Novus International, Inc., is a leader in science-driven animal health and nutrition solutions for agriculture customers throughout the world. More than 700 employees are serving customers in over 90 countries to fulfill the vision and mission created upon the company’s founding in 1991.

OUR VISION
To help feed the world affordable, wholesome food and achieve a higher quality of life.

OUR MISSION
To make a clear difference in sustainably meeting the growing global need for nutrition and health.
These values help bring our Vision and Mission to life by guiding our business strategies, plans and objectives, and shaping our work culture and interactions with all stakeholders.

1. We seek excellence from every employee. We encourage, expect and support alignment, diversity, individual growth, initiative and teamwork.

2. We strive to provide products with demonstrable value. Our research focuses on leading-edge concepts, and we are committed to supplying preferred products and services.

3. It is critical that we maximize long-term customer satisfaction. Whether related to products, services or innovation, we must always anticipate our customers’ needs and exceed their expectations.

4. We protect our employees, the public and the environment. Specifically, we make health, safety and environmental considerations a priority in everything we do.

5. We act with integrity. We treat all of our stakeholders – including employees, customers, suppliers, business partners, owners and the public – in a fair and ethical manner.
More than 700 employees serving customers in over 90 countries.

WE ARE HELPING THE INDUSTRY TO FEED THE WORLD.
At Novus, our drive for sustainability is how we create impact.
Novus was founded in 1991 with our flagship product, ALIMET® feed supplement, a liquid methionine source. From that foundation, we’ve built a portfolio of specialty products including organic trace minerals, protease and phytase enzymes, organic acids, antibiotic alternatives, pigments and feed quality additives. This diverse lineup allows us to work with customers to identify what will best fit their feeding program, their economic capability, their level of antibiotic use and their regulatory requirements. Our product line – and our company – is science-driven and customer-centric.

For nearly 30 years Novus International, Inc., has proven itself a leader in the feed additive industry. For a company to be successful, it must overcome many hurdles: creation and competition, product development and acceptance, customer desires, and society’s perceptions. But there’s something more that truly successful companies strive to do above and beyond moving their bottom line. They aim to be impactful.

At Novus, our drive for sustainability is how we create impact. It’s in the way our supply chain finds a more efficient way to deliver products, saving on fuel. How our human resources department develops software for onboarding and continued education, saving valuable time and increasing productivity. How our offices around the world partner with organizations in their communities to deliver human health initiatives. In doing more than only developing and selling world class products, Novus is more than just a company; we are a voice for impactful sustainability. After all, it’s part of our mission: To make a clear difference in sustainably meeting the growing global need for nutrition and health.

Our employees are at the heart of our effort to spread sustainability to our customers and our communities. It is through their ideas, experiences, knowledge and expertise that we have initiated and grown the programs or processes in this report. These examples will open doors to new ideas and initiatives, continuing the path to a more sustainably-minded workplace and community.

Sincerely,
Francois Fraudeau
President and Chief Executive Officer
What is Sustainability?

There is a certain connotation that accompanies the word “sustainability”. One that invokes thoughts of finding equilibrium, of being mindful, living holistically.

Sustainability is intentional. It is measured. Sustainability is impactful.

And it is one aspect of Novus’s foundation: Solutions, Service, Sustainability.

Solutions are what we do. We develop nutrition solutions that optimize the health and development of agriculture animals and provide producers with flexibility in how they manage their operations.

Service is what we are. We create lasting, proactive partnerships with our customers to help them meet production, environmental and regulatory challenges with deep knowledge and science-driven solutions.

Sustainability is our aspiration and our future. It’s a goal that ensures we continually evolve business practices to meet the needs of a growing population faced with finite resources. It makes sense for an agriculture company to aim for sustainability where the environment is concerned but we seek to do more. We are helping create sustainability within our communities, within our offices, and within our employees’ lives. This book is a sample of Novus’s global sustainability efforts in 2018.
Sustainability Compass

The five segments of the Sustainability Priorities Compass were outlined by our stakeholders as top priorities for Novus International. The compass reminds us that we must consider sustainability in all aspects of our organization. This is how we choose to operate as we develop new ways to help our customers provide animal protein for a growing population in a manner that is safe, accessible, and economical as well as socially and environmentally responsible.

Sustainability Pillars

Look for these icons throughout this book; they highlight the ways that we integrate sustainability into our work each day. The products we sell, the way in which we conduct business with stakeholders and our stewardship of earth's natural resources are all interconnected, integrated and equally important to Novus.
Always mindful of our *Triple S Bottomline*: Solutions, Service, Sustainability; our products are designed and shown to deliver an economic advantage to feed and animal protein producers through a variety of methods, depending on the product platform.

- Maximize the value of raw feedstuffs
- Bolster animal health, performance and productivity
- Support reproductive health and fetal viability
- Reduce the need for pharmaceutical intervention, lowering the risk of antibiotic-resistant bacteria
- Improve the quality and marketability of the final animal protein product
- Ultimately reduce animal production’s environmental impact

**Novus Products**
To meet the growing demand, it is critical that the industry improve the conversion of proteins in animal feed to meat. Amino acids play an important role in improving this efficiency in the animal. HMTBa [2-hydroxy-4-(methylthio) butanoic acid] is a liquid source of methionine, the first limiting amino acid in poultry and ruminant diets. Methionine aids in protein synthesis to ensure efficient growth, feed conversion, and meat and egg quality. HMTBa is a highly available source of methionine and has been shown to strengthen bones, optimize animal mobility and overall welfare particularly during stress periods.

**Sustainability Stat:** *ALIMET® is a nitrogen-free product meaning nitrogen is not added to the diet, resulting in less excreted in the environment.*

Compared to traditional inorganic trace minerals like zinc oxide, copper sulfate and manganese sulfate, Novus’s organic trace minerals (OTMs) are more efficiently absorbed resulting in less unused minerals excreted. OTMs impact meat and egg quality, feed conversion and growth rates as well as offspring development.

**Sustainability Stat:** See the section on Sustainable Animal Agriculture to learn how MINTREX® chelated trace minerals can REDUCE AND REPLACE™ traditionally used minerals.
Realizing the maximum benefit from every feed ingredient is vital to ensure profitably and minimize wasting valuable nutrients. CIBENZA® products help reduce the cost of feed by optimizing the digestion of nutrients, which also allows the use of lesser quality raw materials.

CIBENZA® EP150 contains a *Bacillus licheniformis* spore component, meaning in addition to providing a protease enzyme, this product includes an added value for customers in the field where pathogenic- and stress-related challenges are a frequent occurrence.

*Sustainability Stat: By using CIBENZA® PHYTAVERSE® phytase enzyme producers can reduce the amount of phosphorus supplemented in feed thereby decreasing phosphorus excreted in the environment.*

Novus eubiotic products offer a range of solutions for supporting gut health, which is essential in antibiotic-free programs. The phase out of antibiotics as growth promoters in the industry has led to increased therapeutic use of antibiotics which can contribute to the emergence of antibiotic-resistant bacteria. By promoting gut health, producers are able to help animals withstand environmental challenges better.

Organic acids, essential oils and probiotics support gut health and promote a healthy immune system — crucial in antibiotic-free (ABF) programs. As ABF production grows due to regulatory mandates and public demand, actively optimizing gut health is vital to maintaining animal health and productivity.

*Sustainability Stat: A blend of organic acids including HMTBa, ACTIVATE® nutritional feed acid is shown to positively influence the pH of the gastrointestinal tract and provide viral mitigation in raw feed, a cost-saving two-for-one benefit for producers.*
Just as with human diets, animals are what they eat. Novus feed quality products are technological additives that favorably affect the characteristics of feed, allowing producers to get the most from feed ingredients by inhibiting bacteria, mold, toxins and oxidation that can result in rancidity of fats and destruction of vitamins, reducing available nutrients and causing potential health problems for the animals. These products also help to prevent nutrient degradation and spoilage in feed, which can affect meat quality and marketability.

**Sustainability Stat:** SANTOQUIN® feed preservative protects finished feed from oxidation, prolonging shelf life and allowing producers to waste less feed.
Focusing our Organization

In 2018, Novus implemented a new organizational structure designed with its customers in mind. Livestock producers in each region of the world have different challenges and needs. To best connect with customers, Novus representatives needed to understand those local issues, and what better way to do that than be where those customers work and live. This new structure was created to improve the breadth and depth of the relationship between our customers and the local sales, technical and marketing functions around the world.

Previously, Novus was organized into five world areas. Today, eight world areas have been defined, each with its own director to lead the sales, marketing and technical services teams. In addition, three regional chief commercial officers were appointed to lead the strategic initiatives and supply chain teams in each of the regions – the Americas, Europe/Middle East/Africa, and Asia.

The impetus for this change came from wanting to replicate regional customer success throughout the entire company. In some regions, the sales, marketing and technical services teams were very successful in anticipating customer needs, working with customers to find solutions to challenges and reacting proactively to external difficulties (unfavorable weather conditions, disease, poor quality feed, etc.). Novus saw an opportunity to bring this customer-centric business model to all customers.

How could Novus assist its sales, marketing and technical teams to develop a better understanding of the customer and, in turn, help the customer better run their business? The answer was to give each world area a champion – a world area director-whose entire job was to support the commercial efforts in that region. Novus added significant sales, marketing, and technical service roles in the field as well. In total, 42 roles were created.

These changes have already made an impact on customer service as these teams have developed a better understanding of their customers’ behaviors and needs and have been able to address those needs in a more timely manner. A better relationship with customers helps Novus address unmet needs and fulfill requests efficiently, which helps the company save on operational costs through forward thinking.
Four of eight world area directors were promoted from within the company

Infrastructure changes: LATAM North and South offices moved to new locations, South Central Asia is moving to a new building
Unlocking Phosphorus and Saving Soil

Phosphorus is invaluable in developing and maintaining bones and structural strength. While available through feedstuffs, most naturally-occurring phosphorus is locked in phytate. CIBENZA® PHYTAVERSE® phytase enzyme works almost instantly upon digestion to liberate phosphorus from phytate making the phosphorus accessible to the animal.

Even with a phytase enzyme, producers often add phosphorus-rich calcium phosphates such as monocalcium phosphate (MCP) and dicalcium phosphate (DCP) to feed in an effort to increase phosphorus intake. Not only does this practice affect the environment through the act of mining, animals don’t fully digest all of the calcium phosphates they ingest resulting in phosphorus excreted, and ultimately absorbed in soil.

Researchers at Novus are convincing customers that, in the case of CIBENZA® PHYTAVERSE®, less is more. A standard application of 500 u/kg of PHYTAVERSE® can replace 8.1 kg of DCP per metric ton. Since their animals are getting more phosphorous directly from feed ingredients like corn, soybean meal, or sorghum, producers who use CIBENZA® PHYTAVERSE® include less MCP and DCP in diets. This can account for a savings of over $5.00 USD per metric ton of feed (savings vary based on feed ingredient prices). Including CIBENZA® PHYTAVERSE® in swine and poultry diets is both a cost savings and an environmental win.

Quantifying the Economic Benefit of Minerals

For more than 10 years MINTREX® organic trace minerals have been utilized by livestock and poultry producers to optimize production and support overall performance and health of animals. As new competitors have entered the market and the industry has faced tighter margins, there came pressure to show the potential return on MINTREX® up-front to those interested due to the higher initial investment of the product.
In an effort to align on the quantified value of MINTREX® in hard numbers based on the data that was unique to their region, Global Headquarters developed a universal tool for all regions to use to show the economic return livestock and poultry producers can experience using MINTREX® organic trace minerals. In 2018 the web-based VERIFY™ Profit Tool for MINTREX® was launched for dairy cattle and breeder hens. Using this tool, Novus teams across the world have put a tangible dollar value on the benefits producers realize when they include MINTREX® in feed.

As the success of the VERIFY™ Profit Tool grows, the team at Headquarters is in the process of developing a similar tool for sows and is evaluating the need for a tool for broilers. There is also interest in expanding the tool’s reporting capabilities so as to capture tool usage and see which product benefits are most valued in each region.
With products to ship around the world by train, truck and plane, Novus is always looking for ways to make its supply chain more efficient and effective. It’s no surprise then that even the pallets – the portable platform used in the storage or maneuvering of bulk products – can’t escape scrutiny.

For Novus’s purposes, a pallet needs to hold up to one metric ton of product and withstand traveling up to 13,000 miles (21,000km) or halfway around the globe. While inexpensive, under these rigorous conditions, a traditional wood pallet may only have a lifespan of a few months.

Looking for a long-term solution, Novus began considering plastic pallets. While longer-lasting, the supply chain team wanted to be sure that this shift made sense from a sustainability perspective. That’s how Novus found CABKA_IPS, a global plastic solutions company with products available in more than 80 countries. CABKA’s plastic pallet was certainly more durable and had the added benefit of being made entirely from recycled post-consumer packaging. Even with a strenuous job to do, these recycled plastic pallets are able to maintain their structure and can stay in use for as long as 10 years; far longer than the typical lifespan of a wood pallet.

Novus and CABKA_IPS are now working together on a new, lighter weight pallet that will require less plastic to produce and reduce transportation cost (less weight = less fuel).
Made of recycled plastics from post-industrial and post-consumer packaging products

100% of broken or damaged plastic pallets can be recycled into a new pallet

Novus uses approximately 50,000 pallets a year

Able to maintain their structure and stay in use for as long as 10 years
International companies know trying to coordinate onboarding and internal continued education opportunities for a global workforce is a huge task. To better serve our team of more than 700 employees across 36 countries, Novus launched its online learning system in 2018, providing sustainable, standardized, professional development to all of our employees.

The online platform, named Spark, is filled with content catered specifically to Novus employees. The information is delivered in videos, presentations, whiteboard demonstrations and other formats, all designed to complement face-to-face learning opportunities that an employee may experience throughout their professional development. At the suggestion of a manager, or on their own, our employees choose from modules such as, “Swine Business Essentials” and “Chemistry of HMTBa” or “Presenting with Power” and “Making Meetings Matter”. Many Novus employees have specialized roles and backgrounds; Spark creates an opportunity where, for example, a Novus scientist specializing in swine can learn the basics about poultry gut health and that information may influence his/her latest research trial.

Novus’s Human Resources Department, which manages Spark, has trained platform managers in each of the company’s eight world areas to aid in content development and help users take advantage of all its features. The team also publishes a monthly e-newsletter that includes information about new features and content available on the Spark platform.

Spark has put onboarding and continued education in the hands of Novus employees and is allowing them access to learning anytime, anywhere in the world.
Employee Participation
Launched July 16, 2018
Most Popular Learning Module

99% Learning Modules

120 Launched July 16, 2018
Most Popular Learning Module

Methionine
1.3 MIL
Hours worked by employees

0.31%
Recorded incident rate

125%
Lower than average
In 2018, Novus continued the ongoing trend of operating well above average in terms of safety at our facilities around the world. Of the more than 1.3 million hours worked at Novus locations an impressive incidence rate of 0.31% was recorded. This is 125% lower than the average for comparable companies, according to the American Chemistry Council. This success is driven by Novus’s efforts to go above and beyond standard regulations in an effort to ensure the health and safety of all employees with leading policies and procedures.

Several projects were implemented in 2018 as part of the Novus Safe Operations Management process to simply prevent injuries or near misses from ever happening. This included an emphasis on training and the recording of training for employees at facilities around the world. This effort helped to instill a culture of safety in all employees and ensure there were as few recordable incidences with the goal of eliminating employee lost time incidences completely. In 2018, training was recorded and tracked through Spark, Novus’s online learning system. Nearly 4,000 hours of training (both online and in-class) were completed by employees working in our finished goods manufacturing facilities worldwide.
Inorganic sources of trace minerals are often poorly absorbed due to antagonism with other components in the diet. Consequently, only a fraction of inorganic trace minerals supplied through the diet are absorbed and retained in the body to be used by the animal. This problem causes an economic loss due to wasted minerals and creates an environmental concern if/when those minerals are excreted and find their way into soil, ground water or natural waterways. Understanding this ongoing concern, the Novus team developed the REDUCE AND REPLACE™ program for MINTREX®.

MINTREX® trace minerals: zinc, copper and manganese, have been shown to optimize trace mineral supplementation in the diet thanks to the unique chelated structure consisting of one mineral atom bound by coordinate covalent bonds to two molecules of the ligand, HMTBa [2-hydroxy-4-(methylthio) butanoic acid]. This stable and less reactive structure protects the mineral against numerous antagonisms and other
components in the digestive tract, ensuring better bioavailability than inorganic trace minerals and other trace mineral solutions.

Subsequently, through this program less mineral can be supplemented in the diet to achieve the same or better performance and ultimately play an essential role in a wide variety of physiological processes in the animal body. Beyond nutrition optimization and being more supportive of the animal’s health and performance compared to inorganic minerals, the REDUCE AND REPLACE™ program also aims to satisfy growing regulations committed to reducing excreted minerals. In fact, this program has been fundamental in expanding the use of MINTREX® trace minerals with producers in the European Union who are facing the need to comply with regulations concerning supplemental minerals in animal diets by 2022. The REDUCE AND REPLACE™ program gives producers the ability to adjust to tightened regulations and reduce environmental impact.
Continual Innovation Through Product Development

Novus has spent more than 25 years innovating and developing new products to meet the ever-changing needs of the livestock, poultry and aquaculture markets. Novus has a world-class team of researchers located at our Global Headquarters that work alongside the market experts within our Global Product Development team. The collaboration of these teams means ongoing innovation and investigation into new products and new product applications that keep Novus at the forefront of the animal nutrition industry.

In addition to teams at Headquarters, there are teams around the world working together with customers to assemble unique programs and product combinations to meet regional needs. This partnership with customers serves as inspiration for the teams at Headquarters to look for products and solutions in areas maybe not previously considered.

The progress made on new products and new application of existing products was notable in 2018. Teams worked to develop a new organic trace mineral to fit a different segment of the market, further positioning Novus as a leader in trace mineral nutrition without sacrificing the commitment to quality. Feed ingredient quality continues to be a problem around the world as weather causes crop disease challenges. Two projects specific to improving feed quality were the focus in an effort to develop more efficacious and government-approved feed additives. The goal of these projects is to provide a product that can assist with feed hygiene as well as a product that can help improve raw material quality in times of challenges, such as the presence of mycotoxins.
Making Communities more Sustainable Through Stewardship

As part of our service to the communities where we work, Novus employees throughout the world look for ways to positively impact human health and nutrition through fundraisers, education programs and volunteer efforts. Here are just a few of the programs that were led by our employees in 2018.

Expanding Cancer Screenings in India

The Novus team in South Central Asia supported the Cancer Institute of India in establishing a remote cancer screening center to provide comprehensive cancer screening services through satellite centers in each district of India. The funds raised helped support the development of best practices for local medical and paramedical personnel who will lead this community-based application in prevention and early detection of common cancers.

Along with the cancer screenings, the effort also supports research initiatives that will generate evidence of cancer epidemiology.

SIX
Novus volunteers & participants from SCA

$40,000
Funds raised
An Egg a Day for Children in NEA

Each year, the Novus team in Northeast Asia and its partners donate eggs to low income primary school students in rural areas of the region. Called 鸡蛋童行爱心与诺, which translates to “Eggs Elevate Children’s Nutrition,” each student in the program is provided with one egg a day for a year to help a child receive basic and necessary nutrition. The participating schools change every year ensuring that different communities in Northeast Asia are touched by the effort.

NINE Novus volunteers & participants from NEA

$12,000 Funds raised

Since the program began seven years ago, Novus has donated approximately 580,000 eggs to more than 7,000 students at 11 schools.
Novus’s vision is to help feed the world affordable, wholesome food and achieve a higher quality of life. With that goal in mind, in 2011 Global Headquarters began fundraising efforts to help the St. Louis Foodbank fight food insecurity in the communities near HQ in Missouri. Over the years, the initiative has become a major fundraiser that employees strongly support.

A week’s worth of fundraising activities is held each year for the local food bank. Opportunities to donate in 2018 included buying tickets to win raffle prizes like admission to professional sporting events, airline tickets, additional paid time off or paying for the privilege of wearing jeans at the office during the workweek.

The funds raised in 2018 provided over 68,000 meals to residents in the Missouri and Illinois bi-state region. Novus employees, interns, and family members also volunteered to package 32,294 pounds / 14,658 kilograms of food for the Commodity Supplemental Food Program, which provides food specifically to low income elderly residents in the region.
Product not available in all countries.

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