



nutreco

Our Story

“Feeding the Future”

To feed the global population in 2050, we need to revolutionise protein production today

Imagine a baby born today. Digital native, world citizen, thoroughly modern human – though genetically the same *Homo sapiens* as walked the planet 300,000 years ago.

Like all the other eight billion humans on the earth today, she is an omnivore – which means as she enters her toddler and childhood stages, she will be able to choose from a wide and varied diet. Protein is an important part of it, on a daily basis. It is a crucial component of every cell in her body and essential for growth and maintaining the energy she needs to live.

At Nutreco, our business is built around supporting the people who produce this healthy protein for her.

In developed economies, this child’s options for protein will continue to be more numerous than ever before as she grows towards adulthood. They include not only animal and fish products – the most balanced source of protein – but also vegetable sources like nuts, soy or pulses that can be processed to mimic some features of meat, milk, eggs or fish, and even new alternatives like meat or seafood grown from animal cells.

By the time this child is 30, our planet will have a population of around 10 billion people. Like her, they will all need high-quality protein to live and thrive. To feed them, the food industry will need to produce 60% more food than we do today.



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However, the world this child is being born into is changing rapidly, and her access to nutritious, affordable protein is threatened. In emerging countries, the middle class is growing fast and, with it, demand for meat and seafood is surging.

Our current agriculture industry is struggling to adapt and faces a number of dilemmas. Consumers are becoming increasingly well-informed about what they eat and how their food is being produced. Concerns about animal welfare, deforestation, and the health impacts of GMO products, for example, play an increasing role in food purchase decisions. Anti-microbial resistance (AMR) is leading to serious challenges. The use of antibiotics to promote animal growth creates a resistance to their effects, in humans and animals alike; by 2050, AMR could be the number one killer of humans, more deadly than cancer is today.



The way we farm animals and fish continues to threaten biodiversity and damage our ecosystems while also contributing to global warming. To feed today's population, we are already consuming the equivalent of almost 1.8 planet Earths of natural resources each year – and wasting one-third of the food we produce. However, the world this child is being born into is changing rapidly, and her access to nutritious, affordable protein is threatened. In emerging countries, the middle class is growing fast

and, with it, demand for meat and seafood is surging.

To add to the challenge, less and less arable land is available to produce the food this growing population needs, and fewer people are choosing to become farmers. Those that do often operate on thin economic margins. In developed countries, households spend less on food than ever, as a percentage of disposable income, and food prices do not cover the true costs of sustainable production. Our industry has yet to solve the challenge of how to share these costs across the food chain, which spans from raw material suppliers and feed producers to farmers and food manufacturers to retailers and food service operators and finally to consumers. At the same time, people in developing countries can hardly afford their daily meals and many farmers exist on the edge of survival, only able to grow enough to feed their families.

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If we don't revolutionise how we produce the essential proteins we need, how we manage our food waste, how we balance food costs as a portion of income and how we use technology to create alternative proteins, we will face a global humanitarian food crisis. By her 30s, this child born today could end up living on a depleted planet without the nutrition she needs to survive.

To ensure this doesn't happen, we need to enable farmers to more than double production while at the same time reducing their environmental impact by 75% and increasing the positive social impact of the food chain. This is a momentous challenge for our industry and our world, and will require ground-breaking strategies. The road to Feeding the Future is full of dilemmas and trade-offs. At Nutreco, we believe we are better positioned than many to play an important role in solving this challenge and offer solutions to help ensure everyone on the planet has a better future.

We are not advocating any particular lifestyle or diet. We are not moving away from our existing business of supplying the highest quality nutritional solutions to our customers in animal agriculture and aquaculture. But with our expertise, passion and innovative solutions, we believe we can help our industry make a revolutionary change for the better.

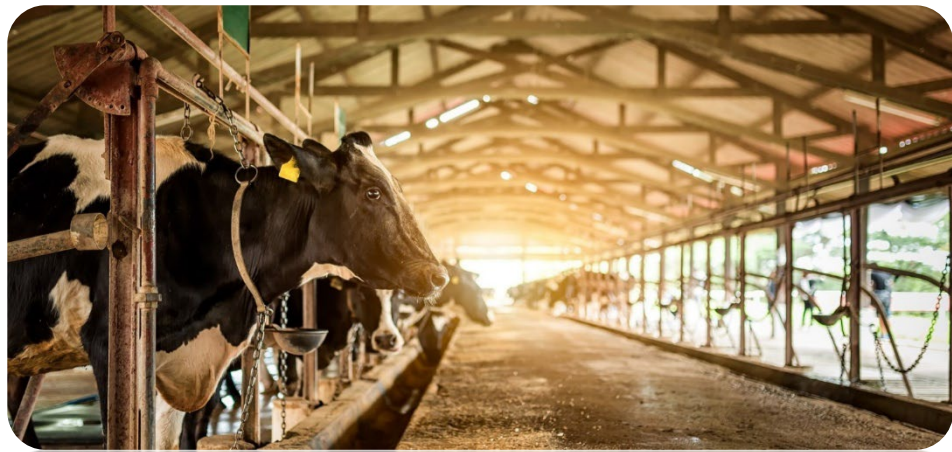


The solution is transformational – but possible.

At Nutreco, we believe that there is a solution that will ensure today’s child and the other 10 billion or so people on the planet in 2050 get the healthy and nutritious protein they need to thrive.

It’s one that will provide fair and equal opportunities for farmers, while, at the same time, protecting and restoring our planet’s natural resources. It will be driven by transparency and traceability as consumers reconnect with food – demanding to know what is in it and making different choices about what they eat, based on environmental, ethical, health or lifestyle concerns. And through it, corporations such as Nutreco will need to be accountable and candid about the challenges they face in achieving these goals.

In our view, how we produce protein in the future will be characterised by dramatically better planning and management of our natural resources – such as land, water and biodiversity – to ensure that we



are able to produce more food using fewer resources. It will be based on “life-cycle assessments” that identify the carbon footprint across all stages of a food product’s lifespan so we can work to reduce it. This will release millions of hectares of land, either to be restored to their natural state or to other highly productive, sustainable agriculture, allowing farming communities to thrive and helping bring the price of food more in balance with the true cost of its production.

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To achieve this solution will require the widespread deployment of precision farming approaches – like the ones that Nutreco offers to our customers every day – that use new technologies to increase crop yields and profitability while reducing the inputs, such as land and water, needed to grow food. It will call for a focus on regenerative agriculture, using farming and grazing practices that rebuild soil and organic matter and restore degraded soil biodiversity. We will need to prioritise business models that result in much more circular nutrient management, which aims to retain as much of the biomass and nutrients produced through agriculture within the food system. And we will need to prioritise the environmental footprint, particularly greenhouse gases, associated with feed ingredients as another and equally important criteria alongside nutrient profiles.

Enabling animals to grow to their full genetic potential will be important in making sure we can produce the protein we need to feed the growing population. Today this is not always the case, but as we work to close this gap, we need to move away from farming techniques simply focused on increasing efficiency at the lowest possible cost, and towards farming practices that are more sustainable and address the dilemmas that face us today, such as deforestation and AMR. The result will be better for the planet and for the welfare of animals, and even enhance human health.

If we make the right choices now, by 2050, we could see a food chain that is much more consumer-driven and diversified, that is focused on protecting our natural resources and able to produce more food with less input, and that contributes to a circular economy. A better balance of local and global production will make this food chain even more robust and resilient.

At Nutreco, we have a history of addressing these kinds of challenges and we believe this vision of the future is attainable – if we act today.

Nutreco is well positioned to play a pivotal role

Nutreco is well positioned to be a leader in this transformation.

We’ve had the children born today on our minds – and at the forefront of our strategy – for over a decade. We’ve been thinking about and working towards Feeding the Future since 2009, through our dual focus on animal and aqua nutrition.

With over a century of experience in animal nutrition and understanding different types of farming environments and species, Nutreco has helped shape the sustainable solutions for feeding animals that exist today within our industry. Better nutrition for fish, shrimp and land animals will be an essential part of the fundamental changes we need to make to achieve our purpose. Precision nutrition, customised to an animal’s specific requirements, helps farmers produce more, strengthens animals’ health and resilience, reduces the need to use external additions such as antibiotics, contributes to better human health by reducing the harmful germs transferred from animals to people, and even lowers a farm’s carbon footprint.



We’re already working towards this goal through products such as Infinity, Skretting’s revolutionary salmon feed that is free of marine products – therefore avoiding the use of some ingredients (in this case from fish) that could be used to feed humans directly – and Trouw Nutrition’s Antibiotic Reduction Program that makes the switch to responsible use of antibiotics easy and manageable for swine and poultry producers through a step-by-step approach. We provide the expertise, products, services, and

models to help producers focus their resources on the areas that matter most across the feed, farm, and health aspects of their operations.

Precision nutrition goes hand-in-hand with the importance of putting the needs of partners across the food chain at the centre of everything we do. In particular, Nutreco

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has deep expertise in what works for farmers, large and small. You can see this in our development of Skretting 360+, our complete package of innovative tools to help fish and shrimp farmers better forecast animal growth and feeding and keep improving their farming practices. Another example is Trouw Nutrition’s NutriOpt precision feeding system, that uses animal models to help farmers fine tune their feeding strategy with high accuracy, delivering both optimised nutrition and improved profitability. Trouw Nutrition’s NutriOpt model for swine has become the industry standard.



In addition, science-based innovation sits at the heart of Nutreco’s business and culture. We live in a world that is changing at the speed of light – a child born today will experience technological advances beyond our wildest dreams.

At Nutreco, we’ve had the foresight to be ready – we have always invested significantly in research and development. In 2018, we created a new team,

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NuFrontiers, focused on supporting our purpose by investing in breakthrough innovation that opens our company up to completely new markets and businesses and helps us shift into a more sustainable direction. In 2022, we created another new team, Nutreco Exploration (NutEx), to help us look for novel solutions to the urgent needs of farmers and create technologies that could help resolve the AMR issue. NutEx explores phylogenetics, biotechnologies and physical chemistry to develop novel, proprietary ingredients that raise the bar on how we can tailor our solutions today to meet farmers’ needs. The team is already starting to deliver ground-breaking products.

We have a longstanding commitment to sustainability. In 2020, we adopted a new sustainability strategy for the next five years, called RoadMap 2025, that includes bold, firm and measurable targets addressing the reduction of CO₂ emissions (in alignment with the 2015 Paris Agreement guidelines), sustainable packaging, AMR, the reduction of waste generated by our operations and the decoupling of deforestation from our supply chain.

Another dilemma our industry faces in Feeding the Future is finding the right balance between the interests of shareholders and other stakeholders: between profit and the good of society. Nutreco benefits by being a privately-owned company backed by a family of investors who are committed to achieving this balance and investing for the long term.

Most importantly of all, at Nutreco, our people have an absolute passion for Feeding the Future. We employ talented professionals who love what they do and have the expertise, the science and technology, the market knowledge and the drive to help us provide for the future of today’s children, despite the formidable odds we face. And our people collaborate closely with partners across the value chain who share our vision, because we know we can’t do it alone.



Three strategic focus areas set us in this direction

This challenge isn't just one for future generations; it demands the attention of today's generation. That's why Nutreco's purpose of Feeding the Future is so essential.



We will achieve it through our strategic vision: to be recognised as a leading partner in functional and nutritional solutions for sustainable farming. We have developed a series of targets to help us get there – based around planet, people, and growth – and a strategy that outlines the actions we'll take. We will become more cost competitive, for example, by driving continuous productivity improvements and building a world-class supply chain. We will invest in our business, particularly in areas where we see growth opportunities and where our capabilities can make a difference, like feed additives, proprietary ingredients and young animal feed. And we will strive to become or remain the number one or two in all our markets at scale. Achieving our purpose will require us to make significant changes in how we operate, and work together much more closely across our company to use our collective knowledge and expertise to the best advantage for everyone.

We have identified three areas that Nutreco will focus on to lead these changes. We believe each of these areas offers clear business opportunities over the next decade and beyond – while also providing substantial benefits to our customers, employees and other stakeholders. All three are focused on creating a sustainable system of animal, fish and shrimp farming that helps us solve the challenges of the future:

1. Supporting sustainable production enabled by technology

Farmers remain critical to the food sector’s ability to feed the world, but they are under enormous pressures. They need to achieve strong animal performance to be profitable while also reducing antibiotic use without failing to curb diseases, improving animal welfare standards and reducing their environmental footprints. We can support them in facing these challenges.

We want to be the partner of choice that farmers trust to provide animal nutrition solutions based on science that help them operate more efficiently and sustainably – regardless of whether they are smallholders farming shrimp in Asia or North American vertically-integrated meat corporations.

We are doing this by becoming a farm-focused solutions provider, using the latest technology to facilitate our solutions and take the guesswork out of sustainable farming for our customers.

2. Zeroing in on nutrition, health and farming

With nutrition core to our business, our aim in the short term is to build services in animal health and farming methods to help customers raise healthy animals. We are zooming in geographically on where population growth is happening, and quality protein is most urgently needed.

Nutrition, health and farming are the three elements we need to optimise to ensure farmed animals reach their full potential and we use the planet’s resources wisely. By focusing on this “magic triangle,” we will be able to provide our customers with precision nutrition, best-in-class farming and preventive animal health solutions that help them produce more in a more sustainable way, while also addressing welfare concerns.

Our feed additives and young animal solutions, along with our work on alternative ingredients, are prerequisites in helping us support farmers in achieving strong healthy animals and animal performance. Our focus on the “magic triangle” will enable us to move beyond nutrition in the mid-to-long term.

3. Sourcing and developing future protein ingredients

The way we source certain feed ingredients today puts too much strain on the planet’s resources to be sustainable in years to come. Feed ingredient production accounts for 45% of greenhouse gas emissions from the livestock industry. Instead of tapping precious resources such as wild fish, or farming feed crops to the detriment of natural ecosystems, we can continue to find ways to produce feed ingredients more sustainably. And we can use co-products of the food industry that would otherwise be wasted, as well as novel ingredients such as insect protein, in feed formulation optimised to meet the needs of animals. Nutreco is working to drive this forward in our industry.

We’re also working to develop completely novel, sustainable ingredients. For example, our NutEx team is already creating new phyto-active ingredients for feed additives and is also developing microtechnology programs that mine the function of the microbiome for ‘biome-active’ application in aquatic species and livestock. (A biome-active is a gut bacterial function which, when added to the feed, displays a beneficial effect on animal performance, health, welfare.)

While we remain fully committed to supporting animal farmers, we know that our industry will have to maximise all sources of protein to feed the growing global population and make our food production chain more resilient. So, we see alternative proteins as another emerging solution in addition to traditional animal farming.



In particular, we believe producing meat or seafood from animal cells holds great potential to address the global challenge of feeding the population sustainably, alongside and not instead of animal farming. We are partnering with companies that

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are working on alternative proteins that enable people to eat meat produced in this novel way and have taken the first steps to grow our presence in this area through strategic investments.

All of this together will ultimately enable our industry to feed the world.

Our diverse teams make it possible

We believe that the best way to drive forward our purpose is through diverse and inclusive teams, that reflect our customers and stakeholders. This diversity helps us to understand and serve our customers and communities better and strengthens our ability to innovate, create and problem-solve. It will remain a major focus for our business in years to come.



Our call to action

Feeding the Future is more than a purpose – it’s a call to action, to everyone in our company and our field of business to be open to and embrace the challenge that will dramatically alter our industry and ensure that today’s child – and her children and grandchildren – can continue to grow and thrive.

None of us in the food and feed industry works in a vacuum – what we do each day has a ripple effect on countless people across the globe. At Nutreco, we feel a great sense of responsibility for the impact our business has on people’s lives – not just the child born today, who we need to provide for in years to come, but the employees, customers and suppliers who depend on us right now. On the most fundamental level, this means that we work to provide our own employees with a safe and healthy place to work and use our influence within the protein supply chain to ensure that people’s basic human rights are protected. Our Community Development Projects take our commitment to caring for people to the next level, by empowering small farmers in the communities where we operate to improve their economic situations.

Now we want to partner in an even more profound way.

While we have a relentless commitment to our purpose, the challenge we face in Feeding the Future is much too big for one company to tackle alone.

We’re calling on governments, NGOs, trade bodies, competitors and other players across the food chain to join us in helping make sure the child born today has the healthy and nutritious protein she needs to grow, thrive and pass on a healthy life and planet to the generations that follow her. We’re calling on talented people, who are passionate about what we do, to join our company, inspire us with their skills and perspectives and help us succeed. We can make it happen, but only by working together, across our company, across our industry and across the globe.

We believe pre-competitive platforms, that bring together peers and even competitors across the food chain to work together on issues that affect us all, have particularly exciting potential to help us solve the complex environmental and social challenges

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we’re facing. Platforms such as the Seafood Business for Ocean Stewardship (SeaBOS), the Global Salmon Initiative (GSI), the Collaborative Soy Initiative (CSI) and the Cerrado Fund Coalition have enabled us to pool technical expertise and resources for the greater good of society and the industry. Their potential will grow exponentially if the food service and food retail sectors join and help us achieve mainstream acceptance of the solutions we’re proposing – with their cooperation, we could really move the needle together.

Our message is clear: to succeed in Feeding the Future in a sustainable way, we will need to produce protein from more, and more varied, sources – animal as well as alternatives, using fewer natural resources. And we will need a fundamental shift in how we think about the consumption, production and waste of food, at an individual, community, national and global level. Nutreco is here to support the protein producers of the world in our shared ambition of ensuring future populations have plenty of nutritious food to eat.

