



*Purpose-led, Performance-driven*  
***DSM ESG Factbook***



**DSM**

BRIGHT SCIENCE. BRIGHTER LIVING.

# DSM has embraced sustainability

- Long-term value creation is embedded in both the company's **purpose-led, performance-driven** strategy and the company culture. Sustainability is central to DSM's purpose
- DSM has set **ambitious ESG (environmental – social – governance) targets**
- DSM has the capability and the responsibility to make a **meaningful impact** on the global food systems, contributing to healthy people, healthy planet, and healthy livelihoods
- In this factbook, DSM highlights its ESG targets and its progress on these targets (part 1) and the main KPI's on how DSM is committed to improve the global food systems, including examples of positive impact (part 2)



# Sustainability is DSM's core value and DSM's key business driver



## Partnerships for the broadest reach:



# DSM, a growth company that delivers long term, purpose-led performance-driven profitable growth

Food systems face huge **environmental** and **societal** challenges and offer **opportunities**



Consumer



Society



Environment



Biotechnology



Data & Digital



Precision & Personalization

DSM uniquely positioned and has capabilities to **capture these opportunities**



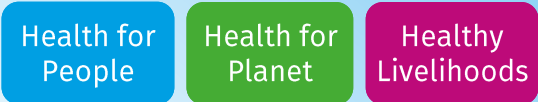
Great **People**, unique **Culture**

This creates long-term **purpose-led** positive impact on **people** and **planet**

**Responsibility for own people and purpose - Ambitious ESG targets**



**Caring for the world:** Positive societal and environmental impact



Building a growth company that delivers long-term, **performance-driven** profitable growth

Ambitious mid-term profit targets

**MSD % organic sales growth**

**Adj. EBITDA margins >20%**

**HSD % annual adj. EBITDA growth**

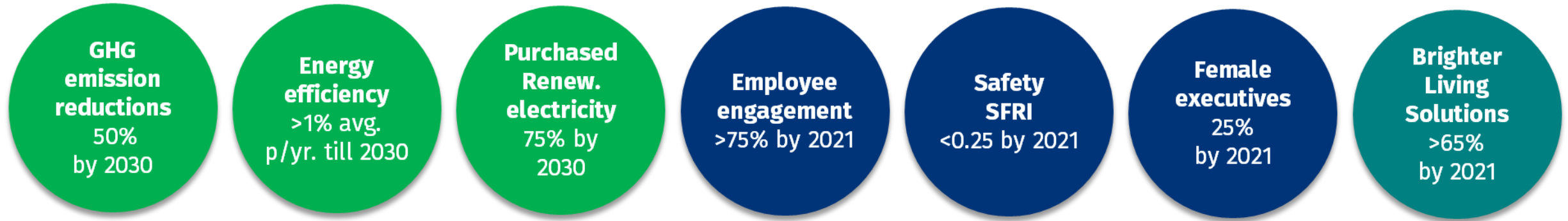




## ***PART-1***

# ***DSM's ambitious ESG targets***

# Ambitious ESG targets and strong recognition



DSM top ranked in leading ESG-ratings



# Route to Net Zero by 2050

**Net-Zero**  
GHG by 2050

**50%**  
Scope 1 + 2  
absolute emissions  
reduction  
from operations  
by 2030 vs 2016

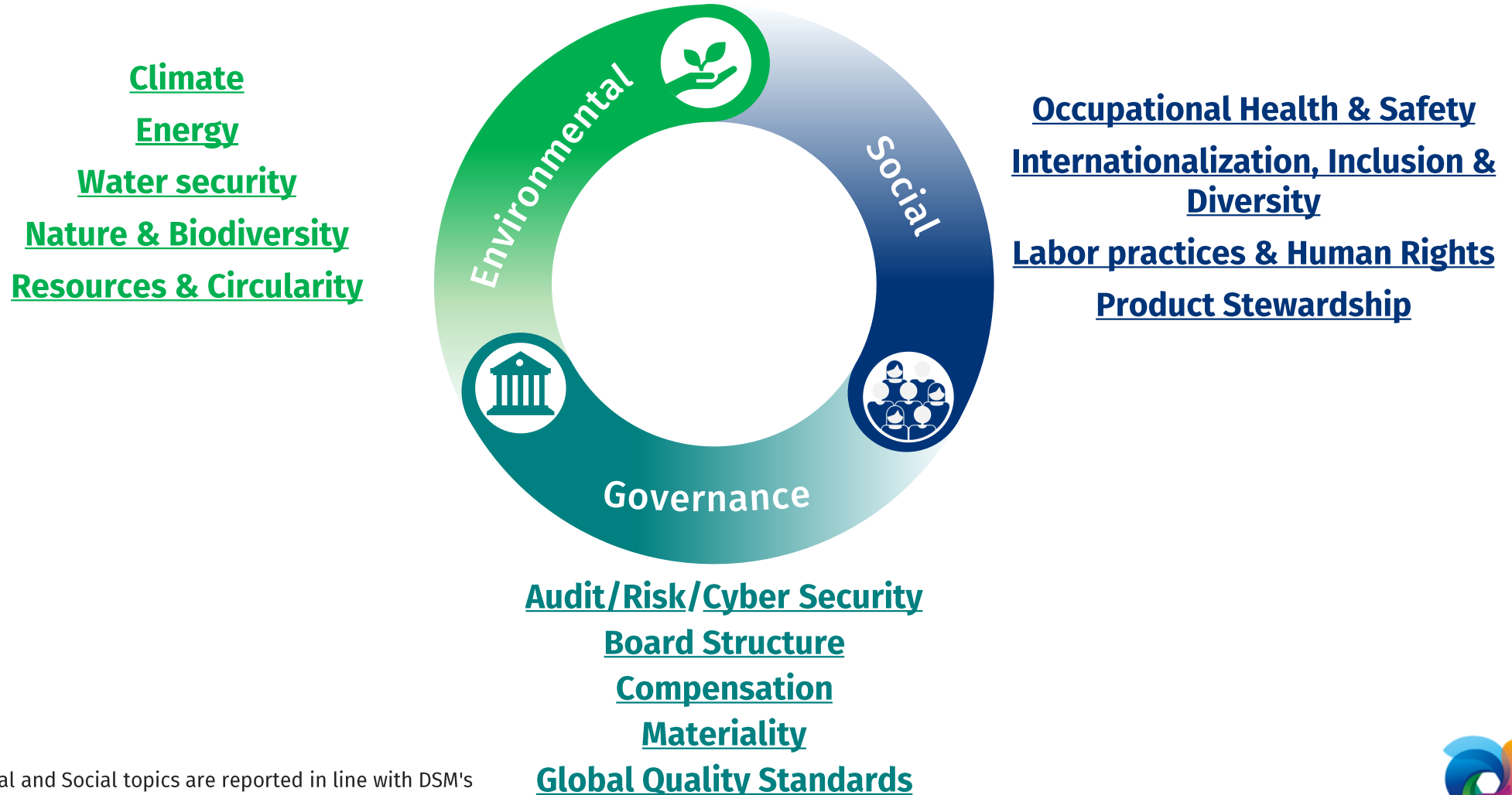
**€100**  
Per ton CO<sub>2</sub>  
Internal Price on Carbon

 **SCIENCE  
BASED  
TARGETS**  
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

- DSM's **Science Based Targets** consist of a greenhouse gas (GHG) scope 1 + 2 emission absolute reduction of 50% and a GHG scope 3 intensity reduction of 28% by 2030 versus our 2016 baseline
- 100% purchased electricity from **renewable resources** at the earliest opportunity. **Renewable electricity** target in China at 60% by 2030
- **Internal price on carbon** of €100 per mt, to guide investments and operational decisions towards carbon neutral operations
- Business growth projects must either be **GHG-neutral** or else be compensated for within the same business

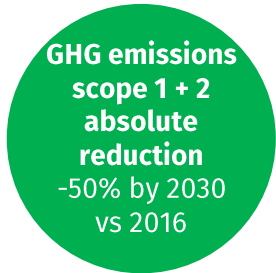
# Ambitious ESG targets and performance

*Tackling the full spectrum of ESG*





# Climate



**18%**  
reduction



**5%**  
reduction



- Net-zero GHG emissions across our operations and value chains by 2050
- DSM's Science Based Targets consist of a greenhouse gas (GHG) scope 1 + 2 emission absolute reduction of 50% and a GHG scope 3 intensity reduction of 28% by 2030 versus our 2016 baseline
- Internal price on carbon of €100 per mt, to guide investments and operational decisions towards carbon neutral operations
- DSM's climate change strategy and supplier engagement on climate both received an A rating by CDP in 2020
- The increase in emissions in 2020 is mainly due to inorganic growth and higher production volumes of key products in 2020

## Sources

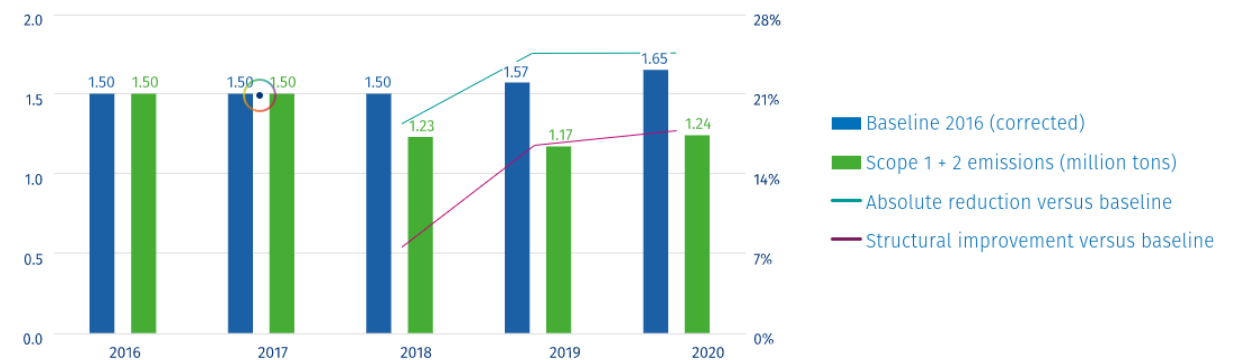
[IAR – Climate & Energy](#)

[Our operations](#)

[IAR - Responsible Care Plan](#)

	Aspiration	2020	2019
<b>Greenhouse gas (GHG)<sup>1</sup></b>			
GHG emissions scope 1 + 2 absolute reduction versus 2016	50% in 2030	25%	25%
GHG emissions scope 1 + 2 estimated structural improvement versus 2016		approx. 18%	approx. 17%
GHG emissions scope 3 intensity reduction	28% by 2030	5%	-
GHG emissions scope 1 + 2 market-based (million tons)		1.24	1.17
GHG emissions scope 3 (million tons)		12.0	11.6

## Scope 1 + 2 emissions and reductions versus corrected baseline<sup>2</sup>



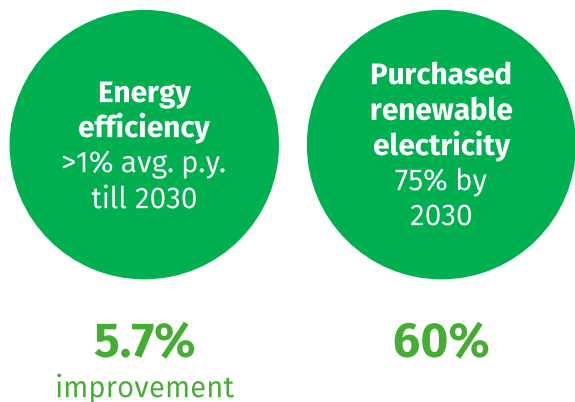
## Notes:

<sup>1</sup>All data presented are subject to the non-financial reporting policy. [IAR - Non-financial reporting policy](#)

<sup>2</sup>Absolute reduction and structural improvement were reported as of 2018.



# Energy



- Renewable electricity target: 75% of purchased electricity to be sourced from renewables by 2030.
- Energy efficiency target: annual average energy efficiency improvement of at least 1% until 2030
- 100% purchased electricity from renewable resources at the earliest opportunity
- Renewable electricity target in China at 60% by 2030

## Sources

[IAR – Climate & Energy](#)

[Our operations](#)

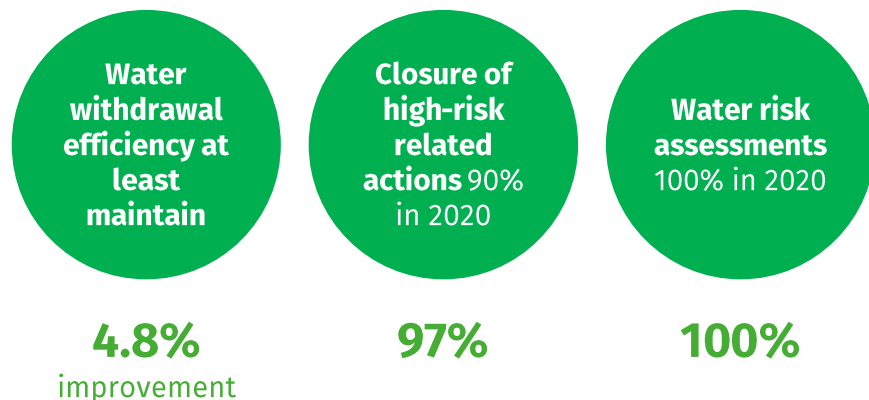
[IAR - Responsible Care Plan](#)

	Aspiration	2020	2019
<b>Energy<sup>1</sup></b>			
Primary energy use (PJ)		21.5	21.2
Final consumed energy (PJ)		18.2	17.4
Energy efficiency improvement year-on-year	> 1%	5.7%	2.3%
Purchased electricity from renewable sources	75% by 2030	60%	50%

## Notes:

<sup>1</sup>All data presented are subject to the non-financial reporting policy. [IAR - Non-financial reporting policy](#)

# Water security



- Water reduction target: 10% efficiency improvement on water-intake in water stress sites by 2030 (target announced in 2021)
- 75% of total water withdrawal is used for once-through cooling (OTC) purposes in low water-stress areas. Risk exposure and environmental impacts are limited
- Water governance and management strategy received an A- rating by CDP in 2020

## Sources

[IAR – Water Security](#)

[Our operations](#)

[IAR - Responsible Care Plan](#)

	Aspiration	2020	2019
<b>Water Use (million m<sup>3</sup>)<sup>1</sup></b>			
Water withdrawal for once-through cooling (OTC)		85	89
Water withdrawal for non-OTC		24	23
surface water		4.8	4.0
potable (tap) water		13.6	12.1
ground water		5.2	6.0
Consumptive Use		4.4	5.3
<b>Sustainable water management</b>			
Water risk assessments	100% in 2020	100%	100%
Closure of high-risk related actions	90% in 2020	97%	39%
Water withdrawal efficiency improvement	at least maintain	4.8%	3.5% <sup>2</sup>
<b>Emissions to water</b>			
COD (kt)		2.0	2.1

## Notes:

<sup>1</sup>All data presented are subject to the non-financial reporting policy. [IAR - Non-financial reporting policy](#)

<sup>2</sup>The 2019 water withdrawal efficiency improvement has been restated due to a correction in the calculations at one location.

# Nature & biodiversity



- 27% of DSM's sites are in or adjacent to protected areas. DSM continuously assesses and monitors the impact on protected areas within the vicinity
- DSM sources limited amounts of palm oil derivatives, soy derivatives and wood fiber. For these commodities, DSM works with globally recognized sustainability certifications
- DSM supports the preservation of biodiversity through sustainable sourcing of renewable raw materials with minimum footprint
- We commit to be deforestation-free in our primary supply chains by 2030 at the latest. This target covers the Tier 1 supply chain for our deforestation-risk crops: palm-derivative products, sugarcane, and direct soy and corn products

## Position Papers

- [Biodiversity](#)
- [Sustainable Animal Proteins](#)
- [Fish Oil](#)
- [Sustainable Biomass](#)
- [Industrial Biotechnology](#)
- [Animal Studies](#)

## Sources

- [Responsible Management of Forest Resources](#)
- [IAR – Nature and Biodiversity](#)
- [Our operations](#)
- [IAR - Responsible Care Plan](#)

	Aspiration	2020	2019
<b>Protected Areas<sup>1</sup></b>			
Sites in or adjacent to protected areas		27%	25%
Sites in registered protected area		3%	3%

### Notes:

<sup>1</sup>All data presented are subject to the non-financial reporting policy. [IAR - Non-financial reporting policy](#)

# Resources & Circularity



**85%**



**6.3%**

- The renewable raw materials DSM uses include waste from agriculture, yeasts and enzymes, carbohydrates and natural oils, and acids. In 2020, the share spend on renewable raw materials increased to 15.2% from 14.7% in 2019. The percentage increase is due to an increase in spend on enzymes, gelatins and other food additives

## Sources

[IAR – Resource & Circularity](#)

[Our operations](#)

[IAR - Responsible Care Plan](#)

	Aspiration	2020	2019
<b>Renewable &amp; secondary raw materials<sup>1</sup></b>			
Renewable raw materials (% of spend)		15.2%	14.7%
<b>Waste</b>			
Waste recycled	80-90% in 2020	85%	86% <sup>2</sup>
Total process-related waste efficiency improvement	at least maintain	6.3%	2.8%
Non-hazardous process-related waste (kt)		130	107 <sup>2</sup>
Hazardous process-related waste (kt)		75	85
Non-process related waste (kt)		10	5
<b>VOC efficiency improvement versus 2015<sup>1</sup></b>			
VOC (x 1,000 tons)	Continuous improvement	74%	74% <sup>3</sup>
		3.5 <sup>4</sup>	2.7

## Notes:

<sup>1</sup>All data presented are subject to the non-financial reporting policy. [IAR - Non-financial reporting policy](#)

<sup>2</sup>The 2019 non-hazardous waste and waste recycled have been restated due to a correction in the calculations at one location.

<sup>3</sup>The 2019 VOC efficiency improvement has been restated due to a correction in the calculations for one location.

<sup>4</sup>The increase in emissions in 2020 is due to the inclusion of acquired sites, which do not contribute to efficiency improvement calculations in the year of addition.

# Occupational Health & Safety



**0.20**



**0.24**

- DSM’s focus on sites with the highest numbers of recordable injuries continued to deliver results, incident rates decreased by 40% compared to 2019 at these sites
- Process safety refers to the safe operation of DSM’s facilities. The reduced rate can be attributed to the asset improvement programs that began in 2019
- DSM has been fatality free since 2018. For DSM own employees, it has been fatality free since 2010

## Sources

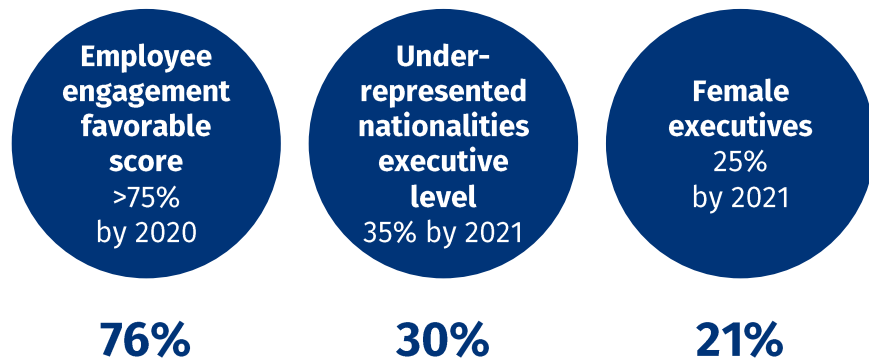
- [Code of Business Conduct](#)
- [Safety, Health and Environmental policy](#)
- [Supplier Code of Conduct](#)
- [IAR – Safety, health & well-being](#)

	Aspiration	2020	2019
<b>Occupational safety<sup>1</sup></b>			
Frequency Index REC	0.25 in 2020	0.24	0.28
Frequency Index LWC		0.09	0.09
<b>Process safety</b>			
PSI Rate	0.15 in 2020	0.20	0.23
<b>Occupational health cases</b>		19	16

## Notes:

<sup>1</sup>All data presented are subject to the non-financial reporting policy. [IAR - Non-financial reporting policy](#)

# Internationalization, inclusion & diversity



- 29:71 female:male ratio
- The engagement survey measures the degree to which employees feel valued at DSM. The response rate of 92% in 2020 is equal to the highest recorded rate. The Employee Engagement Index continue to improve, reaching 76%. Above 75% is considered top rank, so this is a very good performance
- Top ranking for gender equality by Equileap 2021

## Sources

[Code of Business Conduct](#)  
[Safety, Health and Environmental policy](#)  
[Supplier Code of Conduct](#)  
[IAR – Inclusion & Diversity](#)

	Aspiration	2020	2019
<b>Engagement Index<sup>1</sup></b>	75% by 2020	76%	74%
Participation Rate		92%	92%
<b>Inclusion index<sup>1</sup></b>		75%	72%
<b>Female</b>			
Executives	25% by 2021	21%	20%
Management		30%	29%
Other		29%	28%
<b>Under-represented nationalities</b>			
Executives	35% by 2021	30%	31%
<b>Training</b>			
Training hours per employee		6	8

## Notes:

<sup>1</sup>All data presented are subject to the non-financial reporting policy. [IAR - Non-financial reporting policy](#)

# Labor practices & Human Rights



- At DSM we have committed to:
  - The Universal Declaration of Human Rights
  - The International Covenant on Civil and Political Rights
  - The International Covenant on Economic, Social and Cultural Rights
  - The International Labor Organization’s (ILO)
  - Declaration on Fundamental Principles and Rights at Work
- DSM is committed to the principle of equal opportunities for all employees, which includes providing our employees with a living wage
- DSM uses the higher bound of the Anker methodology to calculate living wage. This is the highest standard within the methodology
- The Sustainable Procurement Program (SPP) handles potential labor and human rights issues that reside beyond its own operations. DSM assesses suppliers for possible human rights violations through sustainability assessments and audits from ‘Together for Sustainability’ and EcoVadis

	2020	2019
Gender pay gap <sup>1,2</sup>	8%	9%
Employees below a living wage	< 2%	-

**Notes:**

<sup>1</sup>Gender pay gap percentages are in favor of women.

<sup>2</sup>All data presented are subject to the non-financial reporting policy. [IAR - Non-financial reporting policy](#)

**Position Papers**

[Human Rights](#)

[Modern Slavery Statement](#)

**Sources**

[Our Operations](#)

[Supplier Code of Conduct](#)

[Whistleblower Policy](#)

[IAR – Human Rights](#)


[Fair Remuneration framework](#)



# Product Stewardship



## Defining Principles

 <b>Responsible business</b>	Taking responsibility to control and minimize safety risks/adverse effects on health and environment caused by substances in products throughout their entire life cycle
 <b>Transparent communication</b>	Sharing safety, health and environmental data through proper supply chain communication
 <b>Compliance</b>	Complying with all applicable and relevant legislations and regulations worldwide that affect products
 <b>Innovate safer ingredients</b>	Taking responsibility to control and minimize safety risks/adverse effects on health and environment caused by substances in products throughout their entire life cycle
 <b>Stakeholder involvement</b>	Engaging with customers, suppliers and other stakeholders to foster new opportunities
 <b>Organization</b>	Having Product Stewardship policies in place, integrated with the business

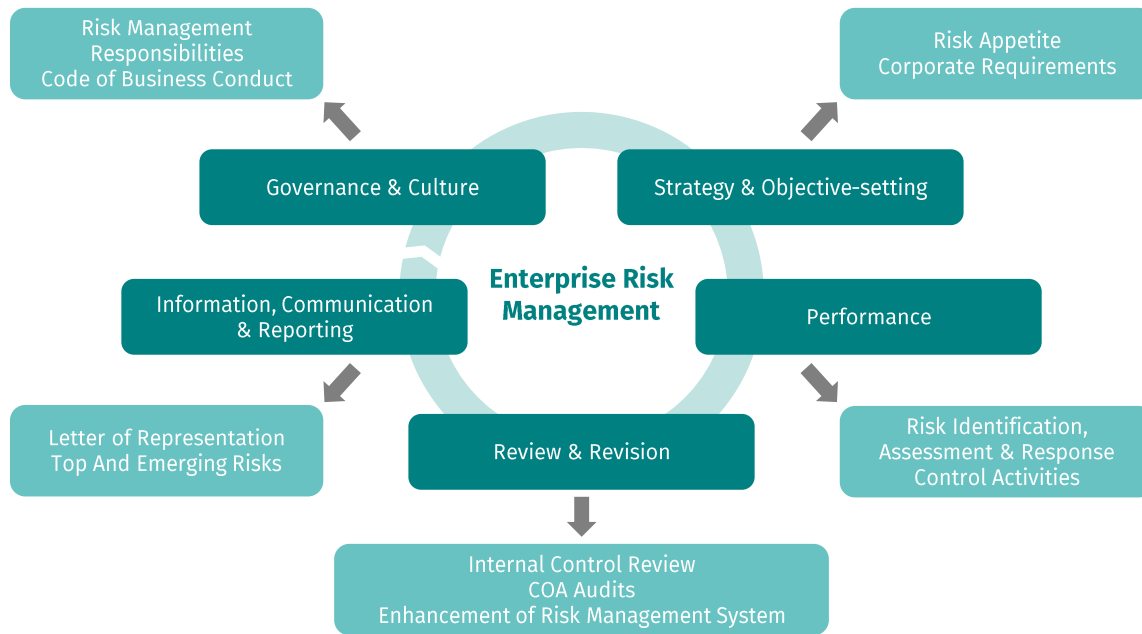
- Manage and minimize all possible adverse effects of products on people and the environment, across the entire value chain. That means tackling everything from transparency on substances used in products and their safe sourcing; to production, processing and transport to the use, disposal and recycling of products.

### Sources

[Product stewardship](#)  
[Supplier Code of Conduct](#)  
[IAR – Product Stewardship](#)



## Enterprise Risk Management



- A well-embedded risk management framework and accompanying organization is in place. The framework is based on COSO Enterprise Risk Management. The visualization to the left is structured accordingly
- In 2020, Corporate Operational Audit carried out 58 risk-based audits. In general, audit findings are considered opportunities for improvement as part of a healthy learning culture. In virtually all of the audited areas (e.g., Operations, IT, Finance, Safety, Health & Environment (SHE), Quality, Commercial) the expected DSM standard was achieved

### Sources

[Corporate Governance](#)

[Code of Business Conduct](#)

[IAR - Code of Business Copnduct](#)

[IAR – Risk Management](#)

[IAR - Taskforce on Climate-related Financial Disclosures \(TCFD\)](#)

# Cyber Security



## Information Security



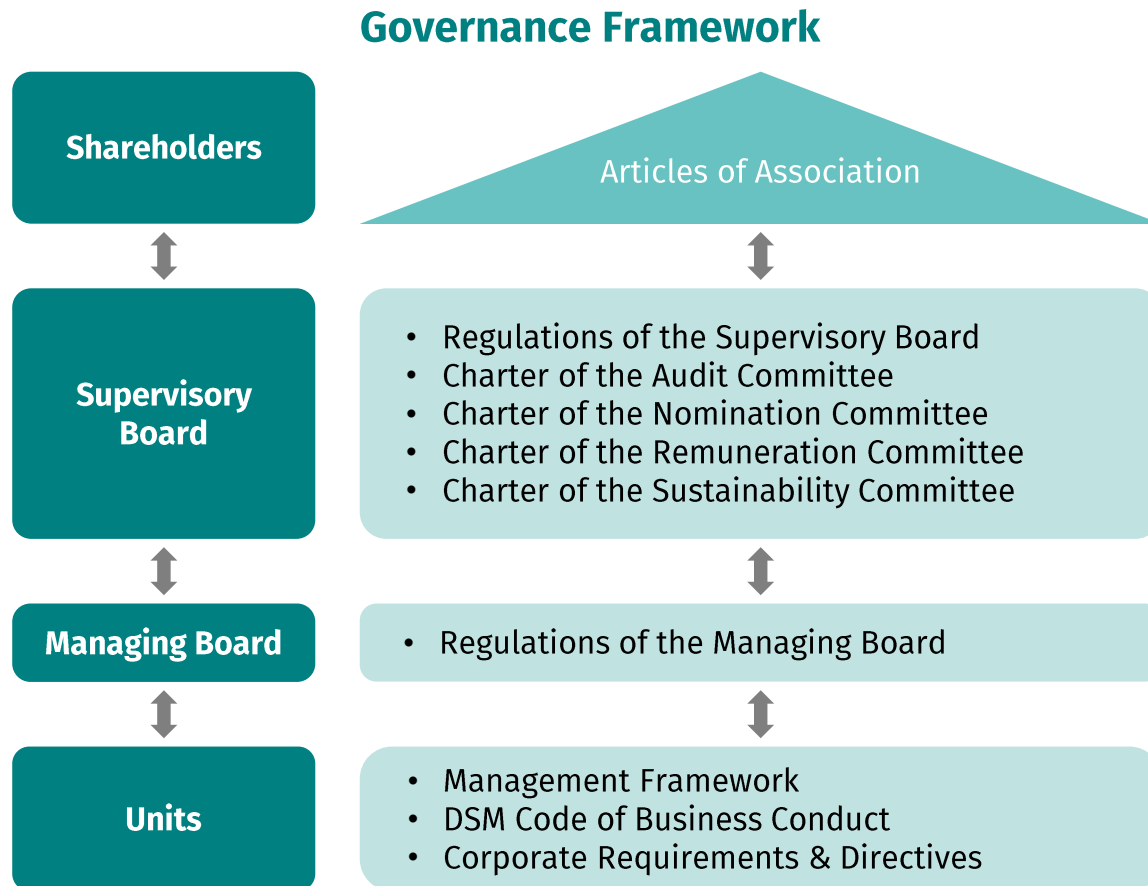
- In an increasingly digital world, DSM is subject to cybersecurity attacks which, if successful, could lead to a loss of Intellectual Property, discontinuity of operations, or otherwise have a negative impact on the company. To address this risk, we implemented our multi-year cybersecurity program that covers the domains of information technology, operations technology, and R&D laboratory systems
- A global Cybersecurity Governance Board was established to ensure a global, cross-functional approach to cyber risks and related risk responses
- Senior leadership is informed monthly via the “Executive Cyber Security Dashboard” that provides a complete (bottom-up) overview of status and trends related to DSM’s cyber resilient risk posture, operational effectiveness and strategic initiatives. Periodically this dashboard and related relevant topics are also discussed in the EC and Audit Committee meetings
- DSM has not detected or is made aware of any major information security breaches in the last three years.
- DSM has entered into an information security risk insurance policy and has concluded a cyber insurance including cover for protection of confidential information (privacy event)
- Cyber resilience of DSM is **audited** in- and externally based on globally recognized information security standards. Primarily the standards from the International Organization for Standardization (ISO) and the National Institute of Standards and Technology (NIST) are used. For more information see: [IAR – Risk Management](#)

## Information security training program



- Information security awareness is a key-priority within DSM and several (mandatory) training programs exist. From mandatory recurring training for all employees to specific role related training for teams or individuals. Frequency depends per training. Next to this awareness is tested multiple-times a year and based on results additional (targeted) training or controls are put in place
- Phishing tests, both global and targeted, are frequently executed
- The Global Mandatory Values Training (GMVT) program contains the DSM Security e-learning and the DSM Cyber Fraud Awareness e-learning, which are mandatory for all DSM employees. Both trainings contain relevant information security topics and have a refresher frequency of once per 3 years. In the DSM IAR we report the course completion levels of the GMVT courses in the Code of Business Conduct section, which is publicly available on the DSM website: [IAR – Code of Business Conduct](#)

# Board Structure



- The **Supervisory Board (SB)** supervises the policy pursued by the Managing Board, its performance and the company's general course of affairs. The SB approves the annual financial statements. It is organized around committees including Audit, Nomination, Remuneration and Sustainability Committees (8 members, 50% female)
- All current members of the SB are independent in accordance with the Dutch Corporate Governance Code
- The **Managing Board (MB)** is responsible for the strategy, portfolio management, deployment of human and financial capital, risk management, financial and sustainability performance (2 members, 50% female)
- The **Executive Committee (EC)** focuses on strategy and direction, review of business results, functional and regional strategies, budget-setting, and people and organization. It includes the MB members and eight senior Managers (6 members, 66% female). The statutory responsibilities of the Managing Board remain unchanged

## Sources

[Corporate Governance](#)

[IAR – Corporate Governance](#)

[Code of Business Conduct](#)

[IAR – Supervisory Board and Managing Board Royal DSM](#)

# Compensation

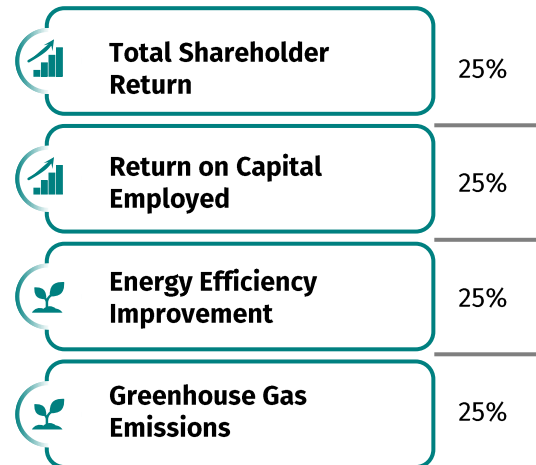


## Variable Remuneration of the Managing Board

### Goals set for Short-Term Incentive



### Goals set for Long-Term Incentive Performance Shares Units (PSUs)



- Total Direct Remuneration approaches the median of a predefined peer group. Reward levels are benchmarked against the Dutch/European labor market peer group, while the design of various reward components is reviewed against the broader perspective of best market practices
- For information on how the policy was executed in 2020 please see the annual report

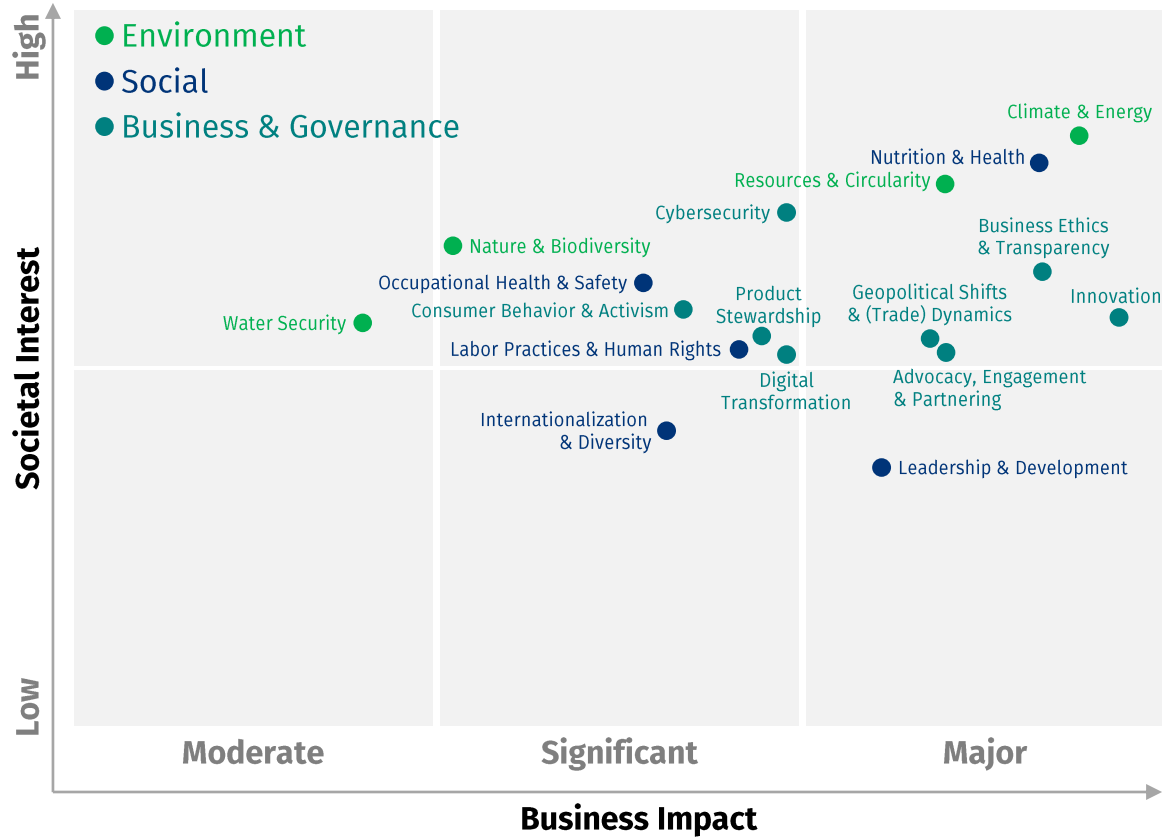
### Sources

[Remuneration Policy](#)  
[Corporate Governance](#)  
[Code of Business Conduct](#)  
[IAR – Remuneration report 2020](#)

# Materiality



## Materiality Matrix



- In order to assess material topics that are both of interest to society and have impact on the businesses, DSM annually updates its materiality analysis. Direct feedback on the proposed topics is obtained through employee workshops and external stakeholder dialogue
- The Matrix is reviewed and approved by the Managing Board

### Position Papers

[Naturalness of Ingredients](#)  
[Vitamins & Ingredient Efficacy](#)  
[Infant Nutrition](#)

### Sources

[Charter Sustainability Committee](#)  
[IAR - Materiality](#)  
[Taxation](#)

# Global Quality Standards



**Complaint handling**

DSM has systems in place to address problems immediately and do whatever it takes to keep operations running smoothly. Coupled with this DSM conducts a thorough Root Cause Analysis to prevent recurrence of the problem using the TOPS 8D methodology



**Safety, health, and environment**

DSM's policy is to run its operations in a way that doesn't adversely affect safety, health and the environment. To this end DSM runs an Environmental Management System at all sites worldwide based on international standard ISO 14001:2015



**Product information and specifications**

It all starts with consistency of the goods produced. DSM provides a Supply Agreement for customers with detailed specifications based on internationally accepted standards like ISO and ASTM



**Packaging and shipping**

Quality of delivery is a major issue for global customers and DSM delivers quickly and consistently in a variety of formats

- DSM's SHE policy is to maintain business activities and products that do not adversely affect safety or health and that fit with the concept of sustainable development
- Quality is about more than just compliance: It's about consistency. DSM's global customers deserve the highest quality products, services and support. To meet their needs the goal is to do it perfectly every time
- DSM believes that sustainability implies a responsibility to involve Direct and Indirect (production-related and non-production related) suppliers, contractors and agents in the pursuit for economic performance, environmental quality and social responsibility in DSM as well as in the value chains

## Sources

[Safety, Health and Environmental policy](#)  
[Quality](#)  
[Supplier Code of Conduct](#)

# Committed to stay ahead in Sustainability reporting



- DSM's sustainability reporting:
  - ✓ Under Reasonable Assurance
  - ✓ In accordance with GRI Standards
  - ✓ UN Global Compact, Taskforce on Climate-related Financial Disclosures (TCFD)
  - ✓ Mapped to Sustainability Accounting Standards Board's standard (SASB) and WEF IBC Stakeholder Capitalism metrics
- DSM will ensure its methodology will allow reporting against new and future requirements of regulating authorities
  - ✓ EU Sustainable Finance Action Plan, e.g. EU Green deal, EU Taxonomy, EU Corporate Sustainability Reporting Directive, Sustainable Finance Disclosure Regulation (SFDR)
- And create transparency in mapping the impact of DSM's sales on achieving the UN Sustainability Development Goals
- DSM is committed to continue to obtain reasonable assurance on its sustainability (impact) reporting





## **PART-2**

# ***Translating business actions into societal impact: DSM's food systems ambitions & commitments***

# Global food systems face multiple systemic interconnected challenges



(Hidden) Hunger and malnutrition



Diet-related illnesses, overweight, obesity



Vitamin and mineral deficiencies



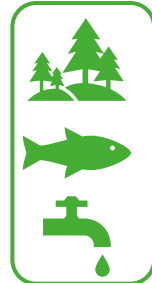
Immunity incl. anti-microbial resistance

People



Emissions from livestock

Green House Gasses (e.g. methane), nitrogen, ammonia, phosphorus



Loss of **biodiversity**, **deforestation**, loss **ecosystem on land** and in **the ocean**



Food loss & waste

Planet



Inequality



Farmers not able to generate a **fair and stable income** in the value chain



Lacking **basic needs** such as food, healthcare and education



Livelihoods



# DSM's ambitions to create a better world

Contributing to the achievement of the UN Sustainable Development Goals

Support affordable, accessible, aspirational **healthy nutrition** for a growing global population

**Fight hunger and malnutrition** worldwide

Provide for healthy diets and **combat diet-related diseases**

Support good health and **immunity** through via diets and supplementation

**Reduce the risk of anti-microbial resistance**



**Reduce emissions** from livestock: greenhouse gas (CO<sub>2</sub>, methane), nitrogen/ammonia, phosphorous

**Limit impact on natural resources**, reduce pressure on biodiversity, conserve forests & oceans

Drive sustainable proteins from farming whilst **improving animal health & welfare**

Develop and enable **alternatives for animal proteins**, that are nutritious, tasty and sustainably produced

**Support farmers** to generate a fair and stable income with sustainable farming practices

Promote a healthy supply chain for food and feed production that provide **welfare for the local communities** in which they operate

Promote **education, equality, equity, human rights**

# Ambitions translated in clear KPI's: DSM's food system commitments

Health for People



Closing micronutrient gap for **800 MILLION PEOPLE**

Supporting immunity of **500 MILLION PEOPLE**

Health for Planet



**DOUBLE DIGITS**  
on-farm livestock emission reduction

Reaching **150 MILLION PEOPLE** with solutions for nutritious, sustainably produced plant-based protein foods

Healthy Livelihoods



Supporting the livelihoods of **500,000 SMALL-HOLDER FARMERS** across value chains

# Supporting the immunity of people with micronutrient supplements

- Supporting the immunity of half a billion people by 2030 with micronutrient supplements, such as Vitamin C, D, Omega-3 fatty acids, HMOs and Probiotics
- **How will DSM achieve this?**
  - Stepping up the delivery of essential vitamins and minerals
  - Expanding commercial immunity campaigns
  - Working with governments to implement effective voluntary supplement programs
  - Developing and launching new innovative solutions such as ampli-D® - a highly bio-available form of Vitamin D
- **Example: Rice Fortification**
  - ampli-D® is a 3x faster and more effective form of Vitamin D due to its higher 'bioavailability': it is faster and better absorbed by the body.

Health for  
People



# Tackling antimicrobial resistance



- 50-70% of all antibiotics are used by the livestock farming industry
- Current over-usage of antibiotics could result in loss of **10 million human lives per year by 2050** due to antimicrobial resistance
- **Ambition:** Replace **anti-biotic growth promoters** and reduce prophylactic use of antibiotics
- **Solutions:** Eubiotics and enzymes, safe innovative feed additives that support gut health & growth in farm animals:
  - **Balancius™** enzyme supports gastrointestinal functionality in broilers. It improves feed conversion by 3% and increases weight gain by 4-6%
  - **Crina®** eubiotic increases feed efficiency at ruminants by >2.5%, supports maintaining milk production
  - **Vevovital®** eubiotic increases feed efficiency at piglets by >2.5%, increases weight gain by >5% and lowers ammonia (nitrogen) emissions by up to 20% in swine



# Enable the micronutrient gap of vulnerable people to be closed

- Enable the micronutrient gaps of 800 million vulnerable people to be closed by 2030, through fortified staples and public health supplements, together with DSM partners
- **How will DSM achieve this?**
  - Maintaining and stepping up partnerships with long-standing partners such as WFP, UNICEF, Sun Business Network and World Vision to increase reach with fortified staples and multi micronutrient supplement
  - Bringing new innovations to the market for fortified staples
- **Example: Rice Fortification**
  - With over 3 billion people worldwide relying on rice as their staple food, with milled rice being a source of energy but poor in micronutrients, rice fortification offers a unique opportunity to substantially improve their micronutrient status at a very low cost without people having to change their diet habits.
  - DSM provides extruded fortified kernels made from essential micronutrients and rice flour, which are mixed into regular rice at 0.5-2% to increase its nutritional value



# Making efficient use of natural resources

- An estimated 70% increase in animal protein demand places tremendous pressure on the world's natural resources from the land and the oceans
- **Ambition:** Limit the use of finite natural resources and reduce pressure of crop production on biodiversity, conserve forests and oceans
- **Solutions:** A range of highly innovative feed additives:
  - **Protease Proact®:** Improves feed digestibility, allows more diverse use of various local feed raw materials, decreases pressure on land-use and deforestation. Used globally in broilers, ProAct® would save 9m tons of soy and lower deforestation pressure of 3m ha per year (the size of Belgium)
  - **Mycotoxin deactivation:** Agricultural commodities are infested by molds, hazardous to animals and humans that cost the global livestock and agri industries billions a year. DSM Erber is a leading pioneer in detecting and combatting almost 400 different types of mycotoxins
  - **Veramaris:** Reducing reliance on marine resources. 1kg Veramaris oil is equivalent to 60kg wild catch. Veramaris can produce high quality omega-3 (EPA/DHA), equivalent to 1.2m tons of wild catch fish – more than the annual catch from the Mediterranean Sea





# Reducing emissions from livestock



- Around 14.5% of all human-caused greenhouse gas (GHG) emissions come from livestock, with ~65% of this from dairy and beef cattle
- **Ambition:** To reduce GHG, nitrogen and phosphorus emissions and create a low emissions future for animal farming
- **Solutions:** A range of highly innovative feed additives, for example:
  - **Bovaer**® acts on rumen microbes, reducing enteric methane emissions (a major source of global GHG) in dairy, beef and sheep by approximately 30%
  - **Vevovital**® a key eubiotics, increases feed efficiency in piglets by >2.5%, increases weight gain by >5%, while significantly reducing ammonia (nitrogen) emissions by up to 20% in swine
  - **Protease**® feed enzymes improve feed efficiency, increasing protein digestibility, reducing the amount of protein needed in feed and reducing nitrogen emissions by up to 17% in broilers
  - **Phytase**® feed enzymes improve phosphorus digestibility from feed ingredients, reducing the amount of phosphate needed in feed and reducing phosphorus emission to the environment



# Reaching people with nutritious, delicious, plant-based foods

Health for Planet



- Reaching 150 million people with nutritious, delicious, sustainable plant-based foods by 2030 with taste, texture and nutrition solutions
- **How will DSM achieve this?**
  - Stepping up acceptance of nutritious, tasty and sustainably produced plant-based meat, dairy and fish alternatives
  - Applying DSM food and nutrition ingredients such as **Delvo**® plant, **Maxavor**®, **GELLANEER**®, vitamins, minerals and plant-based protein extracts such as **CanolaPro**®
  - Tailor made advice based on nutrition & application expertise and tools (**Fortitell**®)
- **Example: Canola Pro**®
  - The inedible by-product of canola seed oil extraction transformed by cold pressing into a valuable food protein extract for food and beverages. High nutritional value, balanced taste profile, functional properties, including high solubility
  - Joint venture by DSM and Avril, building a factory in Dieppe (France). **CanolaPro**® will be commercially available as of 2022.



# Africa Improved Foods – combat malnutrition and improve farmers’ livelihoods

- Africa Improved Foods (AIF) is a manufacturer and supplier of high-quality and nutrient-rich complementary foods to combat malnutrition for children and pregnant and breastfeeding women in Rwanda and the East African region
- AIF provides a scalable and sustainable solution to malnutrition via local production of highly nutritious foods. AIF is a public-private partnership involving the Government of Rwanda, DSM, the Dutch Development Bank (FMO), DFID Impact Acceleration Facility managed by CDC Group plc (CDC), and the International Finance Corporation (IFC), the private-sector arm of the World Bank Group
- AIF is deeply committed to SDG #2: Zero Hunger. Not only because, AIF’s products feed millions and prevent malnutrition but also because **AIF work with smallholder farmers to improve their livelihoods**
- AIF is a social enterprise. Embedded in its strategy is to reduce poverty and create job. AIF develops local maize and soy farming to a much higher standard. Profit that is above a basic commercial return is given back to the Government of Rwanda to fund further nutritional programs
- AIF has a target to buy at least 50% of its maize locally. By buying locally, AIF aims to **improve farmers’ livelihoods** and contribute to rural development. AIF pays prices above market price, sourced from over 130,000 smallholder farmers in the region



# Safe harbor

This presentation may contain forward-looking statements with respect to DSM's future performance and position. Such statements are based on current expectations, estimates and projections of DSM and information currently available to the company. DSM cautions readers that such statements involve certain risks and uncertainties that are difficult to predict and therefore it should be understood that many factors can cause actual performance and position to differ materially from these statements. DSM has no obligation to update the statements contained in this presentation, unless required by law

A more comprehensive discussion of the risk factors affecting DSM's business can be found in the company's latest Annual Report, which can be found on the company's corporate website, [www.dsm.com](http://www.dsm.com)



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