the percentage of suppliers from the third-party with animal welfare certifications.

9. Species-specific Public Commitments

9.1 Beef cattle

Minerva Foods' supply chain is comprised primarily of beef cattle, representing **90.6%** of the total. In 2023, Minerva Foods purchased 1,035,603 tons of beef raw material, **88.90%** of which was sourced from the company's own beef supply chain and **1.70%** from third-party cattle suppliers. The global commitments for this chain are outlined below.

CAFOs

CAFOs			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
Ensure at least 40% of cattle and beef raw materials are purchased from production systems that keep animals free of CAFOs.	Ongoing commitment	99.5%	Achieved (78.5)

Minerva Foods prioritizes sourcing animals and raw materials from production systems that ensure cattle are not confined in concentrated animal feeding operations (CAFOs). In 2023, **78.5%** of the raw material in the company's global beef supply chain was sourced from systems that maintain animals free from CAFOs (Figure 5). This advance is a direct result of the company's strategic expansion into markets that prioritize good animal welfare practices in their purchasing decisions. It should be noted, however, that this result is also contingent upon the availability of pasture areas, which in turn is influenced by meteorological conditions throughout the year, especially rainfall.

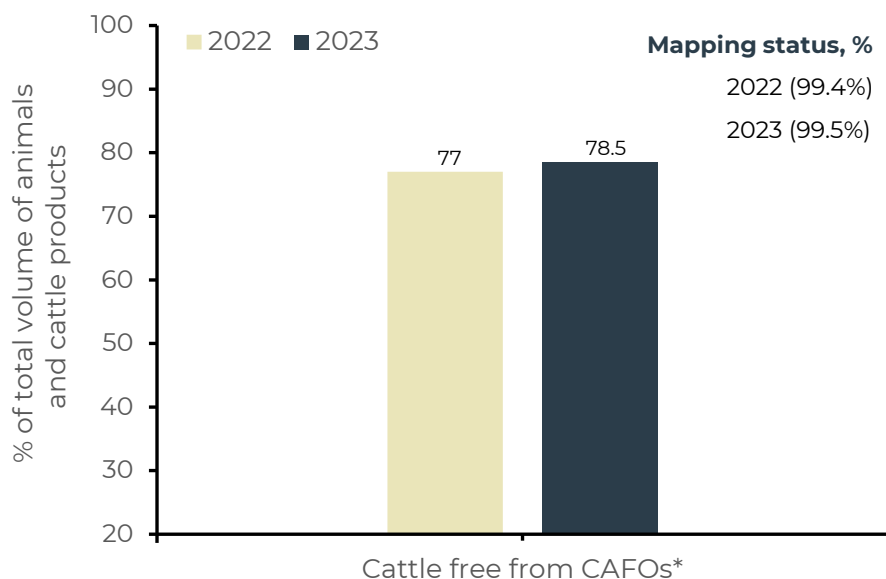


Figure 5: Share of the global beef chain (i.e. own cattle + third-party cattle) kept free from CAFOs. Total volume of animals and raw materials purchased by the Company's global beef chain (2022 = 1,017,488 tons; 2023 = 1,035,603 tons).

*For further details on the cattle ranching systems used for the company sourced cattle, see the Glossary of Terms and the [Animal Welfare Report](#).

To promote the rearing of cattle free from CAFOs, the company is developing a strategy to communicate and report animal welfare risk factors associated with these systems. For instance, we will implement a scientific metric to quantify the negative mental states of the company's cattle kept in CAFOs through the [Welfare Footprint](#) project. Additionally, we plan to advance a strategy focused on obtaining animal welfare certifications for farmers, with an emphasis on achieving 'green' or sustainable pasture production seals. This approach will open access to niche markets and, consequently, increase the company's demand for cattle raised free from CAFOs.

Environmental enrichment

Environmental enrichment			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
By 2035, 35% of cattle and beef raw materials will be purchased from cattle ranching systems that employ sources of environmental enrichment.	2035	49%	Achieved (36%)
Interim targets:			

- 2022-2025: Comprehensive mapping of the cattle chain on this issue.
- 2024-2030: Projection and incentive farmers to implement sources of environmental enrichment

At Minerva Foods' slaughter units, **93%** of the animals have access to artificial shading and water sprinkler in the holding pens. In 2023, **36%** of animals at the farm level were purchased from suppliers that used environmental enrichment practices, specifically the use of shade and water sprinklers (Figure 6). Other environmental enrichment practices reported were the presence of spaces that allow for hiding and skin care enrichment (e.g., scratching and rubbing (static brushes)).

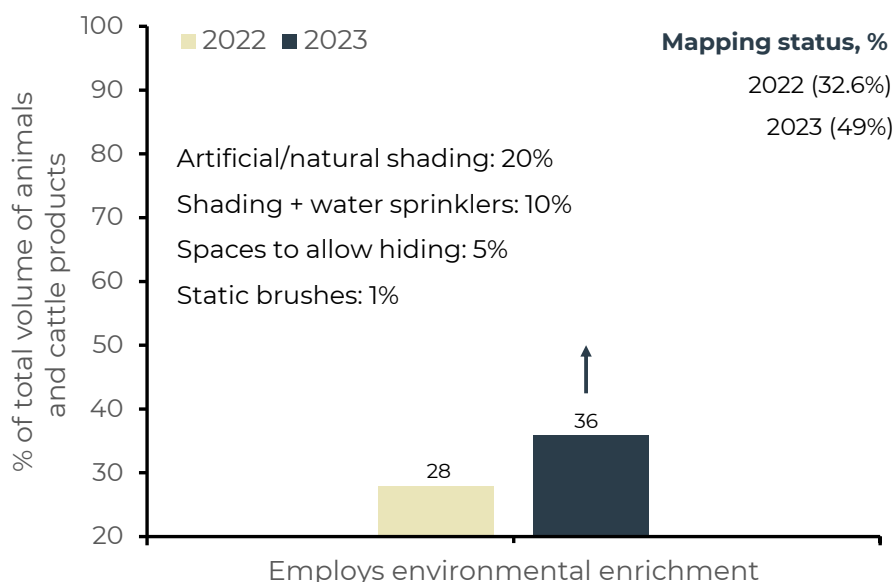


Figure 6: Share of the global beef chain employing environmental enrichment sources. Total volume of animals and raw materials purchased for the Company's global beef chain (2022 = 1,017,488 tons; 2023 = 1,035,603 tons).

Providing shade and evaporative cooling systems can help create a more favorable microclimate for animals, especially in tropical environments where solar radiation and radiant temperature levels are consistently high throughout the year. However, for shade to be effective, it must be available in sufficient quantities to ensure that all animals can access it when needed. Restricting access can lead to increased aggression and may prevent subordinate animals from utilizing this resource. In future reports, we plan to use geospatial

referencing technologies to map and report the average amount of shade available on Minerva Foods' partner properties.

Routine mutilations

Mutilations			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
<p>By 2025, 45% of cattle and beef raw materials will be sourced from ranching systems that do not practice dehorning.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022-2024: Mapping the practice of dehorning in our operations. ○ 2023-2024: Encourage farmers and suppliers to abolish the practice of dehorning. 	2025	49	Achieved (47.2%)

The company's global beef cattle chain considers the practices of dehorning adult animals, castration, and branding with hot irons to be mutilations. Minerva Foods encourages farmers to utilize genetic improvement techniques to select hornless animals, thereby eliminating the necessity for future dehorning procedures. Furthermore, the company encourages the implementation of best practices for animal welfare, such as avoiding the mixing of animals from different classes and unfamiliar animals. This approach can help reduce the incidence of fights and, consequently, the need for dehorning. In 2023, **47.2%** of the animals were purchased from suppliers who reported not dehorning (Figure 7).

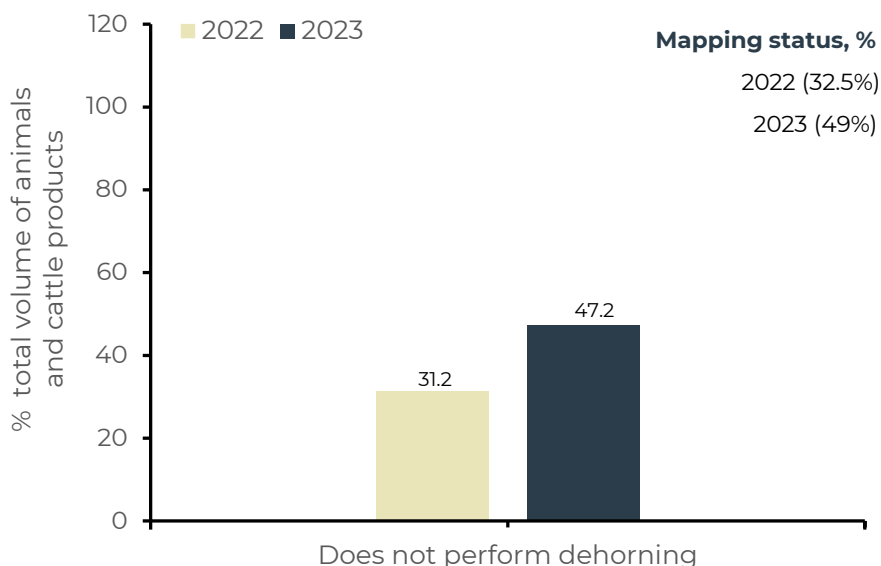


Figure 7: Share of global cattle chain that does not use dehorning. Total volume of animals and raw materials purchased for the company's global beef chain (2022 = 1,017,488 tons; 2023 = 1,035,603 tons).

We also encourage our suppliers to adopt alternative methods of animal identification rather than hot-iron branding. In 2023, we began mapping this practice across our supply chain and found that **8%** had already transitioned to using ear tags and tattoos as identification techniques. In collaboration with other partners in the supply chain and the Brazilian Roundtable of Sustainable Livestock, we have developed technical materials for suppliers outlining the benefits of avoiding hot-iron branding and providing recommendations for alternative identification methods. This material is expected to be published by 2025. Lastly, we do not encourage the surgical castration of cattle, as we slaughter animals at a younger age, reducing the need for this practice. For this indicator, we have mapped **95.5%** of the global cattle supply chain. In 2023, **72.5%** of animals had not undergone surgical castration.

Long-distance live transport

Long-distance live transport

Public commitment	Target Achievement	% of chain mapped (2023)	Status
By 2025, 85% of animals in the company's global beef chain will be transported within 8 hours or less.	2025	99,5	Achieved (87%)
Interim targets:			

- 2022-2024: Mapping of slaughter cattle transportation chain at all company slaughter units.
- 2023-2025: Gradually adjust cattle purchase radius to ensure travel time of eight hours or less.
- 2024: Purchasing cattle products from suppliers that attest pre-slaughter transportation time lesser than 8 hours.
- 2025: 85% of the total volume of cattle pre-slaughter transported during journeys equal or lesser than 8 hours.

The company's logistics team collaborates closely with cattle purchasing to source animals from an average radius of 296.7 km from its slaughter units, aiming to reduce transportation times. Additionally, the company partners with third-party cattle suppliers who monitor transportation times and provide documentation to support this indicator. In 2023, **87%** of the animals in the global cattle supply chain were transported for eight hours or less (see Figure 8). More information on animal welfare during transportation, such as 'dead on arrival' rates, can be found in the [Animal Welfare Report](#) for our own cattle supply chain.

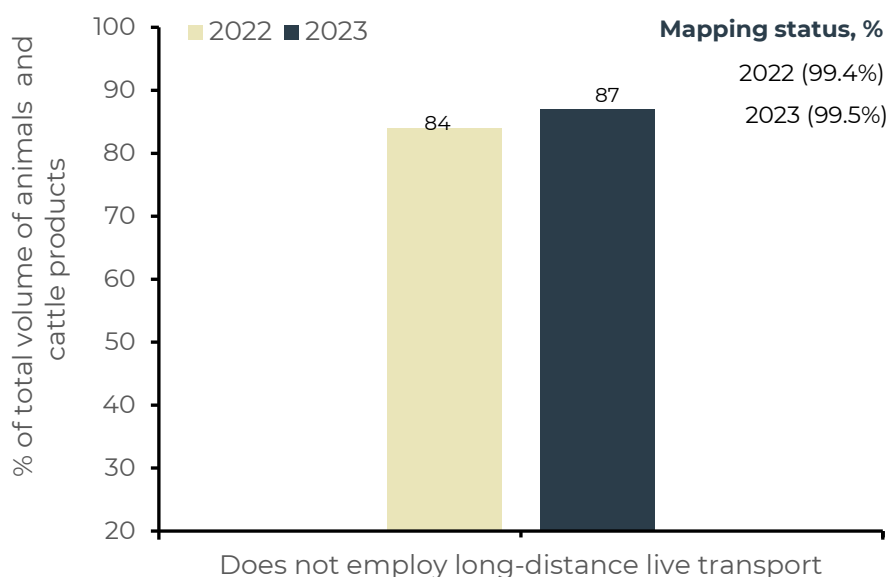


Figure 8: Share of the global beef chain that is not subjected to long-distance live transport. Total volume of animals and raw materials purchased for the company's global beef chain (2022 = 1,017,488 tons; 2023 = 1,035,603 tons).

To maintain the highest standards of animal transportation, Minerva Foods has implemented a program to ensure that drivers are fully informed of the latest best practices. In 2023, nearly 2,000 drivers received training in animal welfare protocols for transportation. Additionally, we published the [Manual of Good Practices and Recommendations for Animal Welfare in Cattle Transportation](#), further solidifying our dedication to this important issue.

Pre-slaughter stunning

Pre-slaughter stunning			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
<p>By 2026, 93% of animals chain stunned before slaughter in the global beef.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022: Mapping of cattle stunning practices in all company operations. ○ 2023-2025: Gradual alignment of the stunning method. ○ 2026: Guarantee that 93% or more stunned cattle at slaughter units in the company's global cattle chain. 	2026	99.5	In progress (89.2%)

In 2023, **89.2%** of the animals in the Company's global beef chain underwent pre-slaughter stunning (Figure 9). The primary method of stunning was brain concussion with a penetrating captive bolt (**88%**), while the concussion with a non-penetrating bolt accounting for **1.2%**.

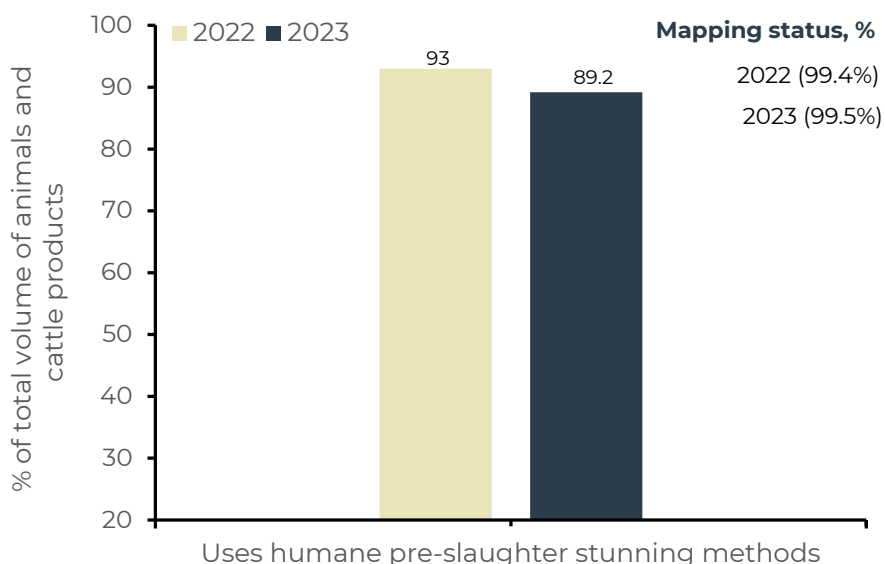


Figure 9: Share of the global cattle chain that is subjected to pre-slaughter stunning. Based on the total volume of animals and raw materials purchased for the company's global beef chain (2022 = 1,017,488 tons; 2023 = 1,035,603 tons).

Inhumane practices in the production chain

Inhumane practices in the production chain			Status
Public commitment	Target Achievement	% of chain mapped (2023)	Status
<p>Ensuring that 100% of the animals in the global beef chain are sourced from rearing systems that do not keep animals on fully slatted floors.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2022-2023: Comprehensive mapping of the global cattle chain for this indicator. 2024-2025: Gradual alignment, projection, and replacement of suppliers using the criteria of “keeping animals on fully slatted floors” as business format. 2026: Ensuring that 100% of the beef cattle is not acquired from systems that animals are kept on fully slatted floor. 	Ongoing commitment	100	Achieved (100%)
<p>Guarantee that 100% of the animals in the global beef chain are purchased from rearing systems where the animals are free from tethering and are not housed in individual pens.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> In 2021, it was mapped the whole beef supply chain (100%), where all suppliers reported to keep 	Ongoing commitment	100	Achieved (100%)

animals free from tethering and not housed in individual pens, thereby enabling expression of gregarious behavior.			
--	--	--	--

The company's global beef cattle supply chain is monitored for three practices considered inhumane: keeping animals on fully slatted floors, tethering animals, and housing them in individual pens, as well as mother-calf separation. The use of fully slatted floors is not practiced in the beef cattle supply chain, at least within Latin America. In CAFOs, dirt floors and, to a lesser extent, concrete floors are more common. In 2023, we achieved **100%** mapping of the global supply chain, ensuring that all animals were sourced from suppliers who do not keep cattle on fully slatted floors.

Minerva Foods is fully committed to ensuring that **100%** of its beef raw materials are sourced from production systems where animals are kept free from tethers and individual pens. These practices are also uncommon or non-existent in the beef cattle production chain in Latin America. We have mapped **100%** of our global beef supply chain for this indicator, confirming that all animals are sourced from systems that do not use tethering or individual pens.

In 2023, Minerva Foods began monitoring mother-calf separation practices within the cattle supply chain. **It is important to mention that in the Minerva Foods beef cattle supply chain, we guarantee that 100% of calves are kept in groups from birth until adulthood.** We encourage the adoption of more humane weaning methods, such as two-stage weaning, as an alternative to abrupt weaning, to reduce stress for both the calf and the mother. Our findings show that **3%** of suppliers still use traditional (abrupt) weaning methods, while **6%** have adopted more humane practices, including side-by-side weaning and controlled weaning (see glossary for definitions) (see Figure 10). Regardless the weaning system, all calves keep with their moms for 90-120 days.

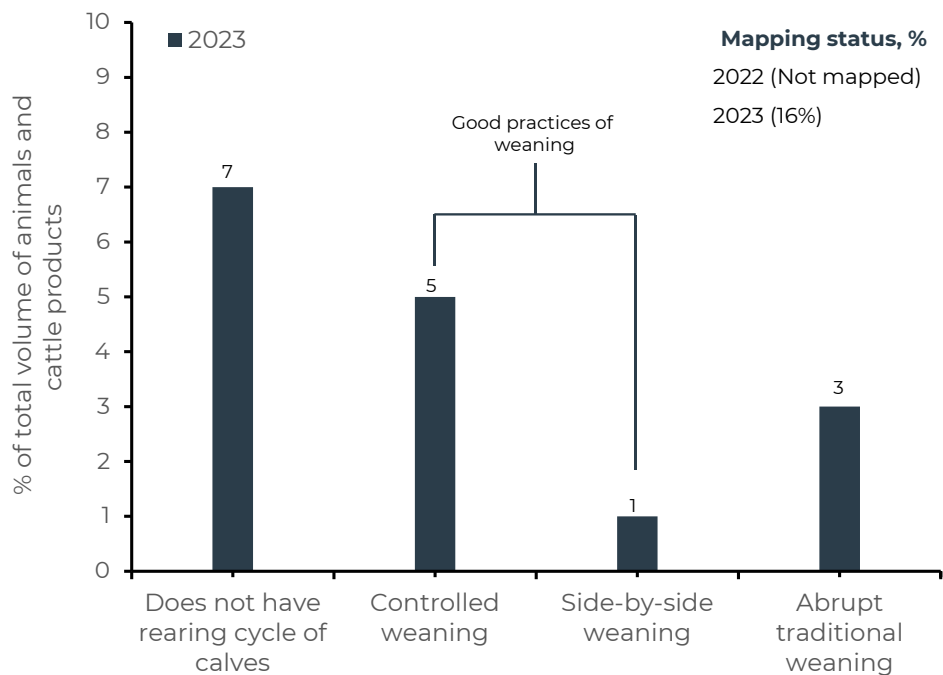


Figure 10: Share of the global cattle chain regarding weaning practices. Total volume of animals and raw materials purchased for the Company's global cattle chain (2022 = 1,017,488 tons; 2023 = 1,035,603 tons).

9.2 Sheep supply chain

Sheep account for **6.98%** of Minerva Foods' global supply chain. In 2023, Minerva Foods purchased 79,814 tons of sheep raw material, comprising **6.92%** of own sheep and **0.06%** third-party sheep. The public commitments outlined in this section will also be described for the global sheep supply chain. As in 2022 we did not incorporate data from the own sheep supply chain from Australia, we will present results only for 2023. We have mapped **99.91%** of the global sheep chain for the following indicators: Closed confinement, pre-slaughter stunning, and long-distance live transport. The following describes the public commitments established for the chain.

Environmental Enrichment

Environmental Enrichment			
Public commitment	Target Achievement	% of chain mapped	Status
By 2040, environmental enrichment used in 15% of the sheep ranching sector respective to our slaughter operations.	2040	1,0	In progress (1,0%)

<p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022–2030: Mapping of the enrichment chain. ○ 2031–2034: Project and encourage partners to implement enrichment on their properties. ○ 2040: Achieve 15% of total sheep volume using enrichment practices. 			
--	--	--	--

100 % of sheep at Minerva Foods slaughter units have access to sources of artificial shade in the pens. At the ranch level, in 2023, **1,0%** of sheep raw material was sourced from suppliers that reported using environmental enrichment, with a focus on providing climbing structures in the pens.

Long-distance live transport

Long-distance live transport			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2023, 90% of sheep raw materials sourced from suppliers in compliance with the requirement of transport times of 8 hours or less.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022-2023: Mapping of the third-party sheep supply chain. ○ 2023: Ensure that 90% meet pre-slaughter transport times within 8 hours. 	2023	99.9	Achieved (97.6%)

In 2023, **97.6%** of animals in the global sheep chain spent eight hours or less in transport. Further animal welfare indicators monitored during transportation can be found in our [Animal Welfare Report](#) (base year 2023).

Pre-slaughter stunning

Pre-slaughter stunning			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2026, source sheep in which 100% of the animals undergo pre-slaughter stunning.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022-2023: Mapping of the sheep supply chain. ○ 2026: Guarantee that (100%) of suppliers have carried out pre-slaughter stunning of the animals. 	2026	99.9	In progress (98.91%)

In 2023, **98.91%** of animals in the global sheep supply chain underwent pre-slaughter stunning, with electronarcosis identified as the preferred method. Consequently, **1%** of sheep raw materials were sourced from suppliers who indicated that they lacked the requisite information on this indicator. These suppliers will be the primary focus for implementing an action plan to begin monitoring this indicator.

Inhumane practices in the production chain

Inhumane practices in the production chain			
Public commitment	Target Achievement	% of chain mapped	Status
<p>Guarantee that 100% of the animals and raw materials in the global sheep chain are sourced from ranching systems that keep animals free from tethering or in individual pens.</p>	Ongoing commitment	100	Achieved (100%)

In 2023, **100%** of animals were raised in pasture areas where they were guaranteed to roam freely and express their social behaviors, rather than in individual corral pens.

9.3 Broiler chicken supply chain

The following is a description of all public commitments in place for the broiler supply chain.

Closed confinement

Closed confinement			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
<p>By 2026, source raw materials only from 100% cage-free broilers.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022: Mapping of the broiler rearing practices within our supply chain, aligning with the cage-free requirement through contractual agreements. ○ Ensure that 100% of our broiler suppliers adhere to the cage-free standard. 	2026	100	Achieved (100%)
<p>By 2023, ensure that 35% of the broiler raw material is reared at lower stocking densities (less than or equal to 30 kg/m²).</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022: Map the rearing practices of broiler chickens in the supply chain. ○ 2023–2025: Project supplier scale-up with specific details of densities equal to or less than 30Kg/m². ○ 2026–2029: Project and replace a number of suppliers. ○ 2023–2025: Project an increase in the scale of suppliers with specific details of densities equal to or less than 30Kg/m². 	2030	87.3	Achieved (41.5%)

In 2023, **86.40%** of the birds in the broiler supply chain were reared intensively, with a small proportion (**0.95%**) reared in sheds with access to outdoor areas to graze (semi-intensive and extensive systems) (Table 3). In terms of stocking density, **41.50%** of broiler raw material came from production

systems with lower stocking densities (less than or equal to 30 kg m⁻²) (Figure 11). The breeds used and reported were mostly fast growing (e.g. Cobb and Ross). However, in 2023, **2%** of chicken raw material was sourced from systems using the Hubbard, a breed considered to have slower growth potential (Figure 12).

Table 3: Rearing systems practiced in the Minerva Foods broiler supply chain.

*Production system (Broiler chickens)	2022	2023
	Volume (8,237 ton)	Volume (9,878 ton)
Mapping status, %	100	87.30
Intensive systems, %	99.99	86.40
Free of close confinement, %	0.001	0.95
Extensive systems, %	0.001	0.30
Semi-intensive systems, %	0	0.65

*Please refer to the glossary of terms for definitions of the reported rearing systems.

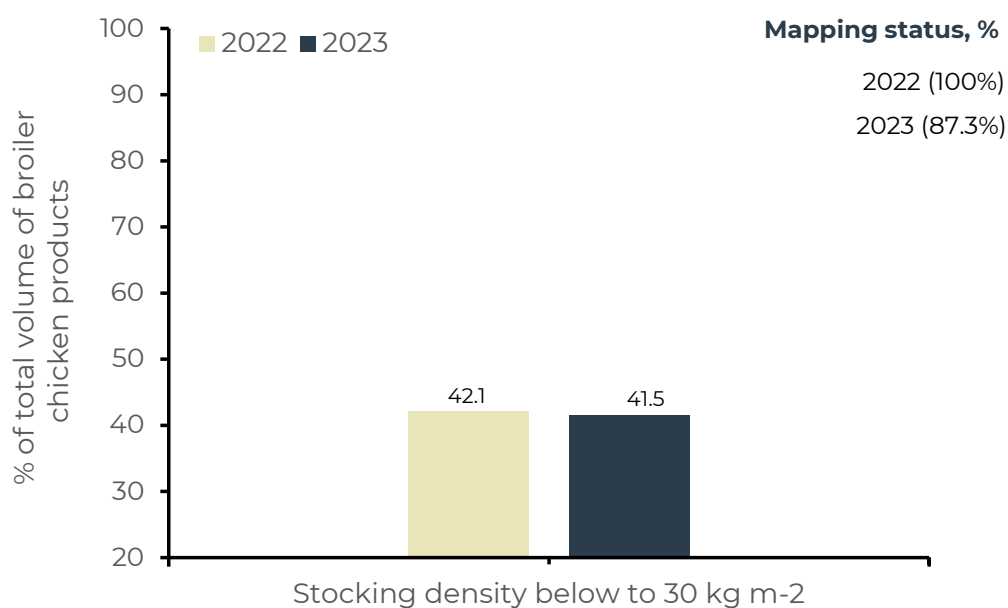


Figure 11: Stocking density practiced in the Minerva Foods broiler chain. Total volume of broiler raw material: 2022 (8,237 tons); 2023 (9,878 tons).

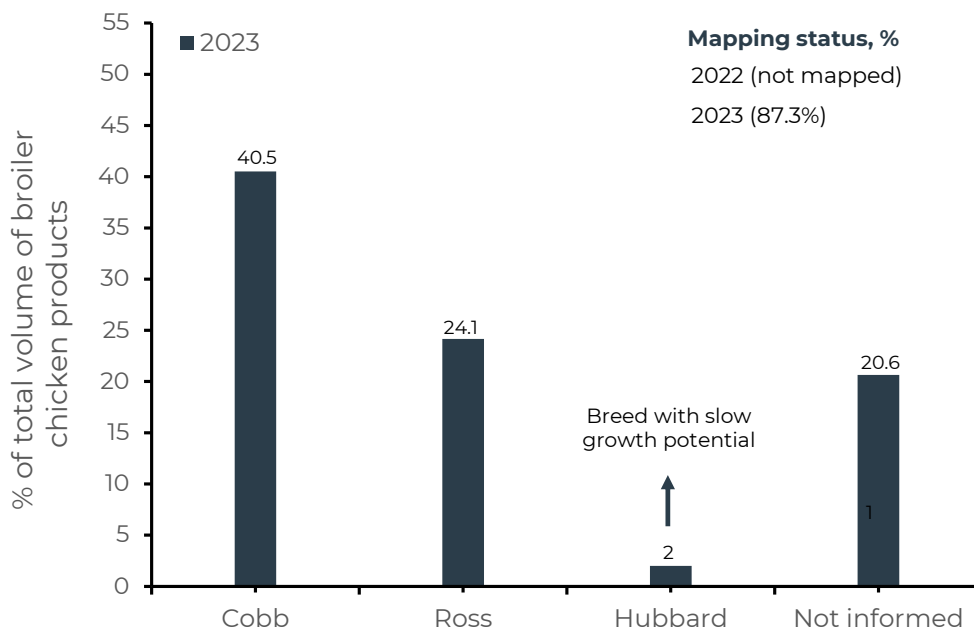


Figure 12: Reported broiler breeds. Total volume of broiler raw material: 2022 (8,237 tons); 2023 (9,878 tons).

Environmental enrichment

Environmental enrichment			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
<p>By 2030, ensure that 25% of the broiler raw material purchased has access to environmental enrichment.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2022–2025: Map suppliers likely to use enrichment techniques. 2026–2028: Evaluate partnerships with suppliers using such practices. 2029: Progressively align, project and replace a portion of suppliers based on offering enrichment as a business strategy. 2030: 25% of the broiler supply chain to come from a system using environmental enrichment. 	2030	87.3	Achieved (36.3%)

In 2023, **36.3%** of broiler raw materials were purchased from suppliers that reported using environmental enrichment sources for the animals. The

main practices used and reported were perches or platforms and materials for exploration, pecking and foraging (e.g. straw) (Figure, 13).

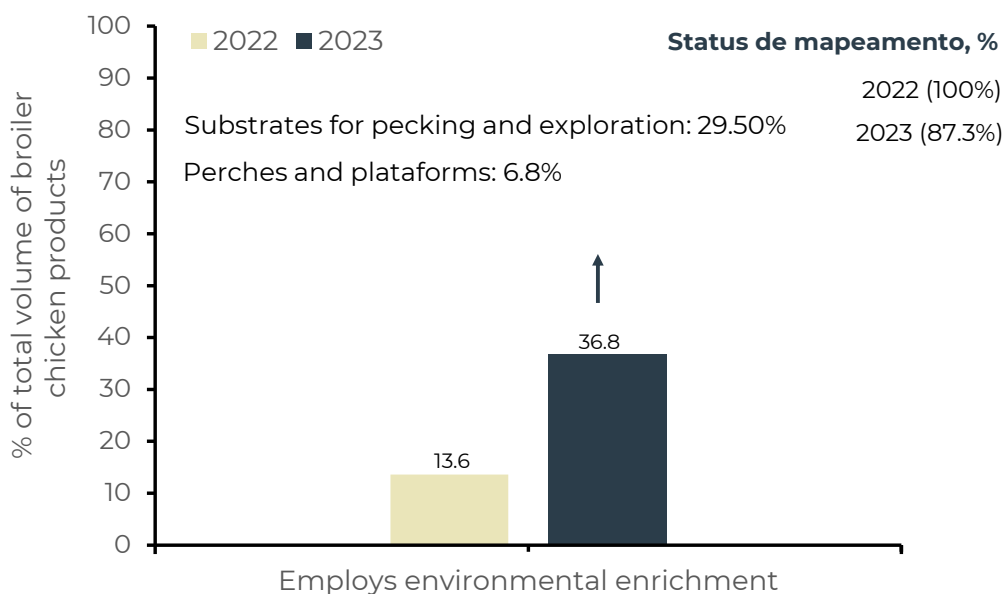


Figure 13: Environmental enrichment practices in the Minerva Foods broiler supply chain. Total volume of broiler raw material: 2022 (8,237 tons); 2023 (9,878 tons).

Routine mutilations

Mutilations			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
Refrain from using broiler raw materials that come from flight restraint systems. Interim targets: <ul style="list-style-type: none"> 2022: Mapping the broiler supply chain 2023: Ensure no purchase of raw materials sourced from flight restraint systems. 	Ongoing commitment	100	Achieved (100%)
Refrain from using broiler raw materials sourced from systems that perform finger clipping (phalanges) on their animals. Interim targets: <ul style="list-style-type: none"> 2022: Mapping of the broiler supply chain. 2023: Ensure no purchase of raw materials from systems that perform finger clipping. 	Ongoing commitment	100	Achieved (100%)

In 2023, for this indicator, we have mapped **100%** of our broiler supply chain and certified that **100%** of raw material is sourced from production systems that do not practice flight restraint or finger clipping.

Long-distance live transport

Long-distance live transport			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
<p>By 2030, ensure that 60% of broiler raw material purchased does not come from animals transported more than 4 hours.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022-2025: Complete supply chain mapping. ○ 2026-2029: Progressively align, project and replace suppliers using travel time as a business format. ○ 2030: Guarantee that 85% of the broiler supply chain comes from animals with a transport time of 4 hours or less. 	Ongoing commitment	87.3	Achieved (74.25%)

In 2023, **74.25%** of broiler raw materials were sourced from suppliers that reported transportation journey times of less than or equal to 4 hours (Table 4). We have also started mapping the main causes of mortality and expect to report this data in future reports. This information is important in identifying areas of focus for improving transportation logistics to reduce mortality and animal injuries.

Table 4: Broiler supply chain mapping for pre-slaughter travel time and mortality rate.

Transportation journey time (Broiler chickens)	2022	2023
	Volume (8,237 ton)	Volume (9,878 ton)
Mapping status, %	100	87.30
Transport journey time below or equal to 4 hours, %	42.7	74.25
Dead on arrival, %	0.34	0.38

Pre-slaughter stunning

Pre-slaughter stunning			
Public commitment	Target Achievement	% of chain mapped (2023)	Status
<p>By 2026, only source 100% broiler raw material that has been stunned prior to slaughter.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022: Map broiler supply chain. ○ 2023: Ensure that (100%) of suppliers have stunned birds prior to slaughter. 	2026	87.3	In progress (87.3%)
<p>By 2040, ensure that 2% of sourced broiler raw material is subjected to controlled atmospheric stunning using inert gas or multiphase systems or in the production of company branded products.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2025-2030: Evaluate partnerships with suppliers using such stunning methods. ○ 2031-2039: Gradual adaptation, projection and replacement of a share of suppliers using the criterion of stunning as a business format. ○ 2040: 2% of the broiler supply chain using controlled atmospheric stunning (inert gas/multiphase systems) or effective electrical stunning without live inversion. 	2040	87.3	In progress (0%)

In 2023, **87.30%** of raw materials were sourced from suppliers that reported using stunning in their slaughter operations, all by means of electrical stunning, with live inversion. We agree that the most appropriate stunning methods are controlled atmospheric stunning using inert gas or multiphase systems, and/or effective electrical stunning without live inversion. We are working to implement this practice in our supply chain.

9.4 Pork supply chain

Below is a description of all public commitments made for the pork supply chain, the year in which the goal is to be achieved, and the status of compliance.

Closed confinement

Closed confinement			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2035, ensure that 100% of the raw material purchased for pork comes from sows in a collective gestation system. Interim targets:</p> <ul style="list-style-type: none"> ○ 2022–2025: Complete supply chain mapping. ○ 2026–2034: Progressively adapt, project and replace suppliers using the collective gestation criterion as a business format. ○ 2035: Guarantee that suppliers of pork for processed products adopt the collective gestation system without individual confinement. 	2035	80.3	In progress (59.3%)

In 2023, **70%** of the animals in the pork supply chain were raised in closed confinement systems (e.g. SISCON), while **10.25%** of our suppliers employed production system free from close confinement (i.e. extensive and semi-extensive) (Table 5).

Table 5: Rearing systems in the Minerva Foods pork supply chain

*Production system (Pork)	2022	2023
	Volume (5,961 ton)	Volume (6,668 ton)
Mapping status, %	67.60	80.30
**Siscon, %	64.5	70
Free of close confinement, %	3.20	10.25
Extensive systems, %	3.20	6.8
Semi-extensive systems, %	0	3.45
***Siscal, %	0	0

* See our glossary to characterize housing systems. **Intensive system of pigs raised in confinement; ***Intensive system of pigs raised outdoors

In 2023, **59.5%** of pork raw material was sourced from suppliers who reported keeping sows in collective gestation crates, with **9.2%** referring to the **"Cover-and-Release"** system - which involves only holding sows in stalls for a maximum of 4 hours for handling purposes (Table 6).

Table 6: Housing of gestating sows in the Minerva Foods supply chain.

* Pork sow housing	2022	2023
	Volume (5,961 ton)	Volume (6,668 ton)
Mapping status, %	67.6	80.3
Free from farrowing crates, %	0	9.2
Collective gestation system**, %	50	50.3
Free from gestation/sow stalls***, %	0	9.2

*Please refer to our glossary for detailed information on the characteristics of these rearing models: **Individual housing tolerance of up to 28 days ***Maximum individual housing tolerance of no more than 4 hours.

Environmental enrichment

Environmental enrichment			
Public commitment	Target Achievement	% of chain mapped	Status
By 2035, purchase raw material from pigs in which 25% have access to environmental enrichment.	2035	80.3	Achieved (30%)

<p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2023-2025: Complete supply chain mapping. ○ 2023-2027: Mapping of suppliers likely to use enrichment techniques. ○ 2028-2032: Evaluate partnerships with suppliers using enrichment practices. ○ 2033-2034: Gradual adaptation, projection and replacement of suppliers (25%) using the criterion of offering enrichment as a business format. ○ 2035: 25% of pork raw material to come from systems with environmental enrichment. 			
---	--	--	--

In 2023, **30%** of raw materials were sourced from suppliers that use sources of environmental enrichment for animals, with materials that enable exploration and foraging, such as hay and straw (Figure 14).

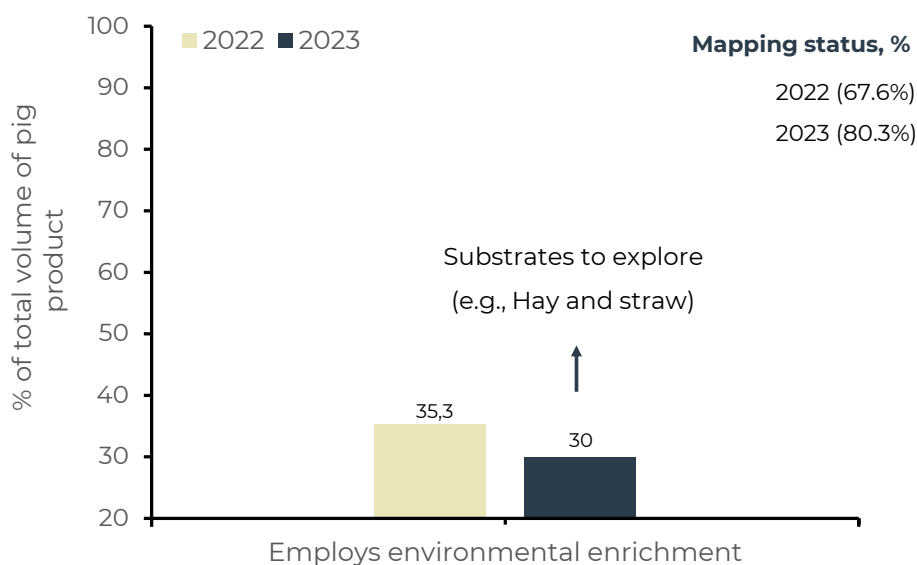


Figure 14: Environmental enrichment practices in the Minerva Foods pork chain. Total volume: 2022 (5,961 tons); 2023 (6,668 tons).

Routine mutilations

Mutilations			
Public commitment	Target Achievement	% of chain mapped	Status
By 2030, purchase pork raw materials in which 80% of the pigs do not undergo tooth resection procedures.	2030	80.3	In progress (79.45%)
Interim targets:			

<ul style="list-style-type: none"> ○ 2023-2025: Complete supply chain mapping. ○ 2026-2029: Progressively align, project, and replace suppliers using the criterion of zero tooth resection as a business format. ○ 2030: Guarantee that 80% of pig suppliers do not use the practice of tooth resection. 			
<p>By 2030, purchase pork raw materials in which 100% of male pigs are not surgically castrated.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022-2025: Complete supply chain mapping. ○ 2026-2029: Progressively align, project and replace suppliers using male castration as a business format. ○ 2030: Guarantee that pig suppliers do not use surgical castration without anesthesia on males, with priority given to replacing this with immunocastration. 	2030	80.3	In progress (75.33%)
<p>By 2035, purchase pork raw materials in which 25% of the pigs do not undergo tail docking.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2023 – 2025: Complete supply chain mapping. ○ 2026 – 2034: Progressively align, project and replace some suppliers using tail docking as a business format. ○ 2035: Guarantee that a portion of pig suppliers (25%) do not perform tail docking. 	2035	80.3	Achieved (30%)
<p>By 2040, purchase pork raw materials in which at least 35% of the pigs purchased are not identified by mutilation for processing into private label products.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2023-2025: Complete mapping of the supply chain. ○ 2025-2035: Gradual adaptation, projection and replacement of suppliers using the non-mutilating animal identification criterion as a business format. ○ 2040: guarantee that a proportion of pig suppliers (35%) do not use the ear tagging practice for identification. 	2040	80.3	Achieved (56.3%)

The following routine mutilations were identified in the pork supply chain: tooth resection, surgical castration in males, tail docking, and ear tagging (Figure 15). In 2023, **79.45%** of respondents indicated that they do not perform tooth resection. In 2023, **75.33%** of the pig raw material was obtained from suppliers who reported employing the practice of immunocastration. We have increased the amount of raw material purchased from suppliers who do not perform tail docking. In 2023, **30%** of pork raw material was purchased from suppliers who reported not carrying out the practice of tail docking. Finally, for the practice of ear tagging identification in 2023, **56.3%** of pig suppliers reported not using the practice, instead choosing tattooing and ear tags as an alternative.

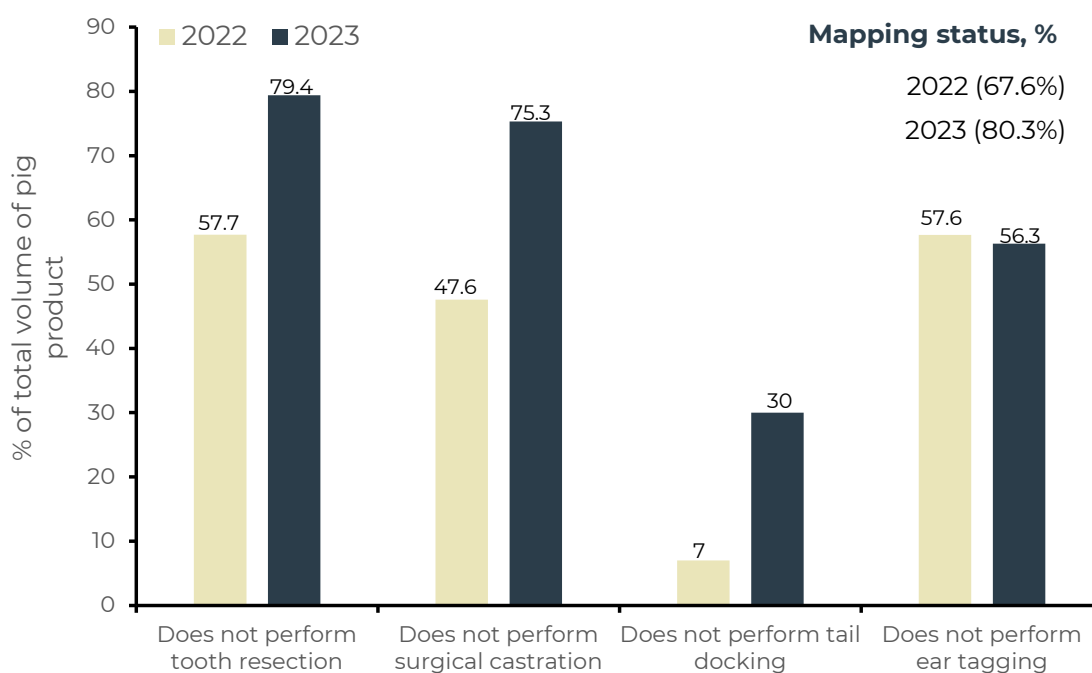


Figure 15: Routine mutilations in the Minerva Foods pork supply chain. Total volume: 2022 (5,961 tons); 2023 (6,668 tons).

Long-distance live transport

Long-distance live transport			
Public commitment	Target Achievement	% of chain mapped	Status
By 2030, purchase pork raw materials in which 90% of the pigs are not transported for more than 8 hours.	2030	80,3	In progress (61%)
Interim targets:			

- o 2022-2025: Complete mapping of the supply chain.
- o 2030-2034: Gradual adaptation, projection and replacement of part of the suppliers using the travel time criterion as a business format.
- o 2030: Guarantee that part of the pork suppliers (90%) operates with a travel time of less than or equal to 8 hours in the pre-slaughter process.

In 2023, **61%** of pork raw material was purchased from suppliers who guaranteed transportation times of less than or equal to 8 hours (Table 7).

Table 7: Transportation times reported in the Minerva Foods pork raw material supply chain.

Transport journey time (Pigs)	2022	2023
	Volume (5,961 ton)	Volume (6,668 ton)
Mapping status, %	67.6	80.3
Transport journey time below or equal to 8 hours, %	50	61
Transport journey time above 8 hours, %	-	2.59
Does not control transport journey time, %	-	16.10
Dead on arrival, %	0.39	0.37

- Not reported in the 2022 commitments report.

In 2023, we also conducted a mapping and reporting data on the percentage of mortality during animal transportation and its main causes. The average mortality rate in Minerva Foods' pork supply chain was **0.39%** in 2022 and **0.37%** in 2023. The primary causes of mortality, as reported by our suppliers, were exhaustion due to the stress of travel, climatic extremes, and traumatic injuries. The potential risk factors involved in these causes of mortality are handling during shipment of the animals, adjustment in stocking density, speed during the journey, transportation and road conditions, as well as the microclimate experienced by the animals. During workshops and technical visits, technical information and recommendations will be disseminated focusing on these risk factors.

Pre-slaughter stunning

Pre-slaughter stunning			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2026, source 100% pork raw material that has been stunned prior to slaughter.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022-2023: Map pork supply chain. ○ 2026: Guarantee that 100% of suppliers have stunned animals prior to slaughter. 	2026	80.3	In progress (80.2%)

In 2023, **80.2%** of pork raw material was sourced from suppliers using pre-slaughter stunning (**47.33%** by electronarcosis and **32.92%** by electrocution).

Inhumane practices in the production chain

Inhumane practices in the production chain			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2045, purchase pork raw materials in which 85% of the sows are not raised on fully slatted flooring.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022-2025: Complete mapping of the supply chain. ○ 2031-2044: Gradual adaptation, projection and replacement of suppliers in both Brazil and Argentina, using the criterion of installing flooring for pig sows as a business format. ○ 2045: Guarantee 85% of pork raw materials sourced from sows not raised on fully slatted floors. 	2045	80.3	In progress (41.3%)

It is our view that the practice of keeping sows on completely slatted floors throughout their maternity and pregnancy periods is inhumane and

unacceptable in the pork supply chain. In 2023, **41.3%** of respondents reported housing their animals on solid or partially solid floors.

9.5 Fish supply chain

A total of **35.40%** of the fish products was acquired from farmed systems, which include species such as *Salmo salvar* (**2.4%**), *Oreochromis niloticus* (**8%**) and *Pangasius hypophthalmus* (**25%**). Below are described all the public commitments established for the fish supply chain, the expected year for achieving the goal and the status of compliance. At the end of this section, we also report animal welfare indicators only for the farmed fish supply chain.

Routine mutilations

Mutilations			
Public commitment	Target Achievement	% of chain mapped	Status
By 2025, 100% of the total volume of fish marketed free of fin clipping.			
Interim targets:			
<ul style="list-style-type: none"> ○ 2022–2023: Map the fish supply chain in our operations. ○ 2025: Ensure that 100% of the total volume of fish sold by the company is fin-clipping free. 	2025	100	Achieved (100%)

For this indicator, **100%** of suppliers in the caught wild and farmed fish supply chain reported that they do not perform fin clipping.

Long-distance live transport

Long-distance live transport			
Public commitment	Target Achievement	% of chain mapped	Status
By 2025, source raw materials from farmed fish where 100% of the animals are not transported for more than 8 hours.	2025	75.55	In progress (96%)

Interim targets:

- 2022-2024: Map farmed fish supply chain.
- 2025: Ensure that all suppliers (100%) of fish have a transport policy of no more than 8 hours.

Fish from the caught wild systems are not transported prior to slaughter. In 2023, **34%** of fish products was purchased from suppliers who reported transporting animals during journeys equal to or less than eight hours, while **1.4%** were transported during journeys lasting more than eight hours (Figure 16). If we only consider the volume of the farmed fish supply chain mapped, **96%** of the animals were then transported on journeys lasting eight hours or less.

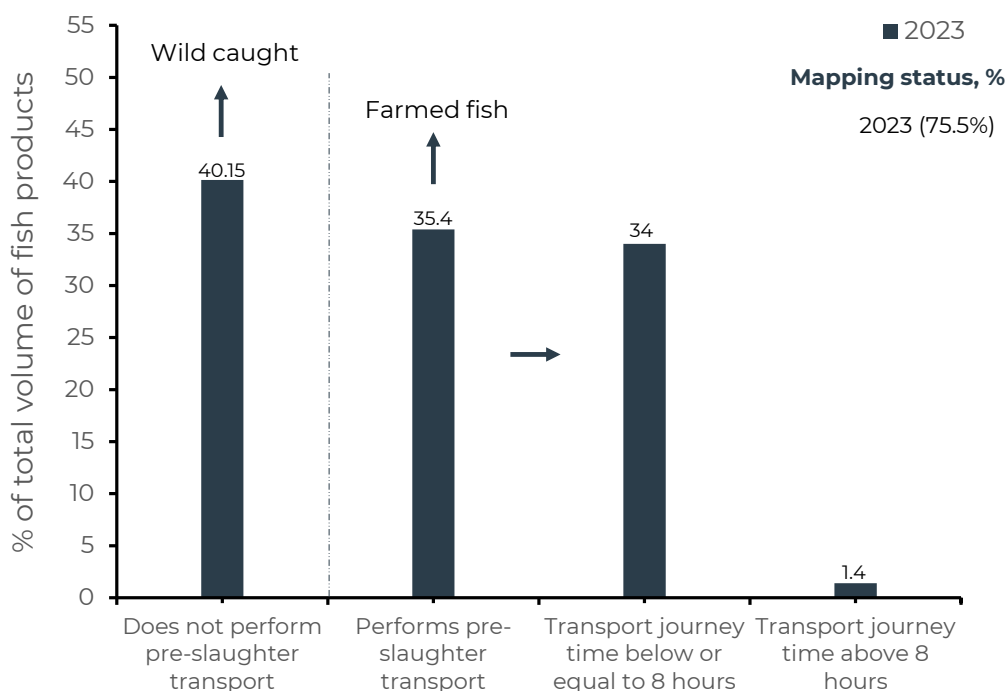


Figure 16: Journey time for pre-slaughter transportation in the fish supply chain. Total volume in 2023: 6,913 ton.

Pre-slaughter stunning

Pre-slaughter stunning			
Public commitment	Target Achievement	% of chain mapped	Status
By 2040, purchase fish in which 5% of the chain is stunned prior to slaughter.	2040	75.55	Achieved (30%)

Interim targets: <ul style="list-style-type: none"> ○ 2024-2026: Mapping of fish distribution chain. ○ 2027-2030: Detail fish stunning practices in the company's global distribution chain. ○ 2031-2035: Work to promote fish stunning practices among suppliers. ○ 2036-2039: Gradual adaptation and planned replacement of part of the suppliers to achieve the target. ○ 2040: Part of the fish distribution chain (5%) to adopt fish stunning practices. 			
--	--	--	--

In 2023, **10.40%** of fish products was purchased from suppliers that employ pre-slaughter stunning methods, with **2.40%** employing percussive stunning and **8%** using electronarcosis. If we only consider the volume of the farmed fish supply chain mapped, 30% of the animals were then subjected to pre-slaughter stunning.

Animal welfare indicators for the supply chain of farmed fish

Tabela 9: Mapping status of the farmed fish supply chain and their animal welfare indicators

Farmed fish	Species		
	<i>Salmo salar</i>	<i>Oreochromis niloticus</i>	<i>Pangasius hypophthalmus</i>
Volume purchased in 2023 (ton)	177.65	265.011	1,721.3
Mapping status, %	58	100	63
Animal welfare indicators			
Animals kept at lower stocking density*, %	58	0	63
Animals transported during journeys below or equal to 8 hours, %	0	100	63
Animals free from fasting lasting longer than 72 hours, %	58	100	63
Stun-killed animals, %	58**	100***	0
Mean mortality rate, %	0.33	1.2	10

*Stocking density lesser or equal to 10 kg m⁻³; **brain concussion; ***electronarcosis

9.6 Dairy supply chain

We purchase powdered milk and cream to make our own brand products. In total, **78.20%** of dairy products were purchased from pasture-based systems. On the other hand, **21.30%** of dairy products were purchased from systems where cows are confined (e.g. free-stall, compost barn) (Table 10). **Therefore, in 2023, 78.20% of the dairy cows in the Minerva Foods dairy chain had access to pasture for at least 6 hours per day for 120 days.**

Table 10: Breakdown of dairy systems in the Minerva Foods supply chain for dairy cattle products.

*Production system (Dairy cattle)	2022	2023
	Volume (5.2 ton)	Volume (39.2 ton)
Mapping status, %	21.75	99.5
Animals kept in pasture-based systems, %	21.75	78.2
Extensive system, %	0	19.35
Semi-intensive system, %	0	21
Intensive pasture system, %	21.75	37.85
Animals kept in close confinement, %	0	21.30
Intensive systems, %	0	21.30

*See the glossary for a more detailed description of dairy system types.

All public commitments for this chain are described below, along with the expected year of target achievement and compliance status.

Closed confinement

Closed confinement			
Public commitment	Target Achievement	% of chain mapped	Status
By 2023, source dairy ingredients from suppliers in which 100% of their dairy cattle are free from tethering or are not kept in individual pens.			
Interim targets:	2023	99.5	Achieved (100%)

<p>In 2023, we completed mapping the supply chain for dairy ingredients used in the production of our own-brand products. All suppliers of dairy products for processed goods are now required to keep their animals free from tethering, allow them to express natural gregarious behavior, and avoid housing them in individual pens. This requirement was formalized through contractual agreements.</p>			
<p>By 2026, source dairy ingredients where 100% of animals have access to pasture for more than 6 hours per day.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ Em 2022-2023: Map dairy ingredient supply chain. ○ Em 2024-2025: Project and transition suppliers to ensure they all guarantee 6 hours of pasture access per day for dairy cows. ○ By 2026: Ensure that 100% of dairy suppliers for processed products raise their animals with access to pasture (at least 6 hours per day) and implement this requirement in their contracts. 	2026	99.5	In progress (99.5%)

Environmental enrichment

Environmental enrichment			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2035, ensure that 25% of raw milk comes from dairy cows in systems with environmental enrichment.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2023-2025: Map suppliers in the dairy chain in regard to environmental enrichment. ○ 2026-2030: Progressively adapt suppliers to implement enrichment in their housing systems. ○ 2030-2034: Project and encourage suppliers to implement environmental enrichment practices. 	2035	99.5	Achieved (99.5%)

In 2023, **99.5%** of dairy products were purchased from suppliers who reported employing a variety of environmental enrichment techniques,

including artificial and/or natural shading, evaporative cooling through overhead sprinklers, and sensory enrichment sources such as brushes (Figure 17).

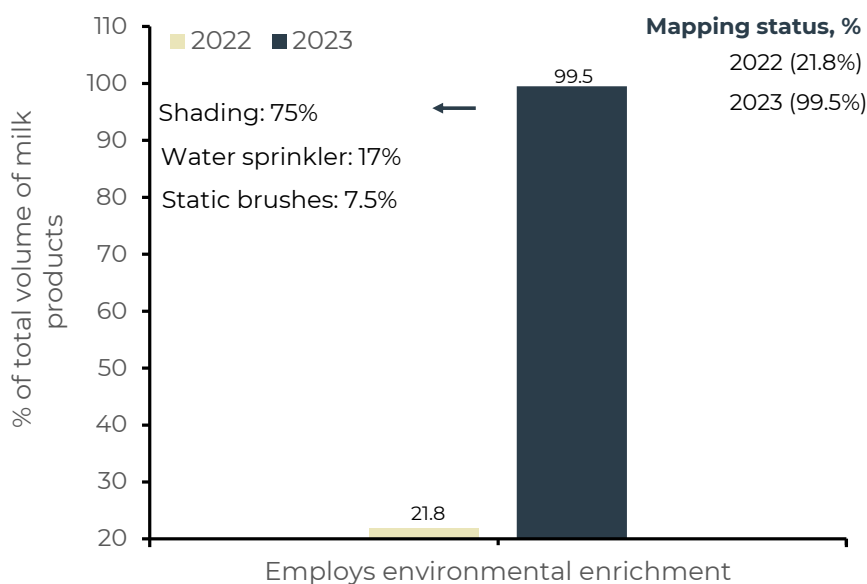


Figure 17: Environmental enrichment practices in the Minerva Foods dairy supply chain. Total volume: 2022 (5.2 tons); 2023 (39.2 tons)

Routine mutilation

Mutilations			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2025, source dairy ingredients where 15% of animals are not dehorned</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2023–2030: Mapping of suppliers with respect to dehorning. 2031–2034: Progressive alignment, projection and replacement of a portion of suppliers using the dehorning criterion as a business format. 2035: 15% of suppliers guaranteed not to dehorn. 	2025	99.5	Achieved (17.85%)

In 2023, **17.85%** of dairy products were purchased from suppliers who reported adherence to the practice of not dehorning or otherwise mutilating their animals (Figure 18).

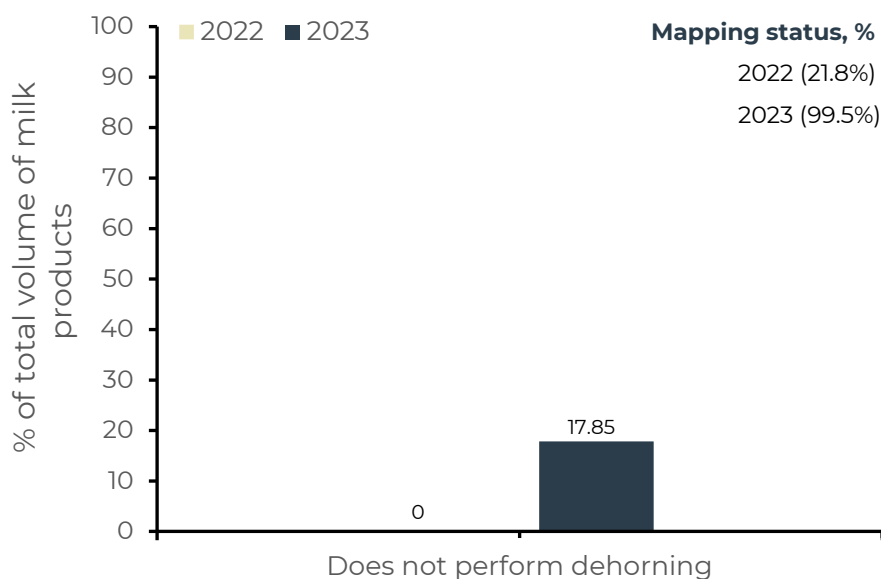


Figure 18: Share of suppliers who reported not dehorning in the Minerva Foods dairy chain. Total volume: 2022 (5.2 tons); 2023 (39.2 tons).

Long-distance live transport

Long-distance live transport			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2030, source dairy products in which 80% of the raw material comes from animals transported in no more than 8 hours.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2023 – 2025: Complete mapping of the supply chain. 2030 – 2034: Progressively adapt, project and replace a portion of suppliers using travel time as a business format. 2030: Guarantee that part of dairy suppliers (80%) operate within a travel time of 8 hours or less in the pre-slaughter process. 	2030	99.5	In progress (54%)

In 2023, **54%** of dairy products were sourced from suppliers who reported that animals sent to slaughter plants were subjected to travel times of 8 hours or less (Figure 19). The remaining **47.5%** of suppliers reported having no control over this indicator.

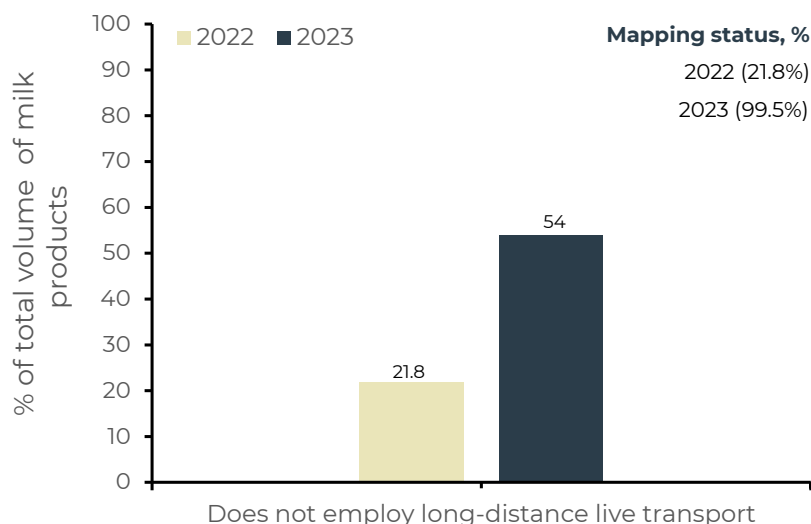


Figure 19: Share of suppliers who reported not carrying out long-distance live transport in the Minerva Foods dairy products supply chain. Total volume: 2022 (5.2 tons); 2023 (39.2 tons).

Pre-slaughter stunning

Pre-slaughter stunning			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2027, ensure that 100% of our dairy product suppliers are committed to stunning dairy cows during the slaughter process.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2022/2024: Mapping of stunning practices in the dairy chain. 2025 – 2027: Gradual adaptation, projection and replacement of a proportion of suppliers using the stunning criterion as a business format 2027: Ensure that 100% of dairy cows are stunned during the slaughter process. 	2027	99.5	In progress (52%)

In 2023, **52%** of dairy product suppliers indicated that, at the conclusion of the production cycle, the animals are slaughtered with a guarantee of pre-slaughter stunning (Figure 20). Conversely, **47.5%** of suppliers reported that they lacked control over this information.

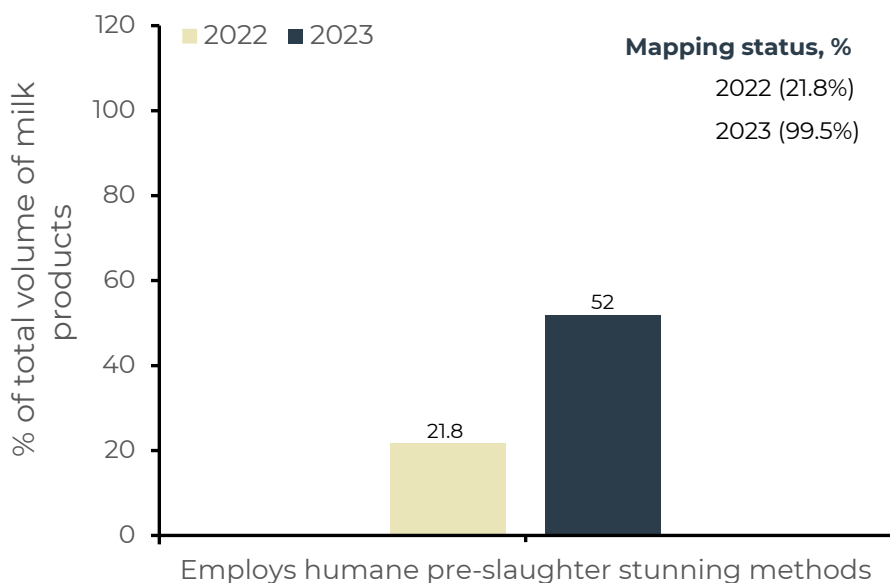


Figure 20: Share of suppliers that reported employing pre-slaughter stunning in the Minerva Foods dairy chain. Total volume: 2022 (5.2 tons); 2023 (39.2 tons).

Inhumane practices in the production chain

Inhumane practices in the production chain

Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2030, purchase dairy raw materials in which 25% of suppliers do not maintain their animals on fully slatted floors.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2022-2025: Complete mapping of the supply chain. 2026 – 2029: Progressively adapt, project and replace suppliers using slatted floors as a business format. 2030: Guarantee that 25% of dairy raw materials do not originate from suppliers that keep their animals on fully slatted floors. 	2030	100	Achieved (100%)

It is uncommon to keep cattle on completely slatted floors, at least in Latine America. In 2023, we conducted a comprehensive mapping of the dairy cattle derivatives chain, identifying and addressing such inhumane practice. Our findings revealed that **100%** of suppliers reported keeping animals in environments without fully slatted floors. In addition, in 2023, we also mapped

weaning practices in the dairy chain. Of the suppliers surveyed, **81.6%** reported having no control over this indicator, while **17.8%** reported abruptly separating cow and calf 48 hours after calving.

9.7 Egg derivatives supply chain

We purchase egg powder to make our own branded products. Below is a description of all public commitments for this chain, the expected year to achieve the target, and the status of compliance.

Closed confinement

Closed confinement			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2026, use only eggs from cage-free hens in industrial processing (100%).</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2022: Identify all private label products that may contain eggs as an ingredient and their respective suppliers. ○ 2023-2025: Projection and replacement of suppliers so that they all guarantee cage-free production. ○ 2026: Use only eggs from cage-free hens in the industrial process of own-brand products. 	2026	100	In progress (0.5%)

In 2023, **0.5%** of egg derivatives were sourced from cage-free systems. As in 2022, **99.5%** of egg derivatives were purchased from caged systems. However, in 2024, we introduced a new product specification, designated "**cage-free powdered eggs.**" The creation of this specification represents a key step in the transition towards the goal of **100%** of eggs purchased from cage-free systems. In alignment with the company's purchasing sector, and following a mapping of potential suppliers in the region, two categories of **cage-free eggs** were established:

- 1) **Eggs produced in closed facilities:** This is a production system in which a group of birds of the same species and age are reared cage-free but confined in a poultry house.

- 2) **Eggs produced in free-range systems:** This is a production system in which groups of birds are raised in sheds with free access to pasture areas.

To more effectively oversee this transition, we have established biannual objectives with the purchasing sector for the replacement and/or incorporation of suppliers of cage-free egg products.

Environmental enrichment

Environmental enrichment			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2035, ensure that 25% of egg raw material used in the manufacture of industrial products comes from laying hens in environmental enrichment systems.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> ○ 2023–2025: Map suppliers in the egg chain regarding environmental enrichment. ○ 2026–2030: Progressively adapt suppliers to implement enrichment in their housing systems. ○ 2030–2034: Promote and encourage suppliers to implement environmental enrichment practices. ○ 2035: 25% of the total volume of eggs used as raw material for the manufacture of industrial products to be produced with the application of environmental enrichment practices in the housing system. 	2035	100	In progress (0.5%)

In 2023, **0.5%** of egg derivatives were sourced from suppliers that use sources of environmental enrichment, with an emphasis on materials that allow for exploration and foraging, such as perches and elevated platforms, as well as natural and/or artificial barriers. With the transition to cage-free systems, we

also hope to drive the increase in egg derivatives from systems using environmental enrichment sources.

Routine mutilations

Mutilations			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2026, use (100%) only eggs from hens that do not undergo the beak trimming/tipping process in industrial processing.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> o 2022: Map products that may contain eggs as ingredients in their manufacture and their respective. o 2023–2025: Projection and replacement of suppliers so that all do not use beak trimming/tipping in their chain. o 2026: Use only eggs from hens without beak trimming/tipping in the manufacture of processed products. 	2026	100	In progress (0.5%)

In 2023, **0.5%** of the egg derivatives supply chain reported no beak trimming/tipping. In line with the transition to cage-free egg products, we are working towards meeting our public commitment target to abolish the practice of beak trimming/tipping by **100%** by 2026.

Long-distance live transport

Long-distance live transport			
Public commitment	Target Achievement	% of chain mapped	Status
<p>Sourcing raw materials only from eggs in which 100% of the animals are transported for no more than 4 hours.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> o 2022: Map egg supply chain. o 2023: Ensure that all (100%) egg suppliers have a policy of not transporting laying hens for more than 4 hours. 	2023	100	Achieved (100%)

In 2023, **100%** of egg derivatives suppliers reported that the animals in their supply chain are transported to slaughter during journeys of less than or equal to four hours.

Pre-slaughter stunning

Pre-slaughter stunning			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2023, source raw materials only from eggs in which 100% of the laying hens were stunned prior to slaughter.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2022: Map egg supply chain. 2023: Ensure that all (100%) egg suppliers have a policy of no more than 8 hours transport before slaughter. 	2023	100	In progress (0%)

In 2023, we were unable to obtain the necessary data for this indicator in our chain.

Inhumane practices in the production chain

Inhumane practices in the production chain			
Public commitment	Target Achievement	% of chain mapped	Status
<p>By 2025, purchase egg raw materials where 100% of suppliers do not use the practice of culling day-old male chicks.</p> <p>Interim targets:</p> <ul style="list-style-type: none"> 2022-2023: Complete mapping of the supply chain. 2023-2024: Progressively align, project, and replace suppliers that use the slaughter of day-old male chicks as a business format. 2025: Guarantee that 100% of egg raw materials do not utilize the culling of day-old male chicks. 	2025	100	Achieved (100%)
Zero tolerance to animal mistreatment, whether through abuse or neglect throughout the company's global chain.	Ongoing commitment	100	Achieved (100%)

In 2023, **100%** of powdered eggs were purchased from suppliers who confirmed that they do not cull male day-old chicks in their production chain.

10. Closing remarks and future prospects

Minerva Foods is committed to continuous improvement in the quality of life for animals in its supply chain, with a focus on excellence in animal welfare. We will continue to implement our action plans to source animals, raw materials, and animal-derived ingredients from suppliers that adhere to high standards of animal welfare. The following actions have been identified as priorities for the ongoing enhancement of our supply chain:

1) Changes on supplier profile:

The next step in advancing this action plan is to construct an animal welfare risk matrix for all of Minerva Foods' supply chains.

2) Ongoing development of Minerva Foods' corporate animal welfare department:

The restructuring of Minerva Foods' corporate animal welfare department will continue to direct its focus towards advancing the mapping and monitoring of the supply chain, with an expansion of its "mapping" office. The main objectives of this expansion are:

- a) Enhance transparency and guarantee traceability throughout the company's global supply chain, providing a more comprehensive understanding of animal treatment practices. This helps ensure that all parties involved meet the animal welfare standards set by the company.
- b) Continuous improvement with rigorous monitoring of each supplier, helping them to implement more efficient and humane practices through control of action plans and annual training. Minerva Foods believes that working collaboratively with suppliers strengthens

commercial relationships and ensures that all partners are aligned with the company's values.

3) Auditing the global supply chain:

We have initiated the drafting of an internal document to audit our global supply chain. This document will encompass key elements such as evaluation criteria, a monitoring system through a systematized dashboard, a standardized data evaluation format to identify trends and sensitive areas, and a sample of suppliers to be audited on-site, based on the results of the risk matrix. Minerva Foods is confident that by implementing these steps in a strategic and coordinated manner, it will ensure an effective audit of its supply chain, promote exemplary animal welfare practices, and strengthen its position as a responsible industry leader. This project is a priority investment for the company, with implementation planned between 2025 and 2030.

11. Glossary

Global topics

Closed confinement: The term refers to environmental conditions that restrict the expression of natural behaviors important to the species. The term applies to confined animal feeding operations (CAFOs) for cattle, battery cages for laying hens, high-density (i.e. > 30 kg m⁻²) broilers, high-density (i.e. > 10 kg m⁻³) fishponds, gestation crates or farrowing crates for sows, tethered confinement and/or individual pens.

Environmental enrichment: The term denotes stimuli in the external environment that are instrumental in the expression of a more expansive and intricately diverse range of behaviors. Examples of sources of environmental enrichment include: Static or non-static brushes for cattle, manipulable materials such as straw and hay for pigs; substrates for birds to peck at and/or sand-bathe; structures that favor the opportunity for animals to seek a better microclimate (e.g. Natural and/or artificial shading structures, evaporative cooling; for fish, physical enrichment with artificial plants and types of sensory enrichment (e.g., substrates on the floor, roofing, or lighting) and occupational enrichment (e.g., water currents to induce exercise). For further information on the [effectiveness of environmental enrichment practices, please refer to the BBFAW guidelines](#).

Routine mutilations: The term refers to the removal of any biological tissue from an animal's body. For example, the removal of feathers, fur or wool, up to and including the surgical removal of one or more organs, is considered

mutilation, which always has the potential to cause pain to the animal and consequently compromise its well-being.

Pre-slaughter stunning: Stunning can be understood as an intentional process that induces a state of unconsciousness in animals. This process can be carried out using methods that result in reversible or irreversible damage to the brain structures responsible for perceiving, processing, and responding to internal and external stimuli. For poultry, the following methods of stunning have been deemed suitable: the use of a controlled atmosphere with inert gas or multiphase systems; and stunning by electronarcosis, without the upper limbs being inverted.

Cattle: The use of mechanical percussion with a penetrating or non-penetrating captive bolt is considered most appropriate methods of stunning. In this method, a cerebral concussion is caused by the transfer of kinetic energy of movement. The area of the brain to be damaged and the size of the force applied are key points at determining the efficiency of mechanical percussion to induce complete unconsciousness of animals.

Sheep: Electronarcosis is considered the most suitable method for stunning sheep. In electronarcosis, an electrical current of sufficient intensity, frequency and duration is applied to cause immediate loss of consciousness in animals.

Broilers and laying hens: Appropriate methods of stunning are the use of a controlled atmosphere with inert gas or multiphase systems; and stunning by electronarcosis, without inversion of the upper limbs.

Pigs: Electronarcosis is considered the most suitable method for stunning pigs.

Fish (Salmon): Electronarcosis is considered the most appropriate method of stunning fish, including salmon. This method must be followed by another method that ensures the death of the animal, such as bleeding, for example.]

Long-distance live transport: Transport with journeys that exceeds 8 hours in the case of cattle (e.g., dairy and beef cattle), sheep, pigs and fish, while, for poultry (e.g., broiler chickens and laying hens), journeys that exceeds 4 hours.

Antibiotics: The term refers to anything that inhibits bacteria.

Critically important antibiotics: An antibiotic designed to “Critically Important” must meet two criteria. The first is defined as the ‘sole, or one of the limited available therapies, to treat serious bacterial infections in people’ (Criterion 1). In addition, those infections must either “be transmitted to humans from nonhuman sources” or have the potential to “acquire resistance genes from nonhuman sources (Criterion 2).

Highly important antibiotics: Antibiotics meet either Criterion 1 or 2 listed above, but not both.

Therapies

Prophylactic use: Therapies for treating a group of animals without clinical signs of the disease.

Metaphylactic use: Therapies for treating a group of animals when some within the group present clinical signs of the disease.

Clinical use: Administration of antibiotics only in the presence of clinical signs of disease.

Growth promoter: A growth promoter is any substance intentionally added to the diet of animals with the purpose of preserving, intensifying or modifying their desirable properties, as well as suppressing undesirable properties. Growth promoters include substances with antimicrobial properties (e.g., antibiotics and ionophores), anabolic implants, enzymes, and beta-adrenergic agonists (e.g., ractopamine).

Specie-specific

Typology of rearing systems

Beef cattle

Pasture systems: Housing systems in which animals are kept exclusively on pasture without supplemental concentrates.

Semi-confinement grazing: A housing system in which animals are kept exclusively on pasture with supplemental concentrates (1% of live weight).

Finishing intensive pasture (TIP): A confinement system in which animals are kept exclusively on pasture with supplemental concentrates (2% of liveweight).

Intensive confinement (feedlot): A confinement system in which groups of cattle are housed in pens or paddocks of defined size. Water and feed are provided 100% at will through troughs.

Weaning practices in the beef cattle supply chain

Controlled weaning: This practice recommends reducing nursing by keeping the calf with the cow for two short periods during the day (between 6 and 8 hours and from 4 to 6 pm), beginning at 30 days of age.

Abrupt traditional weaning: At 90-120 days after birth, there is an abrupt separation of cow and calf. In this model, calves and cows are kept in separate paddocks with no visual or physical contact between them.

Traditional side-by-side weaning: Gradual cow-calf separation after 90-120 days. During this time, the cow and calf remain in adjacent paddocks, maintaining visual and auditory contact and some physical contact.

Sheep

Extensive system: A production system in which animals are kept exclusively on pasture (cultivated or not).

Semi-intensive system: A production system in which animals are kept on pasture during the day and indoors at night.

Intensive system: A housing system in which flocks of sheep are housed in pens or paddocks of a certain size. Water and feed are provided 100% freely from troughs.

Broiler chicken

Extensive system: The birds have unrestricted access to pasture, with the possibility of shelters to protect them from the weather.

Semi-intensive system: A combination of free-range and barn housing with paddocks.

Intensive system: Birds are housed exclusively in indoor systems throughout the production cycle.

Pigs

Extensive system: Pig production with a low level of technology and no control over feeding schedules.

Semi-extensive system: Characterized by the use of facilities that act as protection against climatic factors and containment paddocks. Nutrition and health management can be implemented.

SISCAL (semi-intensive free-range pig system): Breeding phases in which sows, nursery piglets and young piglets are kept in outdoor paddocks. The nursery and finishing phases are carried out under indoor conditions.

SISCON (Intensive System of Pig Raised in Confinement): Includes all stages of swine rearing under floor and cover, in the same structure or in multiple structures.

Individual gestation crates: The gestating sow is housed in an individual pen and kept there throughout the gestation period until the piglets are born.

Collective gestation system: In this system, individual stalls are not used, and sows are housed collectively throughout gestation until the piglets are born.

Cover and Release System: Sows are moved to group housing immediately after insemination (they remain in cages for up to 4 hours).

Fish

Caught-wild: Removing animals from their natural environment (e.g., ocean or river).

Extensive system: Raising fish in lakes, dams, or excavated ponds where they remain until they are caught. No feed or aerators are used. Average production from 100 to 1,000 kg/hectare.

Semi-intensive system: Rearing in ponds, dams and reservoirs, with feed provided. Average production of 5,000 kg/hectare.

Intensive system: Exclusive use of ponds for rearing, where the animals are fed a balanced ration. Average production of 10,000 kg/hectare.

Super-intensive system: Rearing in circular tanks, adapted boxes, net pens, raceways, shelters, etc., with a balanced feed supply. Average production of 40,000 kg/hectare.

Dairy Cattle

Extensive system: Animals that produce up to 1,200 liters of milk per milking cow per year and are kept exclusively on pasture.

Semi-intensive system: Animals producing between 1,200 and 2,000 liters of milk per milked cow per year, kept exclusively on pasture, with supplemental feeding during periods of reduced pasture growth.

Intensive grazing system: Animals producing between 2,000 and 4,500 liters of milk per milked cow per year, kept exclusively on pasture with high support capacity forage, with volume supplementation during the period of lowest pasture growth.

Intensive system: Animals producing more than 4,500 liters of milk per milked cow per year, housed in confinement, and fed at the trough on preserved forages such as silage and hay. Examples: Free stall, Compost barn, Compost barn - wind tunnel, Loose housing.

Laying hens

Conventional cages: Intensive confinement in enclosed areas with birds in cages.

Cage-free: Birds remain in a cage-free house.

Free range: Birds remain loose in the enclosure with free access outdoors.

Caipira: They follow the requirements of cage-free and the recommendations of the ABNT technical standard NBT 166437:2016, with access to pasture areas.

Organic: Follows the requirements of cage-free and controlled feeding, with components coming only from suppliers accredited to a certifying body, as defined by Law No. 10.831 of 23/12/2003 and regulated mainly by MAPA IN No. 46 of 06/10/11 and IN No. 17 of 18/06/2014.

12. Appendix

Waste reduction

Minerva Biodiesel

We aim to showcase our corporate responsibility by directly reducing waste from the cattle slaughter sector. Minerva Foods established Minerva Biodiesel, a subsidiary in 2012 as a pioneer in the market. The subsidiary presently generates renewable energy from tallow and adds value to the by-product from slaughter operations. Moreover, it strengthens the company's commitment to environmental sustainability with an invested capital of approximately \$250 million. Other highlights about the Minerva Biodiesel are:

- Participation in the ISCC (International Sustainability Carbon Certification) to increase the geographical scope, exporting biodiesel to Europe and Asia. Previously, operations were limited to the Brazilian market only.

- Acquired government authorization from the ANP (National Agency for Petroleum, Natural Gas and Biofuels) to triple biodiesel production, from 200m³/day to 600m³/day.

- Participation in the "Social Biofuel Seal (SBS)" project. This component, granted by MAPA, identifies Biodiesel Production Units (UPB) that integrate family farmers within the Pronaf program. The institutional instrument promotes socio-economic inclusion and generates employment and income through raw material supply from family farming for biodiesel production. Currently (2024), more than 7,000 producers are registered in the program (Project in Progress).

- Participation in the Renova Bio Program. This is a project aimed at promoting the decarbonization of the fuel sector to increase the production and participation of biofuels in the transport energy matrix. The project measures biofuel emissions against nonrenewable sources and converts them into carbon credits, known as CBIOS. As of 2023, Minerva has the capability to produce up to 6,000 CBIOS per month (Project in Progress).

Better utilization of raw materials

To maximize their primary input from slaughtering cattle, Minerva Foods sells or repurposes the by-products of skin, tallow, blood, bones, and viscera through their related businesses: Minerva Leather, Minerva Casings, and Minerva

Ingredients. The company helps to reduce reliance on animal-based food by utilizing cattle byproducts to create food for the population, generating alternative sources of protein energy and reducing waste.

[Minerva Casings](#)

The Minerva Casings produces and sells natural casings for use in sausage production. These casings are made from raw materials sourced from Minerva Foods' slaughtering and processing plants, as well as third-party suppliers based in Brazil, Paraguay, and Colombia. Our casings are used to create a range of smoked, cooked, and cured meats, including salami, pepperoni sausages, portuguese sausages, cambui sausages, paios, and others. We invite you to explore our product portfolio.

[Minerva Ingredients](#)

The Minerva Ingredients produces and markets ingredients derived from the by-products of slaughtering and deboning cattle, which include pet food products and renewable fuels made from beef tallow. The company aims to expand its reach and introduce Minerva's by-products to Asian and American markets. In 2023, Myanmar received its first shipment of beef and bone meal, marking an important milestone for our Southeast Asian exports. Further expansion is planned for the second half of the year, including exports to the United States.

[Minerva Leather](#)

The rise in leather production is linked to the optimization of raw materials from the slaughterhouses. All the generated materials are processed to create new products that are suitable for the leather goods market, including automotive, furniture and footwear, as well as for the gelatin and collagen markets. A project is underway to enhance animal welfare awareness among livestock ranchers, thereby improving leather quality by addressing fire branding. For this project, we are creating educational materials for livestock ranchers about alternatives to fire branding as a technique for marking animals. We have prepared a booklet that explains these alternative methods in detail. The material has been completed and is scheduled for publication in November 2024.

[PEC Programa de eficiência de carcaça \(Carcass efficiency program\)](#)

Improvements in productivity are important sources of reductions in animal protein use. Improved breeding and handling practices increase the average weight of carcasses and consumption rates. This allows for increased production while using fewer animals and slowing down the rise in

environmental damage caused by pasture or waste. The Minerva Foods has therefore set clear objectives within this program to:

- a) To maximize the use of raw materials by incentivizing efficient livestock handling and carcass standardization, by encouraging producers to adopt improvement practices that reflect an optimization of the final product; - Increase in Scope.

- b) To increase the scope.

Changes to business focus

Reducing reliance on animal-based foods can be accomplished through various means, including investment in businesses focused on alternative proteins and the low-carbon economy. Minerva Foods, via the Corporate Venture Capital program, has contributed to startups that foster businesses beyond the animal protein industry. As part of our commitment, we pledge to invest up to \$30 million in ten companies for five years (2021-2025). The following are the current investments made through 2023:

-The Every Company (2020; \$4 million): A pioneering startup in the development of protein products that use a fermentation process and are free of animal protein.

-Shopper (2021; \$5 million): An online system for purchasing and replenishing household items such as groceries, cleaning supplies and personal care products.

-Traive (2021; US\$3 million): To develop credit models for the agricultural sector to facilitate – rural producers' access to the most diverse financial solutions and products on the market, reduce bureaucracy, and improve credit risk analysis, contributing to greater transparency and lower risk, benefiting producers and creditors;

– Liv Up (2022; \$5 million): It is a food tech company focused on producing healthy, ready-made meals and investing in protein diversification and innovative product development at an early stage.

– Bluebell Index (2023; \$2 million): It is a Brazilian climate tech firm specializing in the creation of environmental assets such as carbon, hydrology, soil, and biodiversity.

– Insertion of MyCarbon (2021 - \$13 million): As a subsidiary of Minerva Foods, integrated into the Other Businesses sector - This is a company initiative that operates on three business fronts: developing carbon credits, selling carbon

credits, and adding value to Minerva's products. MyCarbon specializes in originating carbon credits via the Renove Program (supply chain) and collaborating with other players in the sector. MyCarbon's primary objectives include:

- a) Carbon-neutral meat project certification of 30,000 head of cattle in Brazil by 2023 (In progress).
- b) To Offset meat production of 10,000 tons by 2024 (In progress).
- c) Carbon neutral meat production of 3,000 tons by 2024 (In progress).
- d) Attainment of ZERO net emissions (carbon neutral) by 2035 for all Minerva Foods operations

Renove (2021):

The Program is for engaging rural producers to collaboratively implement sustainable, profitable, and low-carbon agriculture. This program directly partners with MyCarbon. Renove's primary objectives and initiatives consist of:

- a) *MRV Agro Project (2020-2021)*: Partnered with Embrapa to calculate the carbon balance for 23 ranches in Brazil, representing 12% of the volume of cattle purchased in 2021. The study revealed that 11 of the 23 ranches had a carbon-negative status due to their effective carbon sequestering practices.
- b) *Carbon on Track*: A partnership with Imaflora calculated the carbon balance of 25 ranches in the countries where Minerva Foods operates (Argentina, Brazil, Colombia, Paraguay, and Uruguay). The results demonstrated that these ranches emitted 44% less than the international average for the activity, with three of them being carbon negative.
- c) *LATAM Certification Project*: In 2022, Minerva Foods exported certified carbon neutral meat from certified ranches in Uruguay for the first time. This project was expanded to Brazil in 2023 (Project in progress).
- d) *Carbon Project*: Groundbreaking project to generate carbon credits from implementing best practices on supplier ranches (Project in progress).