

2021

Corporate Responsibility Report

Arla Foods Ingredients Supplement



Arla Foods Ingredients
Discovering the wonders of whey 

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NEW STRATEGIES FOR SUSTAINABLE CHANGE



Arla Foods Ingredients can look back on a year of balancing challenges with constructive change. Despite the obstacles raised by the ongoing COVID-19 pandemic, we have come through 2021 strengthened, optimistic and with a renewed flexibility due to new ways of working.

Four major developments stand out: the opening of our state-of-the-art R&D innovation centre; the initiation of the four workstreams that will sharpen our resource efficiency; the acceleration of our carbon reduction goals up to 2030; and the launch of our FUTURE26 strategy.

A key to our future

Our R&D innovation centre is a true milestone. Designed for collaborative research and development, the centre is in many ways a key to our future. It is here that we will explore new territory within dairy-based nutrition and conceive the technology that will make our production processes progressively safer, more precise and more sustainable. Our new whey protein fraction for kidney diets, for example, is a direct outcome of our latest process technology.

The innovation centre could not have come at a better time. In 2021, we consolidated the four workstreams – energy, water, food waste and packaging – that will optimise our use of resources moving forward. We expect many workstream initiatives will eventually draw on knowledge generated by the centre and its external research partners.

Reflections on responsibility

Over time, the context that we operate in has become increasingly complex and volatile. Demands on the quality of our products and sustainability of our operations are growing. As international economies rebound from the pandemic, we continue to navigate disruptions in our supply chain, rising energy prices and inflation.

While it is beyond our power to control external market pressures, they do give us cause to reflect on our responsibility as a global ingredients company in a world of limited resources, threatening climate change and a growing need for safe, high-quality food.

Our accelerated ambition

Consequently, one of our key actions in 2021 was to follow our parent company Arla Foods in accelerating our carbon footprint ambition. This means we are committed to the group-level target of a 63% absolute reduction in scope 1 and 2 carbon emissions by 2030 compared to the level in 2015 – a target verified by the Science Based Targets Initiative as aligned with the Paris Agreement's aim to limit global warming to 1.5°C. For us at Arla Foods Ingredients, it is an enormous undertaking that will require us to look beyond existing opportunities for energy optimisation and invest in emerging technology for large-scale industrial electrification.

Our FUTURE26 strategy, launched in November, sets the overall framework for reaching our sustainability goals, including a EUR 20 million provision for investments in the green transformation of our production facilities. Along with our commitment to innovative development, the digitalisation of our processes, procedures and supply chain will be an essential enabler. As we report in this supplement, our digital journey has begun.

Best practices moving forward

Through all our endeavours, dedicated people lie behind our progress in quality and food safety, resource efficiency, nutrition research and development, and workplace safety. So it was good to see from our annual Barometer engagement survey that colleagues from across our organisation express a high level of engagement and are generally happy with working conditions during COVID-19.

Here, at the beginning of 2022, the expectation is that we will soon be released from the pandemic's clutches. We will take what we have learned with us as we work to grow our business responsibly and contribute to the wellbeing of the planet and its people.

Henrik Andersen
CEO

OUR CONTRIBUTION TO THE GLOBAL GOALS

The 17 UN Sustainable Development Goals are a strong tool for guiding responsible business operations and growth. At Arla Foods Ingredients, we consider the SDGs a source of inspiration and motivation in our continuous improvement work.

We continue to assess areas where we have potential to make a direct contribution to the goals. Based on these reflections, we have highlighted the following goals in the Ambitions & Progress Data chapter of this supplement.

STRONGER PLANET



<div style="background-color: #00AEEF; color: white; padding: 5px; margin-bottom: 5px;"> 6 CLEAN WATER AND SANITATION </div>  <p>Ensure availability and sustainable management of water and sanitation for all</p>	<div style="background-color: #FF9933; color: white; padding: 5px; margin-bottom: 5px;"> 9 INDUSTRY, INNOVATION AND INFRASTRUCTURE </div>  <p>Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation</p>	<div style="background-color: #FFC000; color: white; padding: 5px; margin-bottom: 5px;"> 12 RESPONSIBLE CONSUMPTION AND PRODUCTION </div>  <p>Ensure sustainable consumption and production patterns</p>
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STRONGER PEOPLE



<div style="background-color: #FFC000; color: white; padding: 5px; margin-bottom: 5px;"> 2 ZERO HUNGER </div>  <p>End hunger, achieve food security and improved nutrition and promote sustainable agriculture</p>	<div style="background-color: #4CAF50; color: white; padding: 5px; margin-bottom: 5px;"> 3 GOOD HEALTH AND WELL-BEING </div>  <p>Ensure healthy lives and promote well-being for all at all ages</p>	<div style="background-color: #9C27B0; color: white; padding: 5px; margin-bottom: 5px;"> 8 DECENT WORK AND ECONOMIC GROWTH </div>  <p>Promote inclusive and sustainable economic growth, employment and decent work for all</p>	<div style="background-color: #FFC000; color: white; padding: 5px; margin-bottom: 5px;"> 12 RESPONSIBLE CONSUMPTION AND PRODUCTION </div>  <p>Ensure sustainable consumption and production patterns</p>	<div style="background-color: #004A80; color: white; padding: 5px; margin-bottom: 5px;"> 17 PARTNERSHIPS FOR THE GOALS </div>  <p>Strengthen the means of implementation and revitalise the global partnership for sustainable development</p>
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ABOUT ARLA FOODS INGREDIENTS

Arla Foods Ingredients is a global dairy-based ingredients company and 100% owned subsidiary of Arla Foods. We sell our ingredients to food manufacturers in more than 100 countries.

Results 2021

Our net revenue totalled EUR 829 million in 2021, which is a 12% increase compared to 2020. More information about our financial performance is available in the Arla Foods annual report.

Market development

Arla Foods Ingredients is one of the world's leading producers of milk and whey-based ingredients, targeting early life, sports and medical nutrition, health foods for specific consumer groups and functional solutions for bakery and dairy products.

We have built our business around our ability to discover and deliver components in milk and whey that can bring value to the food industry. Our goal is to utilise our raw materials to their highest potential.

Production sites

Our flagship whey processing facility is Danmark Protein, located in West Jutland, Denmark. This is where we produce the most specialised whey-based ingredients in our portfolio and the highest volumes overall. Our third-party manufacturing facility and second largest site ARINCO is located nearby.

Arla Foods Ingredients owns and operates the AFISA plant in Argentina. Our joint venture facilities include ArNoCo in Germany and MVI in England.

Overview of production:

Danmark Protein, Denmark

Advanced whey protein processing facility, including dedicated plants for hydrolysate and dry-blend lactose production

ARINCO, Denmark

Third-party manufacturer of products for child nutrition and milk powder

AFISA, Argentina

Leading whey processor in MercoSur, producing whey proteins and permeate

ArNoCo, Germany

Joint venture with DMK, producing whey protein concentrate for further processing at Danmark Protein and lactose

MVI, England

Joint venture with Volac, producing whey protein concentrate and permeate powder





STRONGER PLANET

As a resource-intensive ingredient manufacturer, we recognise our responsibility to the environment. In 2021, we sharpened our focus on energy, water, food waste and packaging.

WORKSTREAMS FOR THE GOALS

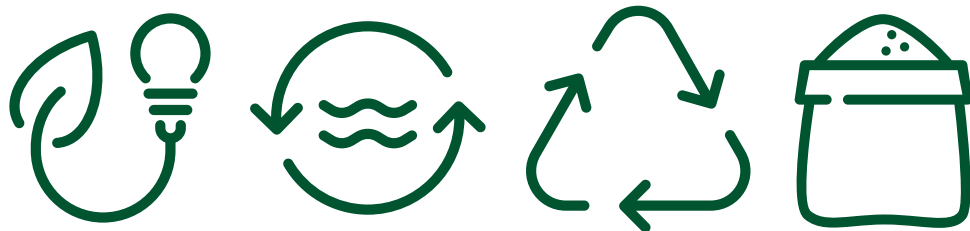
As a growth company in a resource-intensive industry, Arla Foods Ingredients has a heavy responsibility on its shoulders. Our journey towards a green transition gained renewed urgency this year when our parent company, Arla Foods, announced an accelerated carbon reduction ambition up to 2030, in line with the 1.5°C global warming pathway of the Paris Agreement. This has contributed to a redoubling of our efforts to minimise our environmental footprint and ensure we grow our business sustainably.

There are several important developments to highlight from 2021. One is the inauguration of our R&D innovation centre, which will support the discovery of new technol-

ogy to help us reach our environmental goals. Another is our work to establish the four workstreams – within energy, water, food waste and packaging – which were identified in 2020 as the key drivers for minimising our overall footprint.

We have also progressed with our commitment to maximising raw material utilisation and the integration of our business in the circular bioeconomy.

This chapter gives an overview of our primary activities to reduce the environmental impact of our production in 2021. Detailed performance figures for each plant are available in the Ambitions & Progress Data chapter.



Strategic investments

Our new innovation centre opened in October and will eventually employ up to 100 scientists and technicians, all working with research and development in whey and milk. Located next to our flagship production plant Danmark Protein, the centre will play a central role in moving our sites towards a circular production model. Much of the centre's research will be based around collaborations with leading universities and industry professionals.

Research areas include advanced separation technologies for isolating specific whey or milk components and heat treatment and pasteurisation technology to improve the functionality and shelf life of our products. In addition

to transforming our processes, we expect to gain new tools for utilising the full value of our raw materials.

The growing global demand for whey and milk-based ingredients also requires that we continuously expand our production capacity. In 2021, we launched a new utility master plan to develop the infrastructure at Danmark Protein, with a strong focus on the transition to green technology. The plan will prepare the plant for the construction of new and upgraded production lines and minimise the risk of breakdown in utility supply and distribution systems. If all identified projects are implemented, the plan will entail a total investment of 85 million EUR up to 2030.



Arla Foods Ingredients
Innovation Centre

ENERGY

During 2021, we revised our approach to carbon reduction. Investments in energy reduction and reuse and new technology are essential to achieve our goals.

A new ambition for carbon reduction

Growing our business while reducing our carbon emissions is a major challenge at Arla Foods Ingredients. In 2021, our parent company committed to accelerating our ambition considerably. Meeting this goal requires us to increase our focus on decarbonisation and optimisation strategies at our three fully-owned production sites Danmark Protein, ARINCO and AFISA. In collaboration with our partners, we are also working on reduction initiatives at our joint venture sites ArNoCo and MVI.

Reduce and reuse

While the task ahead is much greater than a year ago, our starting point is positive. First of all, we have been working to improve our energy efficiency for many years. This has given us considerable experience in identifying and implementing initiatives to make our processes more energy efficient.

In 2021, we mapped the future infrastructure requirements of our Danmark Protein site in a new utility master plan. From an energy perspective, the plan includes the development of an optimised heat distribution system that will cover the entire plant. Construction is underway and will eventually equip us to redirect and reuse surplus heat generated by our biogas motors and cooling facilities. In the future, all new processing lines will be hooked up to this system from the outset.

From gas to electricity

Along with the use of renewable energy sources like biogas, energy reuse is an essential element in our strategy to reduce carbon emissions while our production grows. Since 2015, both have helped reduce the natural gas share of our energy mix by 26% at our two

Danish production sites. However, energy reuse in the form of surplus heat distribution cannot provide the high temperatures we need for our spray driers, for example. At present, high-temperature processes up to 220°C account for more than two-thirds of our annual heat consumption. While the two biogas motors at Danmark Protein can provide fossil-free energy for these processes, they do not have sufficient capacity to meet all needs. For these reasons, electrification is the inevitable path moving forward to phase out our dependence on fossil fuels. In Denmark, we already benefit from the fact that 86% of the national electricity supply is now based on renewable sources – an advantage that significantly reduces indirect scope 2 emissions.

As renewable energy sources are less available in Argentina, our AFISA plant has adopted a different approach. In early 2021, the plant completed the installation of a natural gas pipeline to reduce its reliance on fuel oil. As a result, AFISA achieved a 13% reduction in its scope 1 and 2 emissions by year-end. Here, the use of natural gas provides an effective transitional solution until more sustainable energy sources are available.

Looking for opportunities

Rapid developments within heat pump technology look promising for the future. For the time being, though, the technology is not mature enough to fulfil our highest temperature needs. In other words, we must look for other opportunities, drawing on the cross-functional competences of our R&D innovation centre and research partners. During 2022, we will build our 2030 roadmap to a step change in carbon reduction at Danmark Protein. This will then be the blueprint for our ARINCO and AFISA sites.



Our science-based climate ambition

The Science Based Targets Initiative (SBTi) has approved our new group-level 63% absolute reduction target for scope 1 and 2 emissions as consistent with the Paris Agreement ambition to limit global warming to 1.5°C. This is more than double the previous reduction target of 30%, against a 2015 baseline. Arla Foods Ingredients will deliver into the target by driving the green transformation of the three fully-owned production sites.

The existing 30% reduction target for scope 3 emissions continues to meet the SBTi criteria for ambitious value chain goals. At Arla Foods Ingredients, most of our scope 3 emissions originate from the raw materials we source from Arla and external suppliers. In 2022, we will start mapping our scope 3 impact in more detail and work on a supplier engagement strategy.

See page 28 for more information on our 2021 performance.



ENERGY (CONTINUED)

Energy initiatives

Compressed air is a useful tool for many processes at our production sites. At Danmark Protein, a new 60°C system is under construction to redistribute surplus heat from the compressors. The system will be used to heat the lactose and hydrolysate departments, replacing the current steam heating based on natural gas. An annual energy saving of 3.4 million kWh is expected, equivalent to the average energy consumption of 182 households.

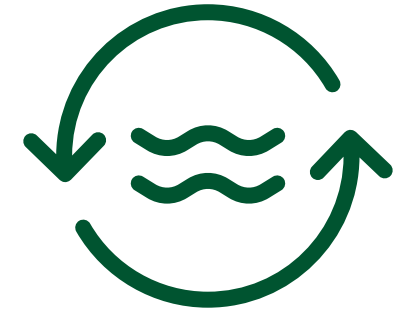
In 2022, work will begin on a 90°C system to capture heat from Danmark Protein's biogas motor emissions for redistribution in the plant. The system will be designed to allow future connection to heat pumps as the plant moves towards electrification. A series of internal research projects have investigated the potential for heat pump installation. Planning will continue through 2022, with a view to an initial investment in 2023.

Other major investments include the new energy-efficient spray-drying tower at ARINCO, which was in the commissioning phase at year-end. At our joint venture plant MVI, optimisation of the evaporator and drying process enabled a 5% reduction in energy consumption.



WATER

Our ability to reuse and recycle water from our whey raw material and processes is key to reducing our reliance on well water. In 2021, we took further steps to improve.



Reuse and recycle – towards a circular water flow

Efficient cleaning processes are indispensable to maintain the highest standards of food safety and hygiene in production. For that reason, around 70% of our water use is related to the cleaning in place (CIP) systems on our processing lines. Whenever we introduce an initiative to reduce our dependence on well water, reuse or recycle water in production or limit our wastewater discharge, we must ensure there is no negative impact on our product quality.

Technical water facility

In 2020, we launched the Waterfall Project to monitor and coordinate water initiatives across Danmark Protein, ARINCO and the neighbouring Arla dairy. All three sites discharge wastewater to the same local treatment plant. During 2021, the wastewater treatment plant began sending cleaned wastewater to a new technical water facility, which is the Waterfall Project's first major investment. An advanced filtration process then upgrades the wastewater to technical water – currently 500m³ a day – which is currently fed back to Danmark Protein.

Once fully expanded, the facility will have a daily production capacity of 2,000m³ recycled water, equivalent to around half of Danmark Protein's well water consumption. In the first instance, recycled wastewater is being used to replace well water in the cooling towers. Other non-food contact applications will be hooked up to the technical water supply in the near future.

More reuse capacity

Water accounts for more than 90% of the raw whey that we receive for processing. Whey water reuse has long been part of our strategy to limit our reliance on well water. Due to this ongoing effort, our AFISA plant today uses whey water to meet most of its water needs, while Danmark Protein relied on whey water for 60% of its water needs in 2021. Water reuse at ARINCO was just over 14.5% in 2021 – a much lower figure that can be explained by the very different nature of the raw materials and production processes compared to AFISA and Danmark Protein

At Danmark Protein, we have increased the capacity of the reverse osmosis facility associated with our dry-blend lactose plant by 49% over the past year. This is one of multiple facilities that makes purified whey water – known as reverse osmosis polished (ROP) water – available for processes all over the plant, including food contact processing steps. In the utility master plan for Danmark Protein, we have specified a series of initiatives to increase the level of reuse further.

Wastewater quality

Efficient reuse and recycling are the basics for achieving a circular water flow. However, we are not only looking at water volume. We also aim to improve the quality of our wastewater before sending it to the treatment plant, for example by reducing phosphorus and chloride residues from whey and cleaning agents. In the spring of 2022, a two-week workshop is planned to identify further potential for optimising wastewater quality at Danmark Protein and ARINCO.

Although our processing plants comply with all legal requirements for wastewater, we want to remove as many trace components as possible, so fewer end up as sludge at the wastewater treatment plant – lowering the environmental footprint of wastewater.



The team responsible for the new technical water facility: Anders Harpøth Østergaard, project leader, Rasmus Lisbygd Østergaard, project manager and Søren Pedersen, maintenance technician

WATER (CONTINUED)

Water-saving initiatives

Arla Foods Ingredients is member of the public-private Danish Partnership for Resource and Water-Efficient Industrial Food Production (DRIP), which aims to reduce drinking water consumption in the food industry by up to 30% from 2015 to 2025. One of the opportunities identified by the partnership is to use sensors to monitor CIP processes.

At our ARINCO plant, we have run a pilot project in the milk reception department, where the sensors keep track of trace contaminants and signal when CIP is sufficient. The initial outcome is a 24% reduction in water use and a 14% reduction in cleaning agent circulation time, which gives additional energy savings. Based on these promising results, our intelligent CIP monitoring system will become fully automated during 2022, when we also expect to introduce it to Danmark Protein.

In a separate project at Danmark Protein, our R&D team has investigated the possibility to cut water use in the production of two whey protein isolate (WPI) products. Their specific focus was the rinsing process, where ROP water is used to remove minerals and meet purity requirements. Tests have revealed potential to cut ROP water consumption by at least 50% without compromising purity. The optimised process also eliminates the need to replace phosphorus, which is currently washed out to below the minimum level for WPI during rinsing. Production trials are scheduled for early 2022.

We continue to pursue further opportunities to reduce water consumption in production. To this end, a new

total plant assessment is planned at Danmark Protein and ARINCO in 2022, with a particular emphasis on water efficiency.

Cleaning agents

Regarding the cleaning agents used in our CIP systems, it is essential to minimise the potential risks to food safety, colleagues and the water environment. During 2021, we carried out a new assessment of unwanted substances in CIP chemicals to ensure we maintain the lowest possible risk profile.

The result is a revised guideline for cleaning agent suppliers that complies both with legislative requirements for food, labour and environmental safety and up-to-date international standards, such as the Nordic Swan Ecolabel.



The wastewater treatment plant that serves Danmark Protein and ARINCO

FOOD WASTE

Our food waste workstream will provide a new indicator of how well we utilise our raw materials. Developments in process technology are supporting raw material traceability.

Preparations to report on food waste

Extracting valuable components from whey and maximising utilisation of raw materials are established priorities at Arla Foods Ingredients. So, initiatives to make the best possible use of all side streams in our production were again on the agenda in 2021. The latest development is that we are now preparing to report on our resource efficiency in terms of food waste.

Since the establishment of the food waste workstream, we have been working with our parent company to determine how we monitor food waste and the data we need to track our performance. The goal for the entire Arla Foods group is to reduce food waste at processing level by 50% – measured as waste volume per kilo of raw material – from 2015 to 2030

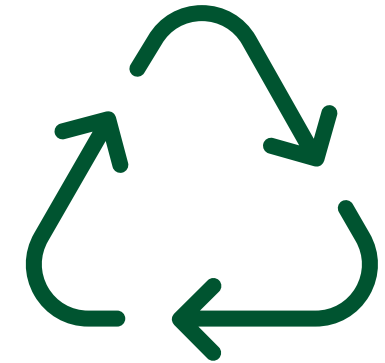
As more than 90% of our primary raw material is water, we believe the way forward is to report food waste in terms of the solids content. In other words, we want to focus our reporting on, for example, the dry matter that remains after water extraction. All components that leave the food chain, for example in wastewater or side streams for biogas or due to spillage or other loss, will then be included in our food waste statistics.

During 2021, we supported Arla Foods in the work to improve and automate data capture and processing to enable fair and valid food waste reporting. We will share more about our progress in our 2022 corporate responsibility supplement.

How is food waste defined?

Food waste covers all raw material waste along the value chain that was initially intended for human consumption. As a business-to-business company, Arla Foods Ingredients is concerned with food waste that occurs during production and logistics.

This includes production side streams that are sent for biogas production or land disposal, as well as whey and milk sent to wastewater treatment via the drains. Whey and milk components that are diverted for use as animal feed remain in the food chain and, as such, are not defined as waste.



Raw material optimisation

Optimisation of our milk and whey fractionation processes is key to making ever better use of our raw materials and, through that, reducing waste. The opening of our new R&D innovation centre is a milestone that will strengthen these efforts.

Throughout the history of Arla Foods Ingredients, membrane technology has been the backbone of our ingredient production. We regularly test the efficiency-improving potential of new membranes developed by our suppliers. Today, our R&D specialists are collaborating with the University of Twente in the Netherlands and Laval University in Canada to explore how membranes can separate protein molecules with even greater precision.

In one project, we are investigating the possibility to combine membrane technology with electro dialysis. This approach both has the potential to make the separation process more precise and to reduce membrane clogging – lowering water and energy use during processing and cleaning cycles.

A recent achievement is the development of the patented milk fractionation technology now in use at our ARINCO plant. By enabling us to by-pass the cheese-making process and extract whey directly from organic milk, the technology gives high control over ingredient composition, reduces processing and improves traceability in our supply chain.

FOOD WASTE (CONTINUED)

15% less ingredient loss

Some of our ingredient loss occurs in the spray-drying chamber, where powder get caught in the filters. While our newer spray-drying towers at Danmark Protein are built to minimise such loss, a project has investigated how to reduce ingredient loss from one of our older towers. As a result, an adaptation of the tower cyclones has reduced filter powder by up to 15%. That means more of our raw materials find their way into our final products.

100% on-spec production

Whey protein concentrate (WPC) is subject to strict microbiology specifications. At our AFISA plant in Argentina, the installation of a spore-removing bactofuge on one of the WPC lines has increased on-spec production to 100%. The plant is also better equipped to accommodate slight variations in the microbiological quality of the raw whey that comes from suppliers – securing better raw material utilisation and less waste. A second bactofuge will be installed on another WPC line in 2022.



The team responsible for ensuring high quality and food safety standards and production efficiency at AFISA

PACKAGING

In 2021, we launched a new packaging strategy with well-defined goals. Solutions will be developed and tested in close dialogue with packaging suppliers and customers.



A packaging strategy towards full circularity

The organisational effort to source sustainable packaging materials has shifted up a gear over the past year. Coordinated by our new packaging workstream, improvement initiatives are working towards two goals: to ensure that all packaging is recyclable by 2025 and to phase out fossil-based virgin plastic by 2030. Both goals are aligned with Arla's ambition to make packaging fully circular by 2030. As a business-to-business company, our scope covers the packaging we use for our own brand products.

During 2021, we have assessed existing packaging materials – paper, cardboard, plastic and metal – in collaboration with suppliers. Using this evaluation as a baseline, in 2022 we will define the roadmap towards increasing the circular value of materials and reducing virgin plastic.

Recyclable goal in sight

We are already close to achieving the first of our ambitions to use 100% recyclable packaging materials. Due to its nature, metal, for example, is infinitely recyclable. To help raise awareness, we are in dialogue with a European supplier regarding the use of the Metal Recycles Forever logo on metal tins.

In addition, all cardboard is sustainably sourced, being certified either by the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC).

Challenges with plastic

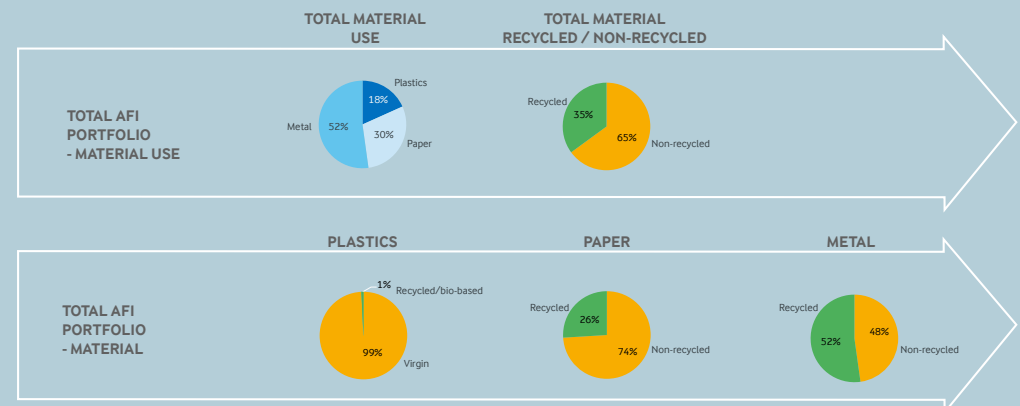
However, several key challenges remain to strike a balance between the recycled content of materials, requirements for performance and food safety, and commercial viability. This is particularly true of plastic. Until new innovative materials appear on the market, plastic will remain an important packaging material for Arla Foods Ingredients products.

For this reason, the ambition to phase out fossil-based virgin plastic is pressing – and we are starting from scratch. Although various technologies exist for the recycling of plastic, several issues have yet to be resolved. Mechanically recycled plastic, for instance, is currently not approved for food contact materials. Here, the risk of substance migration into food products is a primary concern. Chemical recycling via pyrolysis holds more potential, but the existing technology is energy intensive. Another option is bio-based plastic produced from the side streams of sugar or paper production.

In 2021, we tested the suitability of bio-based and mechanically recycled plastic film as pallet wrap, a non-food contact application. We expect ongoing research to improve the commercial viability and circularity of alternative plastics for food contact packaging in the future. Continuous dialogue with our packaging suppliers keeps us up to date with the latest developments and ensures their innovation takes our requirements and those of our customers into account.



Packaging materials by type and recycling level



Data provided by suppliers in 2020 and covering Danmark Protein and ARINCO only.



STRONGER PEOPLE

The world needs a safe, sustainable and nutritious food supply. We aim to contribute by striving for excellence, empowering our people and engaging in partnerships.

QUALITY & FOOD SAFETY

Our roadmap to quality and food safety excellence is strengthening our procedures and quality mindset. The goal is to become the most trusted partner for delivering safe ingredients.

Ensuring excellent quality and food safety standards is our biggest obligation as a supplier to the global food industry. Many of our ingredients are incorporated in foods for infants, the elderly and other vulnerable consumers with a nutrition-related health challenge. We are also third-party manufacturer of finished products for infant nutrition

Over the past four years, our Quality & Food Safety (Q&FS) strategy has driven efforts to overhaul procedures and systems and embed a new mindset in our organisation. Through the development of our Q&FS capabilities, our ambition is to become the most trusted partner for delivering safe ingredients. This will be the foundation for our future business growth.

Since the launch of our strategy, we have seen a clear improvement in our performance concerning product-related customer complaints. A survey in the autumn confirmed that customers recognise the improvement in our product quality. Consequently, we experience that our dialogue with customers is increasingly less about complaints and more about how we can collaborate to drive the quality agenda. See page **24** for more information.

In 2021, we pursued the activities set out in our project roadmap. By the end of the year, all activities were complete or underway. Those that are not yet finalised will be completed in 2022 in preparation for the next wave of the current Q&FS strategy, which will begin in 2023.

The Quality & Food Safety project roadmap 2021



Raw materials
you can trust

Including:

Packaging materials
Supplier approval
Logistics



A proactive
quality
& food
safety
culture

Including:

People development
Process digitalisation & documentation
Microbiological performance & criteria



Quality &
food safety
by design

Including:

Calibration & maintenance
Process control
Sampling

QUALITY & FOOD SAFETY (CONTINUED)

Raw materials you can trust

Priority improvement projects included a new setup for evaluating and auditing the suppliers we rely on for ingredients, packaging and transport. This ensures our international procurement teams follow the same procedures. As physical audits were largely impossible in 2021 due to COVID-19, it was necessary to establish a procedure for virtual audits. We expect to continue with a mix of physical and virtual visits in the future.

A proactive quality & food safety culture

At our largest production site, Danmark Protein, an intensive training programme has heightened awareness of environmental hygiene in key areas of production. By fine-tuning behaviour, the objective is to minimise the risk of our powder products becoming contaminated with harmful bacteria, such as Cronobacter which can survive in very dry conditions and pose a particular risk in infant nutrition. We carry out extensive sampling to ensure no unwanted bacteria are present in our products and production areas.

This and a similar initiative at our ARINCO plant are all part of the proactive effort to build our internal mindset and empower colleagues to maintain and improve Q&FS standards within their own work area. Our new quality institute for sales teams and quality, environment, health and safety (QEHS) learning library – both launched over the past year – will help drive this development throughout our organisation.

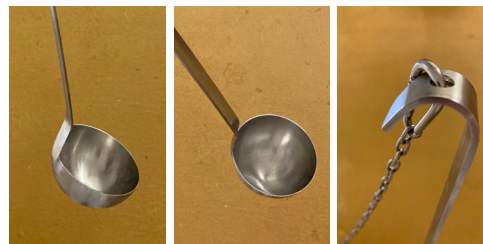
Compliance with Q&FS standards requires considerable administrative work to provide the necessary

documentation. In 2021, we launched a new digital platform to simplify and align documentation procedures at all locations and support knowledge sharing. Two further digital projects are planned for 2022. These will enable us to collate data about quality deviations – both those we discover ourselves in production and those that are the subject of customer complaints.

We recognise data as a valuable resource for improving efficiency, traceability and resource utilisation and minimising errors that, worst case, can lead to product recalls. On that basis, we are currently establishing the framework for the end-to-end digitalisation of our supply chain.

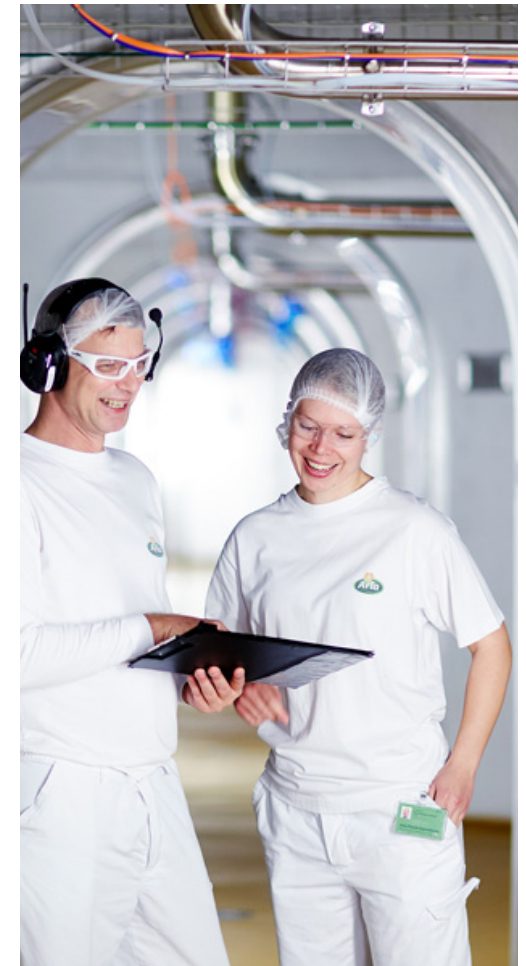
Quality & food safety by design

Over the years, we have worked hard to stabilise our production processes and analytical methods. During 2021, new global procedures for product sampling and the calibration of production equipment have replaced the site-specific practices previously in use. The alignment is aimed at securing uniform product quality at all sites and, through that, minimising waste due to out-of-spec production. All sites have received training in the new procedures.



Demands on product quality continue to increase. For this reason, we have introduced process analytical technology to measure the composition of product streams during production. This enables us to adjust the process continuously to ensure the final product is within specification limits. During 2021, we launched a product documentation project, which focuses on measuring and accounting for even more of the minor components in our products.

Our production performance is now being measured by a new quality index tool introduced in 2021. This visualises our ability to meet the strict product specifications that apply to ingredients for infant and medical nutrition. We will start reporting on our product quality index from 2022.



HEALTH & NUTRITION

In 2021, we gained a key resource for future nutrition research and collaboration with international research partners – our new R&D innovation centre.

Our work with health and nutrition focuses on mapping and documenting dairy ingredients that can support consumer health throughout life. In partnership with independent research institutes, we contribute to clinical studies that investigate possibilities to improve the nutritional quality of foods for specific needs.

One recent discovery is a whey protein fraction that holds promise for kidney patients, enabling them to maintain their protein intake while reducing the load of minerals such as phosphorus, which can be harmful to these patients. With the opening of our new R&D innovation centre, we have gained additional resources to explore these and other components in milk and whey.

During 2021, we decided to assess the potential positive impact of our whey protein and lactose sales to special nutrition sectors. The final impact report will be audited by an external third party and released in the first quarter of 2022.

Infant growth and metabolism study

A clinical study is evaluating the effect of a protein-reduced infant formula enriched with alpha-lactalbumin compared with another protein-reduced formula, a standard infant formula and breast feeding. The aim is to determine whether the growth and metabolism of infants who receive the alpha-lactalbumin-enriched formula are more similar to that of breast-fed infants.

Previous research suggests that, by developing infant formula with a protein content and amino acid composition closer to that of breast milk, it may be possible to reduce

the risk of childhood overweight. This may also have the potential to reduce overweight, obesity and related health challenges in later life.

Arla Foods Ingredients is providing the alpha-lactalbumin for the study, which will include 320 infants aged from four to eight weeks. The infants' growth, key biomarkers and health parameters will then be followed until they are three years of age. Arla Foods Ingredients is sponsoring the study, with Skåne University Hospital, University of California Davis and Umeå University as research collaborators.

Infant formula is an important source of nutrition for infants without access to breast milk. Where breast milk is available, Arla Foods Ingredients follows the World Health



Organization recommendation for exclusive breastfeeding during the first six months of an infant's life and partial breast-feeding up to the age of two in combination with appropriate complementary foods.

Tuberculosis study in Guinea-Bissau

Our collaboration partner Aarhus University is well underway with a clinical study to investigate the effect of dietary supplementation with whey protein concentrate (WPC) on weight gain and recovery in tuberculosis patients in Guinea-Bissau.

Following a series of delays due to political unrest and COVID-19 in the country, the study is now starting to show results. One preliminary finding is that patients who receive a daily WPC supplement are more likely to complete the six-month tuberculosis treatment than those that do not.

Providing the situation in Guinea-Bissau remains stable, the study should be finalised in 2022.

Dataset for protein quality

Arla Foods Ingredients is part of a consortium that is funding the international Proteos project, which aims to document the nutritional quality of dietary proteins using the digestible indispensable amino acid score (DIAAS).

Now in its third and final phase, the project is generating data about the quality of 100 protein sources, including dairy and plant proteins and dairy-plant hybrids. The resulting dataset will support the formulation of nutritious diets with an appropriate content of bioavailable amino acids.

The UN Food and Agriculture Organization recommended DIAAS as a more accurate alternative to the current globally recognised protein digestibility corrected amino acid score (PDCAAS) in 2014. Data from the Proteos project will facilitate the transition to the new scoring system.



AFFORDABLE NUTRITION

All our affordable nutrition partnership projects have malnutrition in focus. By sharing knowledge and expertise, we aim to build new, sustainable food supply chains.

In our partnership projects for affordable nutrition, we work with NGOs, government organisations, knowledge institutions and other companies to develop sustainable food supply chains. It is imperative from the outset that we both take considerable pains to understand the needs and circumstances of the developing countries where we operate and that we continuously reflect on our own conduct as a business.

Our approach to responsible business conduct (RBC) rests on three pillars: the mitigation of negative impacts and risks, the creation of positive impact and the integration of RBC in all operations. In 2021, we carried out an internal assessment of our RBC approach, using the GAIN Access to Better Dairy project in Ethiopia as a case.

The assessment highlighted the synergies that arise when partners overcome barriers by interacting and sharing knowledge across the value chain. As a result, one key outcome of the Ethiopian dairy project is a documented and scalable business model that can be adapted and transferred to other markets.

Within Arla Foods Ingredients, we will use the findings of our assessment as a tool to raise internal awareness of RBC and strengthen the third pillar of our approach – the integration of RBC in our operations.

GAIN Access to Better Dairy

GAIN Access to Better Dairy was our first project as a member of the GAIN Nordic Partnership. In 2020, we began collaborating with a new dairy partner in Ethiopia, as our previous partner had to leave the project due to

Responsible business conduct – the three pillars

Mitigating negative impacts and risks

- Take steps to identify risks and redesign business activities
- Assess where operations undermine SDGs

COVID-19. The dairy was fully integrated in the project during 2021. Other milestones during the year included the successful completion of consumer acceptability trials and the Ethiopian Bureau of Standard's approval of our approach as a new standard for fortified yoghurt. The yoghurt is planned to go on sale in Ethiopian kiosks from early 2022.

The Danish International Development Agency has approved a GAIN Nordic application to extend the project

Creating positive impacts

- Initiate activities that align with SDGs
- Use our core competencies to tackle global challenges

by two years. This will allow investigation of further possibilities to improve milk utilisation, reduce food waste and develop a greener business model. Together with our GAIN Nordic partners, we will produce a joint RBC learning document for this project.

Protein-enriched biscuit collaboration

Following more than 60 trials in our test bakery, we have finalised the recipe for an affordable protein-enriched

Integrating RBC in all operations

- Engage with RBC in all business strategies and projects
- Carry values into interactions with all partners to actively promote and inspire RBC

biscuit that will be used in another supply chain development project with DanChurchAid, Novozymes and other companies.

Including Ethiopian chickpea flour and whey protein, the recipe has been developed in collaboration with a biscuit producer in Addis Ababa. Production trials were planned to start at the factory in the autumn but were postponed until 2022 due to the political situation.



AFFORDABLE NUTRITION (CONTINUED)

This two-year project has received funding from P4G – a global forum that supports public-private partnerships aimed at accelerating sustainable development.

Value chain for papaya waste

Another GAIN project in Ethiopia aims to turn waste papaya fruit into a nutritious and affordable snack for low-income consumers. Over the next four years, Arla Foods Ingredients will be product innovation partner in the project, which will build a fruit processing value chain to reduce malnutrition, create jobs and cut post-harvest papaya loss.

The first prototype recipes for a dried fruit protein bar have been developed, based on papaya pulp and containing milk and whey-based ingredients. Ethiopian partners include three food producers and an agricultural engineering enterprise. The Confederation of Danish Industry is also working with Ethiopian business associations to establish the enabling environment for the business model.

Funding from the Danida Market Development Partnerships programme is supporting the project.

Valorising dairy side streams in Kenya

Without appropriate solutions for side streams, dairies are major contributors to food loss in the supply chain. The VALORISE project is examining how circular bioeconomy principles can be applied to dairy side streams in Kenya to reduce waste and help dairies diversify their business.

Our role as partner in the three-year project is to map the side streams and identify potential product development

opportunities. The acid whey left over from, for example, strained yoghurt and mozzarella production is one side stream of interest that can be used as the base for new affordable dairy products.

VALORISE is a multi-stakeholder project led by the UNEP DTU Partnership based in Copenhagen.



SUN Business Network

The Scale-Up Nutrition (SUN) Business Network plays an increasingly active role in sharing documented business models for building sustainable supply chains for affordable nutrition. This includes the fortified yoghurt business model developed by the GAIN Nordic Partnership in Ethiopia.

As a result, we are increasingly called upon to share our technical knowledge about affordable nutrition concepts with dairies in other developing countries. For example, a dairy in Pakistan has sought our support to develop a 3%



protein drink based on acid whey. Large-scale trials took place in December.

Zero Hunger Private Sector Pledge

Arla Foods Ingredients is one of 43 companies that signed up to the Zero Hunger Private Sector Pledge in 2021. Led by a coalition of international organisations, the pledge encourages companies to invest in at least one of the ten high-impact intervention areas identified by the Ceres2030 research consortium for tackling hunger. The GAIN Nordic projects in Ethiopia represent our investment.



CARING FOR COLLEAGUES

Engaged and dedicated people are our most valuable asset. Cross-organisational initiatives in 2021 emphasised colleague wellbeing, safety and empowerment.

The COVID-19 pandemic had a significant impact on working life again in 2021, requiring further efforts to ensure the wellbeing of colleagues throughout our organisation. Home working was the norm for many for long periods during the year. At our production plants, we followed the universal COVID-19 guidelines of our parent company Arla Foods to keep working conditions as safe as possible. In Argentina, the provision of busses to and from our AFISA site meant colleagues could avoid crowded public transport.



Towards the end of 2020, best practices were gathered from the first year of the pandemic. These proved a valuable resource in 2021, when we offered best practice sessions to all office colleagues and made a SharePoint site available with advice on subjects such as successful home working, remote team leadership and how to navigate the gradual return to the office.

Our annual Barometer engagement survey, which took place in the autumn, shows that these and our many other efforts have had the desired effect through this period of major change, with few colleagues expressing pandemic-related concerns.

The past two years have ushered in a new era of online meetings and considerably less travel. We are now looking towards a future with a mix of physical and online presence, where we will both enable and benefit from informal social interactions at the coffee machine and global online meetings. In preparation, we have established a broadcasting studio at our head office for live streaming. In addition to reducing our travel carbon footprint, we believe this new way of working will contribute to easier collaboration across our many locations and with customers.

Support for mental health and wellbeing

On questions of mental health, our Barometer survey has revealed a positive overall picture throughout our organisation. To maintain this, various site initiatives are in place to ensure colleagues can get the right support when needed. At ARINCO and our joint venture site MVI, team leaders and colleague representatives took part in mental health awareness training in 2021.

Danmark Protein has introduced a target scheme that requires all colleagues to contribute actively to wellbeing at work. A key motivator behind this initiative is the ambition to reduce unacceptable behaviour to zero. At ARINCO, open dialogue, a regularly revised policy and guide to dealing with reported incidents of unacceptable behaviour have contributed to a steady decline from 22% of colleagues who experienced unacceptable behaviour in 2011 to 3% in 2021. This remains a priority area at all sites.

Stronger endeavour on inclusion

In 2021, we strengthened our dialogue about diversity and inclusion. The aim is to foster diversity of thought and avoid unconscious bias, for example regarding gender, race and religion, and create a universal sense of belonging.

At senior management level, the dialogue focused on defining inclusion and its importance for Arla Foods Ingredients. The initial outcome is a series of initiatives, which we have included in our business plan for 2022 and onward to make inclusion an integrated part of our ways of working.



CARING FOR COLLEAGUES (CONTINUED)

Safety and empowerment at work

The international rollout and progress of our behavioural based safety programme Cornerstones continues. Across the board, we experience a high level of colleague engagement in the programme and a steady reduction in workplace accidents. In 2021, our joint venture site MVI celebrated five years without lost-time accidents.

As part of the Cornerstones programme, we have launched a SAFER House initiative at our head office in Denmark. The aim is to reinforce key behaviours for keeping people safe at work. A safety team has been appointed to ensure implementation.

Many other initiatives are involved in improving our performance. This includes risk assessments and training in connection with our new procedure for taking machines safely out of operation for maintenance and cleaning at our three fully-owned sites and joint venture MVI. As all production lines are different, standards for safe maintenance are adapted to each line.

The efficient and safe operation of our production plants is largely down to the knowledge and experience of our team leaders, maintenance technicians and area specialists. In recognition of this, Danmark Protein and ARINCO have introduced a new line-centric approach that moves more decision-making to the production floor. By empowering colleagues, the objective is to optimise efficiency and quality and further embed a safety and sustainability mindset. All production teams will receive training in the Lean toolbox.

Stop
and challenge
unsafe actions
and conditions

Always
walk, don't run
and look in the
direction you are
travelling

Full
and proper use
of all required
personal protec-
tive equipment

Ensure
mobile devices
are not in use
when on the
move

Remember
to use handrails
and take one
step at a time
when using
stairs





AMBITIONS & PROGRESS DATA

Arla Foods Ingredients maintained global operations and continued planned activities throughout 2021, despite various delays and disruptions caused by the COVID-19 pandemic. In this chapter, you can read about our performance in 2021 and priority actions for 2022. For information about policies and key performance indicators that apply to the entire Arla Foods group, please see the Arla corporate responsibility report.

FOOD SAFETY

Ambition

We aim to deliver quality and food safety above and beyond the expectations of customers, consumers and the authorities at all times. As a supplier to the infant nutrition sector, the youngest, most vulnerable consumers define the quality of all our products for the food industry.

Priority actions

In the year ahead, we will focus on completing the remaining activities in the second wave of our Quality & Food Safety (Q&FS) strategy and prepare for the next wave towards our goal to become the most trusted partner for delivering safe ingredients. Priority actions for 2022 include:

- Finalising the digitalisation of quality processes
- Completing the implementation of the maintenance transformation programme and line-centric organisation
- Optimising the quality control set-up
- Improving crisis management competencies and governance
- Stepping up proactive customer service

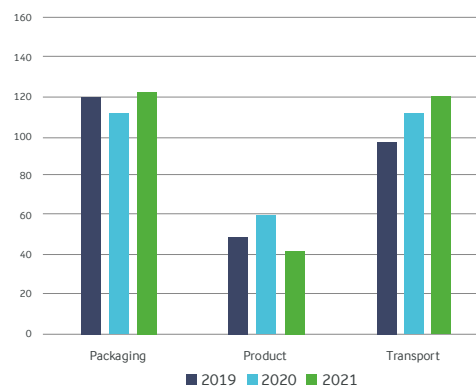
Progress

Customer feedback is starting to reflect the positive impact of our Q&FS strategy. In 2021, our customer survey found that perceptions of product quality have noticeably improved since the last survey in 2019. We also saw a further decline in complaints about product quality. A wide range of initiatives have contributed to this improvement. Key actions over the past year include a new supplier evaluation process, new global procedures for product sampling and process calibration and our ongoing training and awareness programmes.

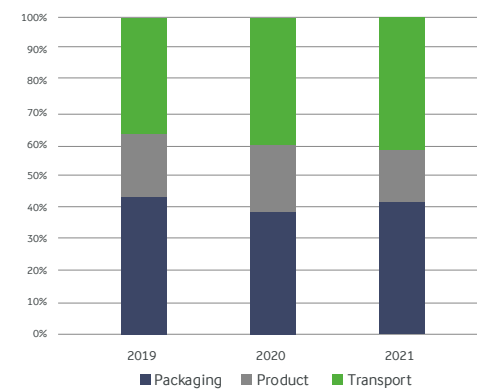
Customer complaints about packaging and transportation have risen slightly in 2021. This is largely due to global transportation challenges related to COVID-19, which have impacted transport routes and resulted in more handling and more broken bags.

Complaint performance

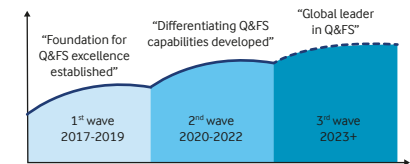
Category of accepted complaints



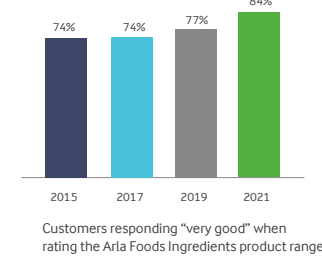
Distribution of categories of accepted complaints



Our Quality & Food Safety strategy



Product quality



Impact

On society

Any food safety issue with our ingredients is a risk to consumer health – including the health of infants, the elderly and those on special clinical diets.

On Arla Foods Ingredients

It only takes one food safety incident to damage our reputation and lose the trust of our customers. At the same time, we are keen to avoid quality issues caused by inefficient production and which lead to raw material waste.

On Sustainable Development Goals



NUTRITION

Ambition

We are committed to mapping the full nutritional potential of the proteins and other components in whey and developing commercial products that bring these nutritional benefits to consumers. Partnerships with research institutes are essential to achieving this goal. Using our ingredients and knowhow, we want to play an ongoing active role in projects to reduce and prevent malnutrition among children and young women in developing countries.

Priority actions

Arla Foods Ingredients is a member of the GAIN Nordic Partnership and the Scaling Up Nutrition (SUN) business network. In these capacities, we will contribute to the following in 2022:

- Scale up of the GAIN Nordic fortified dairy product model in Ethiopia, Tanzania, Kenya and Pakistan
- Commercialisation of a dried fruit protein bar based on surplus papaya fruit and documentation of the Ethiopian supply chain model

Additional project involvements include our collaboration with DanChurchAid, Novozymes and other companies. In 2022, we will support production trials of a protein-enriched biscuit in Ethiopia followed by product launch and documentation of the supply chain model.

As partner in the VALORISE project to investigate the potential for introducing circular bioeconomy principles to Kenyan dairies, we will identify product development opportunities with dairy side streams.

Progress

Arla Foods Ingredients is sponsoring clinical studies of the following:

- The effect of protein-reduced infant formula enriched with alpha-lactalbumin on the growth and metabolism of formula-fed infants
- The effect of dietary supplementation with whey protein concentrate on weight gain and recovery in tuberculosis patients in Guinea-Bissau

During 2021, we finalised the recipe for the protein-enriched biscuit project as part of our collaboration with DanChurchAid and others in Ethiopia. The first prototype recipes for the dried fruit protein bar with papaya were also developed.

In Ethiopia, a combination of COVID-19 and political unrest delayed the planned market launch of the fortified yoghurt developed through the GAIN Nordic Partnership.

Impact

On society

People's nutritional needs change from birth through childhood to adulthood and the senior years – and they vary from one person to the next, depending on expectations for personal performance and general health. Arla Foods Ingredients contributes to nutrition for life.

On Arla Foods Ingredients

The future of our company depends on our ability to operate and grow in a sustainable, responsible manner in line with the expectations of internal and external stakeholders.

On Sustainable Development Goals



HEALTH AND SAFETY

Ambition

The health and safety of the people who work at or visit the Arla Foods Ingredients sites is a top priority. Our target is zero work accidents and a working environment that empowers, engages and never compromises the physical or mental health of any colleague.

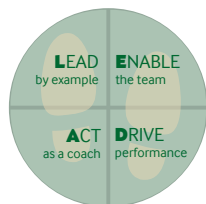
Priority actions

All sites are expected to reach the next level of maturity in the Arla Cornerstones behavioural safety programme in 2022. At our fully owned sites Danmark Protein, ARINCO and AFISA, the focus will be on demonstrating Visual Felt Leadership (VFL), which is an essential step for moving to Cornerstones level 3 and embedding a zero-loss culture. To achieve this, team leaders and supervisors will receive VFL training this year, following the training of site leadership teams in 2021. At our joint venture plant MVI, the goal is to move beyond maturity level 3.5.

Visual Felt Leadership drives the behavioural safety culture by Leading by example, Enabling the team, Acting as a coach and Driving performance (LEAD).

Our joint venture plant ArNoCo is implementing the TIGER behavioural safety programme of our joint venture partner, DMK.

Visual Felt Leadership



Cornerstones behavioural safety programme - maturity index



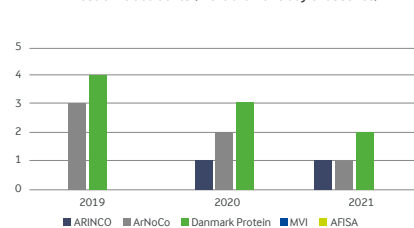
Progress

Workplace accidents

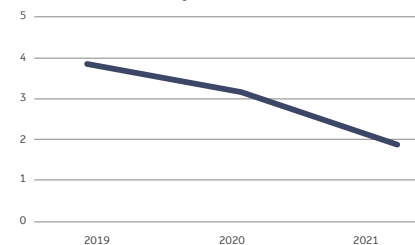
The steady decline in our accident frequency rate is largely the result of our behavioural safety programme Cornerstones, which we have gradually implemented at our sites since 2017.

In 2017, our accident frequency (number of lost-time accidents per million working hours) was above 10. Having achieved our ambition to reduce it to 3 or 4, in 2021 we set a new accident frequency goal of 2. This has been achieved. Across our sites, we recorded 4 lost-time accidents through the year – equivalent to an accident frequency of 1.8.

Lost-time accidents (more than one day of absence)



Accident frequency (number of accidents per million working hours across all sites)



Near miss/accident ratio

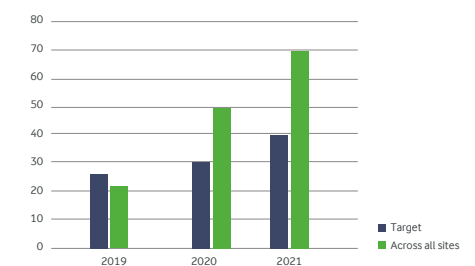
Our near miss/accident ratio (number of near miss and risk observations per accident) is a leading indicator of our proactive approach to improving safety in the workplace.

The purpose of the indicator, introduced in 2019, is to increase our focus on observing and removing unsafe conditions, actions and behaviours and, ultimately, to reduce the number of workplace accidents overall.

In 2021, our near miss/accident ratio was 69:1 – well above our target of 40:1. We have set the same target for 2022.

Note: previously reported numbers for 2019 and 2020 only covered near miss observations. They have been recalculated for this report and now also include risk observation figures.

Near miss/accidents ratio all sites



Impact

On society

There are many risks to health and safety in a company like ours that operates large processing plants and relies on transportation of raw materials and finished products. Our licence to operate is dependent on our ability to minimise those risks and provide healthy and safe working conditions.

On Arla Foods Ingredients

Every health and safety incident in or around our sites threatens our ability to attract competent colleagues and represents a business risk in terms of lost efficiency and profitability and reputational damage.

On Sustainable Development Goals



DECENT WORK

Ambition

We want to nurture an inclusive, engaging culture with a workforce that represents diversity of thought and to provide equal opportunities for personal and professional growth. In this way, we aim to gather our global organisation around our shared mission and 'ONE Arla Foods Ingredients' mindset.

Priority actions

Our focus in 2022 is to maintain the positive results from our 2021 Barometer engagement survey and become stronger in areas in need of improvement. Efforts will continue to ensure the safety and wellbeing of colleagues in all countries through the COVID-19 pandemic.

In 2021, we established an inclusion board to support initiatives that nurture an inclusive culture. The board will continue to set objectives and develop initiatives through 2022 and beyond to make inclusion an integrated part of our global organisation.

Progress

Our annual engagement survey shows a high level of satisfaction and engagement across Arla Foods Ingredients. In relation to most key targets, the scores are above or top of range, providing a strong foundation for our FUTURE26 strategy.

Unacceptable behaviour remains a focus area, and we are pleased to see a decline from 5% to 4%. In 2021, we introduced a series of communication initiatives that emphasise desired behaviour in the workplace and promoted our support process for colleagues who experience unacceptable behaviour. These initiatives were well received. Responses to the survey indicate a strong sense of belonging and empowerment and a clear understanding of and alignment with our strategy and purpose. Satisfaction with the leadership skills of managers has also improved.

The response rate to our 2021 survey was 95%, which is 3% higher than in 2020.

Category	AFI target range	2021	2020	2019	Development	Status
Employee engagement	85-90%	90%	91%	89%	-1	In range
Strategic alignment	80-85%	91%	92%	92%	-1	Above range
Agility	75-80%	71%	71%	66%	0	Below range
Overall leadership	70-75%	82%	81%	80%	+1	Above range
My manager	75-80%	81%	78%	76%	+3	Above range
Unacceptable behaviour	0%	4%	5%	6%	-1	Not in range yet

Impact

On society

Through proactive efforts, we want to nurture an inclusive culture with equal opportunities for all, contributing to sustainable and prosperous societies and a good quality of life for people in the markets where we operate.

On Arla Foods Ingredients

People are our most important resource. We strive to provide a positive working environment where colleagues thrive and grow, strengthening our ability to attract and retain colleagues and keep our business on the right track for the future.

On Sustainable Development Goals



ENERGY AND CLIMATE

Ambition

Our climate ambition is aligned with the ambition of our parent company to reduce scope 1 and 2 carbon emissions by 63% by 2030, with 2015 as baseline. The Science Based Targets Initiative (SBTi) has approved this level of reduction as a relevant contribution to the Paris Agreement target to limit global warming to 1.5°C.

The shift from fossil to renewable energy sources is a central element in achieving this ambition, along with initiatives to improve the efficiency of our production. Our greatest challenges in this respect are the increasingly advanced nature of our ingredient portfolio and business growth. This requires us to map and optimise our use of resources at each processing step.

Priority actions

Our energy and water workstreams are driving activities to reduce our overall footprint. Current initiatives are focused on reducing scope 1 and 2 emissions. We will start work on a supplier engagement strategy for scope 3 emissions in the year ahead.

At our production sites, the following major projects are underway or planned for 2022:

- **Danmark Protein**

Implementation of the 2030 utility master plan will begin, supporting the transition to green technology and business growth. This includes:

- Investment in a 90°C heat distribution system to utilise exhaust heat from the biogas motors. The system will be prepared for future connection to heat pumps. CO₂ emissions reduction target: 2,400 tonnes/year
- Upgrade of untreated product condensate system to increase volume of water available for reuse. Well water savings target: 36,500 m³/year

- **ARINCO**

A total plant assessment will be conducted with a particular focus on identifying new possibilities to improve water efficiency.

- **AFISA**

Following the installation of facilities for recycling wastewater as technical water in 2021, the goal is to double the currently available volume to 200m³/day.

- **MVI**

A new CIP system and water polish upgrade will be installed to recover 200m³ of water a day for use within the production system. The investment will reduce groundwater use by almost 50%.

Progress

Carbon emissions

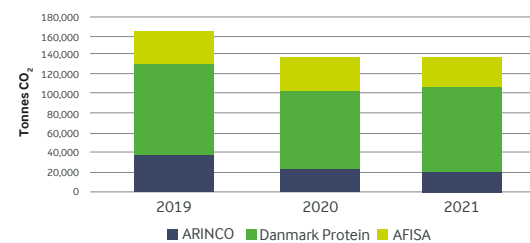
Our carbon emissions calculation covers the direct emissions (scope 1) and indirect emissions from purchased energy (scope 2) of our three fully-owned sites, which are those included in our climate ambition. The fully-owned sites are Danmark Protein, ARINCO and AFISA.

In 2021, scope 1 and 2 emissions fell by 0.7% overall.

At AFISA, a new natural gas line was commissioned with some delay due to COVID-19. As a result, the plant's scope 1 and 2 emissions fell by 13% in 2021 compared to 2020. The natural gas line reduces the plant's dependence on fuel oil.

In Denmark, scope 1 and 2 emissions increased by 4%. This was the result of higher natural gas consumption due to the reduced availability of biogas compared to 2020. Green natural gas certificates were obtained to compensate in part for the lack of biogas. The certificates originate from the significant volumes of biogas in the Danish gas pipelines.

Annual scope 1 and 2 emissions from fully owned sites

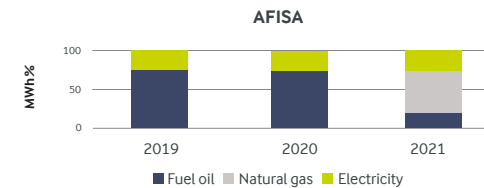
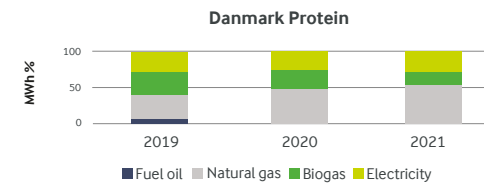
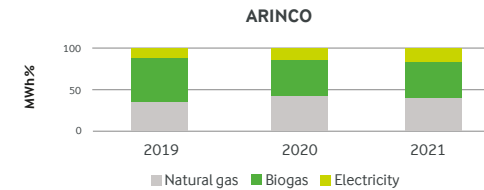


Energy mix

The energy mix at our fully-owned sites impacts our CO₂ performance and ability to meet the climate goals.

In Denmark, natural gas consumption increased by 7% in 2021, partly due to the reduced availability of biogas. Electricity continues to account for about 25% of consumed energy.

In Argentina, AFISA replaced much of its fuel oil consumption with natural gas following the completion of a new gas pipeline.



ENERGY AND CLIMATE (CONTINUED)

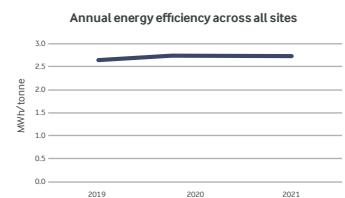
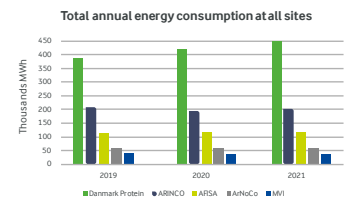
Progress (continued)

Energy efficiency

The energy consumption of our fully-owned and joint venture production plants varies each year according to product mix and volumes. In 2021, total energy consumption and powder production both increased by 3%. However, despite changes in the product mix, energy consumption per tonne of product remained the same as in 2020.

Despite delays with several large projects due to lack of engineering resources, energy efficiency improvements in 2021 resulted in total energy savings of 4.77 GWh/year – equivalent to the average consumption of 257 households reliant on natural gas.

* The energy efficiency figures for 2019 and 2020 have been adjusted since last year's supplement as they no longer include our former joint venture Biolac.



Water efficiency

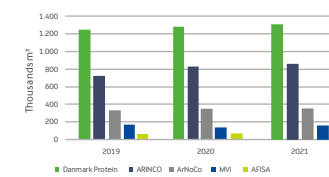
Total annual water consumption at our fully-owned and joint venture plants refers to water drawn from municipal water supplies and well water. In 2021, our water consumption increased by 4%. There are two primary explanations. Firstly, this year's consumption figures for Danmark Protein now include filter water from the plant's own waterwork plus the water consumption of our new innovation centre, which was inaugurated in October. Secondly, extra cleaning was necessary at ARINCO due to microbiological challenges.

Water reuse remains an important focus area, including the reuse of water extracted from whey and milk and the optimisation of cleaning processes. In Denmark, a new technical water facility is now in operation to recycle wastewater. By the end of the year, the facility was supplying Danmark Protein with 500m³ of technical water a day for non-food contact purposes. Total annual water savings from efficiency projects at Danmark Protein in 2021 were 366,825m³ – equivalent to the average consumption of 2,620 households.

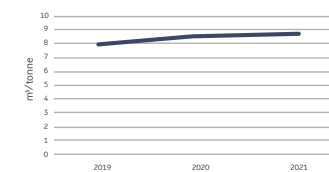
AFISA has also invested in facilities for cleaning and reusing wastewater as technical water. The current capacity is 100m³ a day.

* The water efficiency figures for 2019 and 2020 have been adjusted since last year's supplement as they no longer include our former joint venture Biolac.

Total annual water consumption at all sites



Annual water efficiency across all sites



Impact

On society

We recognise our responsibility to make the most of our whey-based raw materials, minimise waste and to limit our impact on our surroundings. Through our consumption of energy, water and other materials, we risk contributing to climate change and to depleting non-renewable resources.

On Arla Foods Ingredients

Environmental changes that impact the cost and supply of raw materials, energy and clean water to our sites constitute a substantial business risk. Any failure on our side to address our potential impact on the environment and climate also represents a threat to our reputation.

On Sustainable Development Goals



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Arla Foods Ingredients is a global leader in value-added whey solutions. We discover and deliver premium ingredients derived from whey, supporting the food industry with the development and efficient processing of natural, functional and nutritious foods.

Using our specialist knowledge of food products and production, we serve global manufacturers of early life nutrition, medical nutrition, sports nutrition, health foods and other food and beverage products.

Arla Foods Ingredients is a 100% owned subsidiary of the dairy company Arla Foods.

ABOUT THIS CORPORATE RESPONSIBILITY SUPPLEMENT

This supplement to the annual Arla Foods corporate responsibility report provides insights into relevant corporate responsibility matters specific to Arla Foods Ingredients.

Arla Foods Ingredients
Discovering the wonders of whey 