

Food System Transformation

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Japan Sustainability Forum

Side-event of the Nutrition for Growth Summit 2021
May 2021



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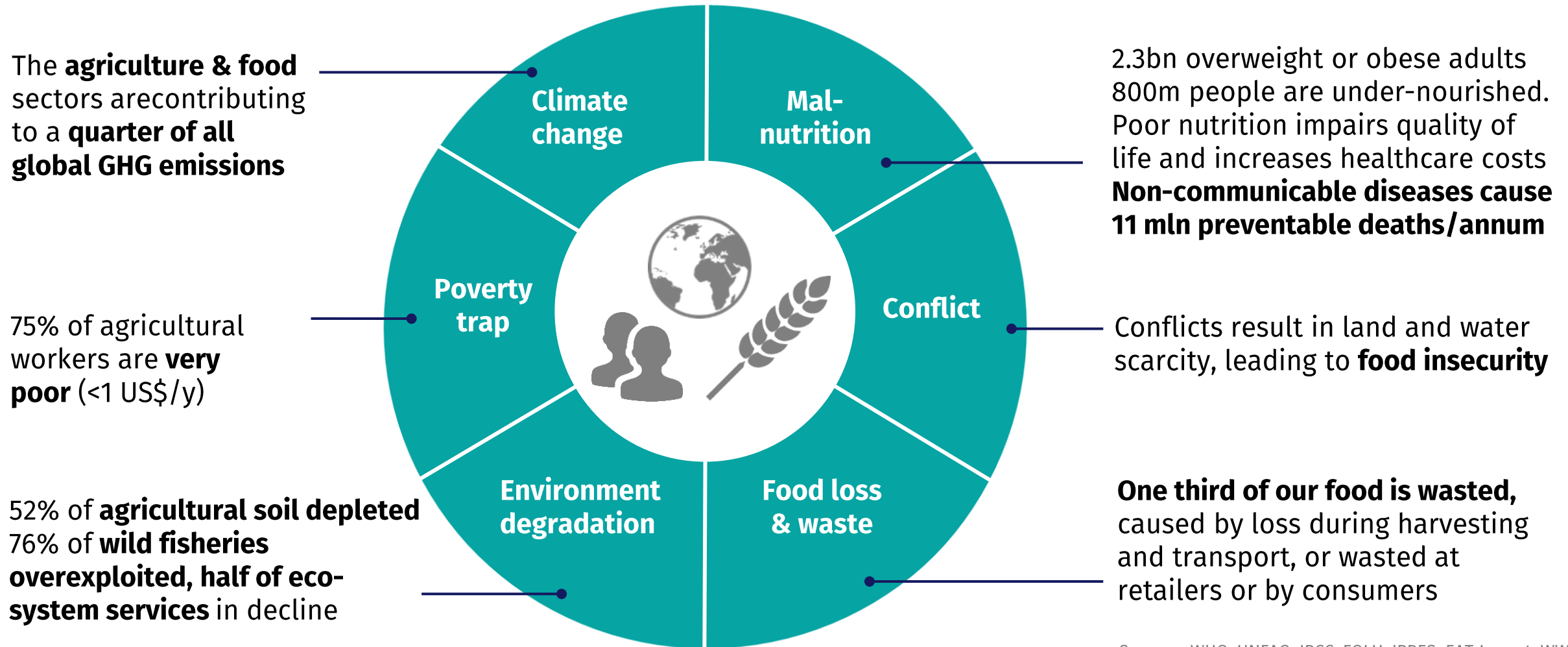
Agenda

- Food systems under pressure
- DSM ambitions
- Proteins & Sustainable Agriculture
- Affordable Nutrition
- Partnering for Impact
- Food Valley



Food systems under pressure

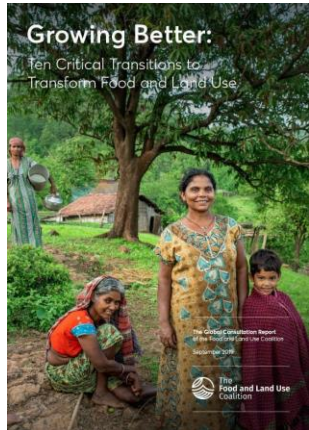
Climate change will first hit food systems



Sources: WHO, UNFAO, IPCC, FOLU, IPBES, EAT-Lancet, WWF

Scientists prompt for food system change

New scientific reports were published in 2018-2020 with strong recommendations



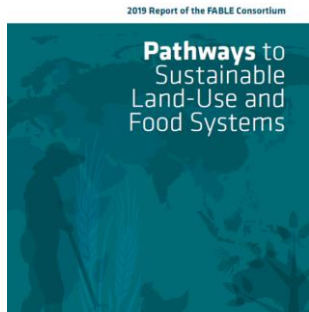
Food and Land Use Coalition, 2019, 2020



World Resources Institute, 2019



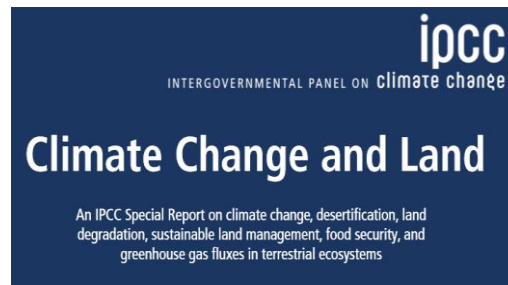
EAT-Lancet Commission, 2019



FABLE Consortium 2019, 2020



IPES-Food, 2019



IPCC, 2019

Urgent action is needed for:

- ✓ Healthier diets
- ✓ Sustainable production
- ✓ Reducing food loss and waste,
- ✓ Reducing inequality

2021: The Year of Food: UN Food System Summit & N4G

To achieve the Sustainable Development Goals and the Paris Agreement



Focus: Food Systems
September 2021
NYC/hybrid
United Nations



TOKYO
**NUTRITION
FOR GROWTH**
SUMMIT 2021

Diet, Health, & Prosperity for All

Focus: Nutrition
December 2021, Tokyo/hybrid
Government of Japan

UN FSS Action Tracks

1. Ensuring safe nutritious food for all
2. Sustainable Consumption patterns
3. Nature Positive production
4. Equitable Livelihoods
5. Resilient food systems

N4G Responsible Business Pledge – business commitment areas

1. Nutrition-smart Agriculture
2. Product (re)formulation and Innovation for Improved Nutrition
3. Business Model innovation for Improved Nutrition
4. Responsible Marketing
5. Promote Healthy Eating
6. Workforce Nutrition
7. Finance and Investment for Improved Nutrition

4: DSM and food system transformation:

*‘We aim to contribute to **healthy, enjoyable and accessible food and nutrition** solutions for all, produced and consumed respecting the **planetary boundaries**’*

**Sustainable
Proteins**

**Affordable
nutrition**

**Food loss
& waste
reduction**

**Healthy
diets**

**Sustainable
Agriculture**

Nutritious, delicious, sustainably produced protein foods



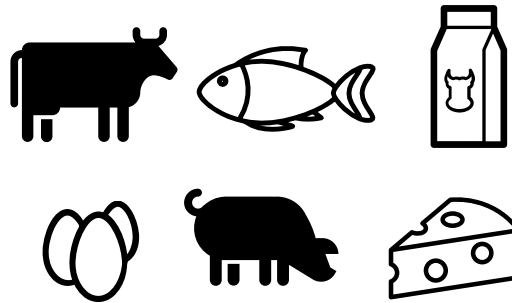
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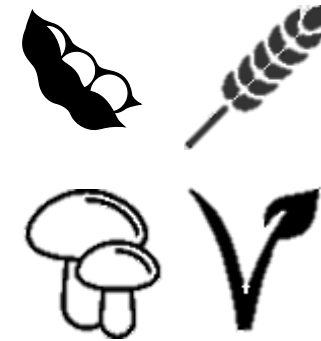
DSM enables nutritious, delicious, sustainably produced foods - whatever food choices consumers make



50-70g
per day*



Supporting sustainable, nutritious
animal protein products



Helping craft great-tasting, healthy
plant-based options

Sustainable Animal Proteins

feed solutions and

on farm environmental impact
insights: Sustell™ service



Consumers realise they can make a significant contribution to reducing carbon emissions through food choice

10-30%

of a household's carbon footprint is related to food



30%

of consumers have a willingness to pay for sustainable foods



European countries and retailers are experimenting with environmental footprint labelling



Consumers get nutritional information to help manage their health

Simplifying nutrition & becoming widely adopted



Front of pack labelling to communicate environmental footprint

Being tested by major retailers (Colruyt, Lidl)



Detailed product footprints (kg CO₂/kg) now on pack

Driving awareness about food choice and carbon footprint



Coop Denmark provides its customers with an App that tracks the carbon footprint of their food choices

Meat and dairy producers step up, set Science-Based GHG emission targets and aim for carbon neutral milk



Carbon neutral beef



Carbon neutral milk

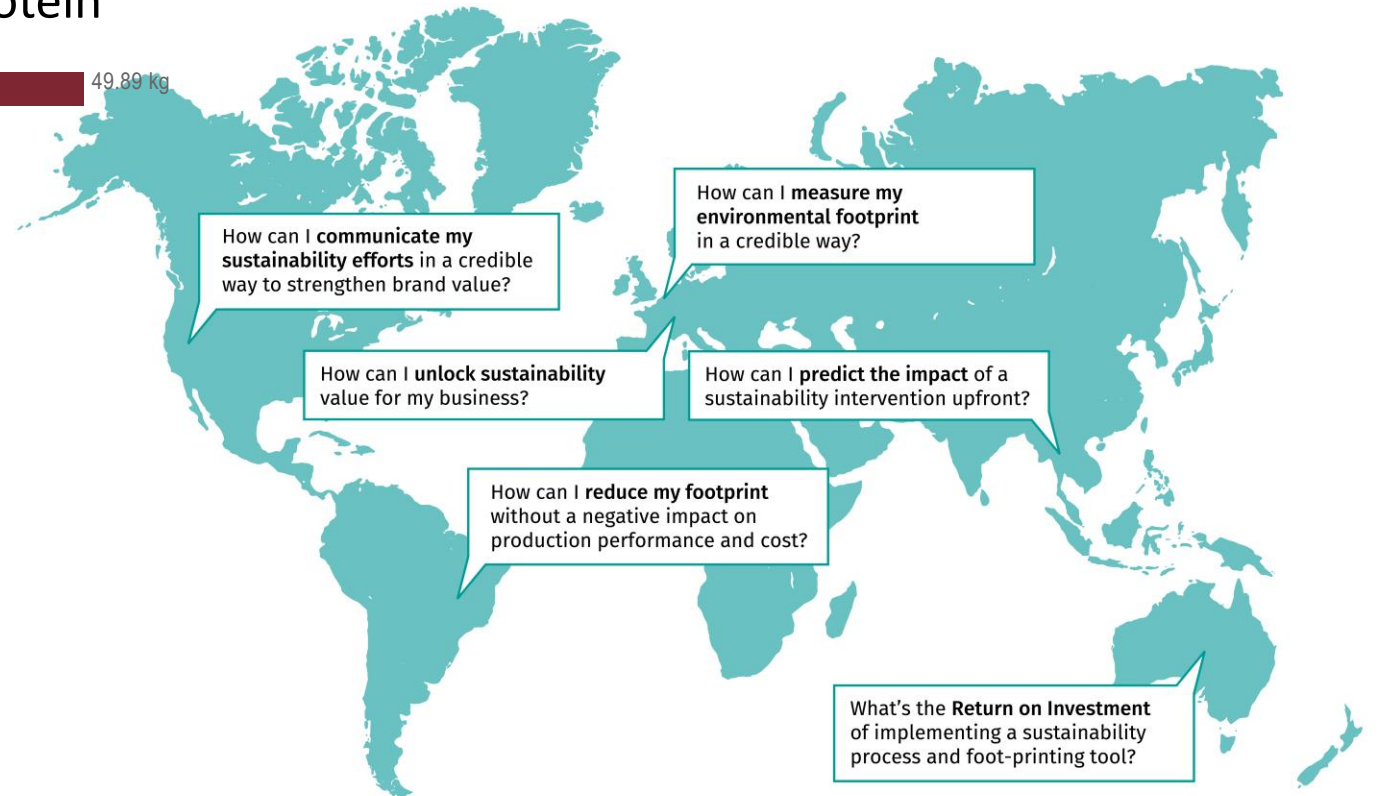
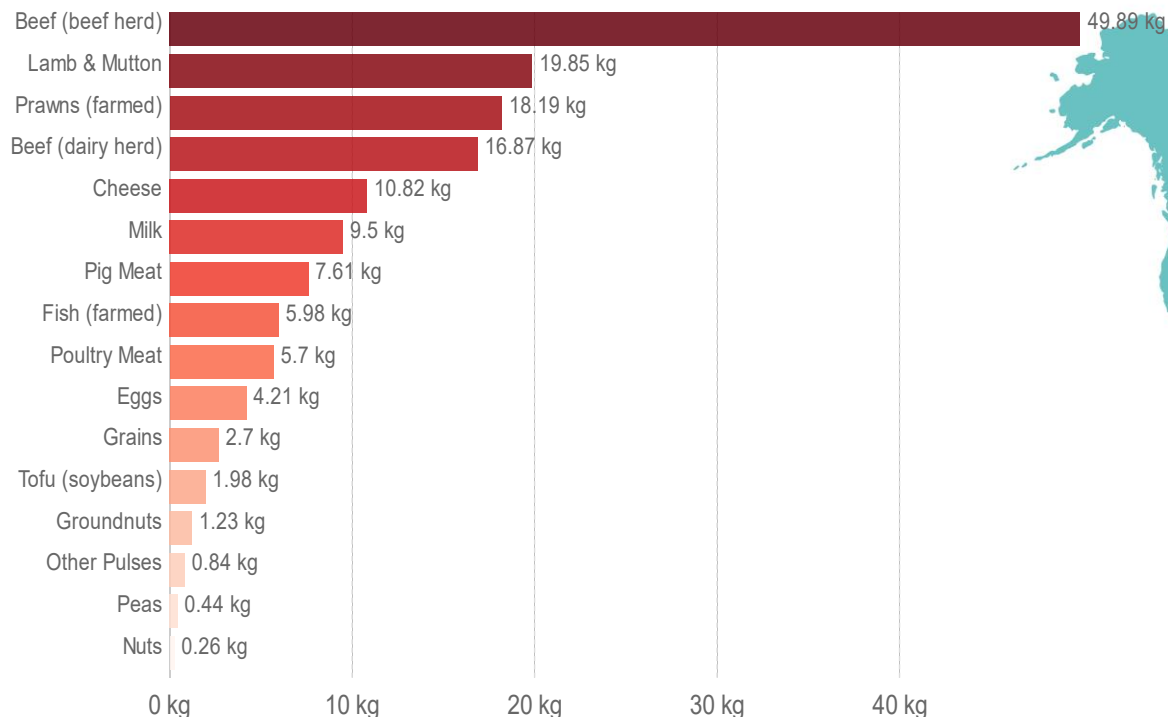


Dairy companies exploring how to move to 'carbon neutral' dairy (IDF, GDP)

Source: NYU Stern Center for Sustainable Business, Sustainable Market Share Index, July 2020. Covered 36 CPG categories that represent 40% of the total CPG market. Sustainability-marketed products delivered 54.7% of CPG value growth (2015-19) despite being 16.1% of the category value

Global averages are good - but context-based information is better

Global average GHG emissions per 100g of protein



Source: Poore & Nemecek 2018 (global average GHG emissions of food products based on a large meta-analysis of food production covering 38,700 commercially viable farms in 119 countries)

DSM: WE MAKE IT POSSIBLE



Environmental Product's Declarations: clear and science-based metrics to be able to demonstrate progress based on robust Life Cycle Analyses



DSM Feed additives, bringing greater functionality to the diet and subsequent animal performance, improved productivity and profitability, contributing substantially to reduce environmental footprints.



The **Premix Carbon Tool** covering all premix formulations showing the advantage of using DSM low carbon products & carbon cost effectiveness



Sustell™ first of its kind – intelligent sustainability service for calculating and enhancing the environmental sustainability of animal protein production on farm



Bovaer®

- Circa 14.5% of all human-caused greenhouse gas (GHG) emissions come from livestock
- Large proportion of livestock emissions come from enteric (burped) methane, as a result of the natural digestive processes of cows.
- Bovaer® supplement reduces enteric methane by approximately 30% for dairy and beef cattle as well as sheep.

Sufficient animal protein in a way that minimizes harmful emissions.

Reducing methane emission by ~30%

Supporting sustainable animal farming



Plant based proteins: delicious and nutritious

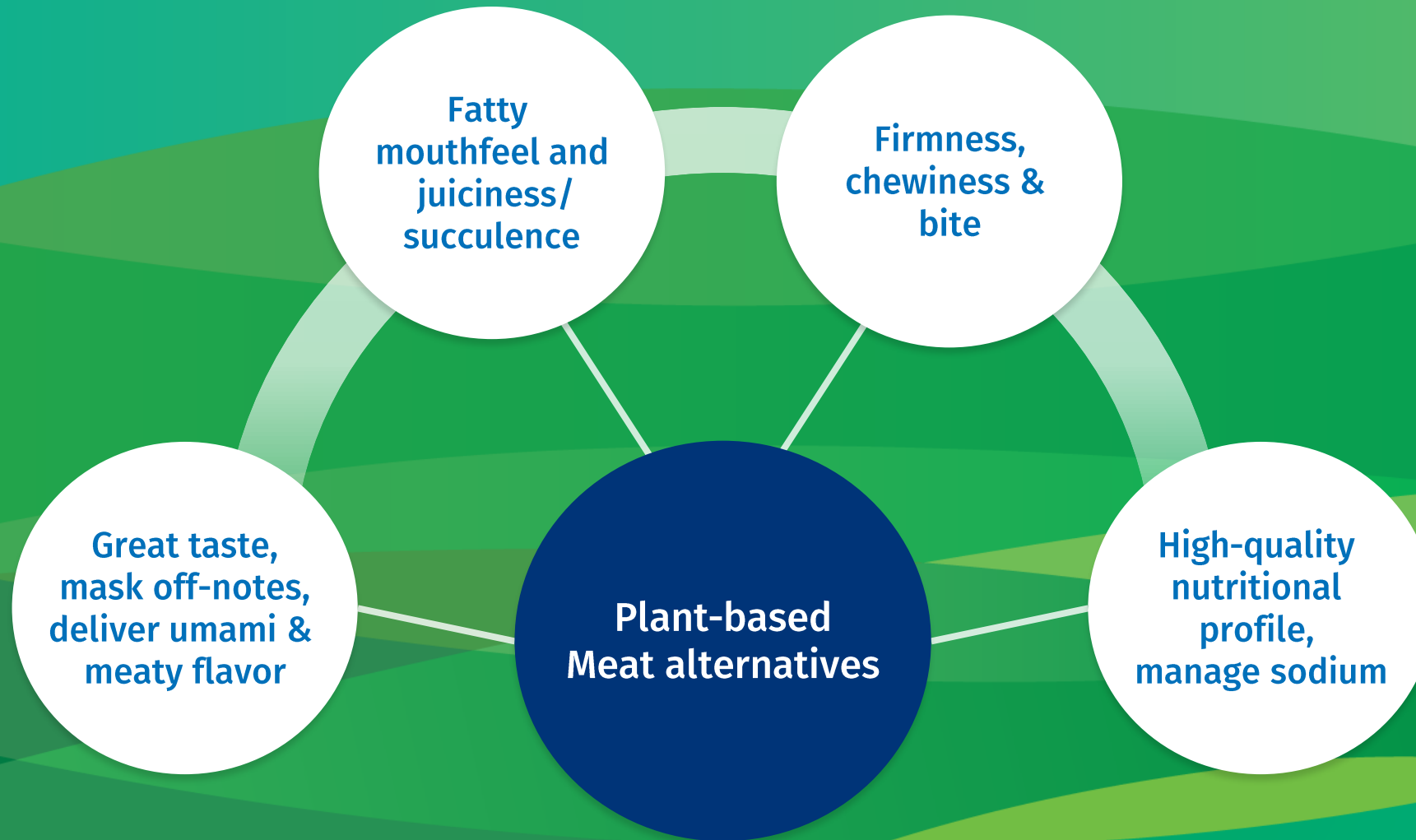
NUTRITION • HEALTH • SUSTAINABLE LIVING



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Today's challenges in meat alternatives



You win some and you lose some

Nutritional aspects of meat alternatives

Positive nutrition aspects

- Low cholesterol
- High fiber
- High phenolics, carotenoids
- High magnesium
- High vitamin C
- High vitamin B1, folate (B9)
- High unsaturated fats

Nutrients of concern

- Low vitamin A status
- Low vitamin B2, B3, B5, B6, B12
- Low vitamin D
- Low omega-3 (DHA/EPA)
- Low calcium (vegans)
- Low zinc, iron status
- Low iodine
- Low selenium

Many plant-based meat alternatives still contain high levels of sodium and fat

71% of consumers say they will check the ingredients label more often*

*Source . DSM Future Food Trends survey, n=5,000, 10 countries (Brazil, Mexico, US, China, Indonesia, Germany, Poland, Spain, UK & Turkey)

The micronutrient gap in meat alternatives is real!

Pea and soy burger low in vitamins and minerals compared to red meat

Per 100 g	Vitamin B2	Vitamin B3	Vitamin B5	Vitamin B6	Vitamin B12	Iron	Zinc	Selenium
Red meat								
Soy burger								
Pea burger								

Whatever the gap, DSMs vitamins, minerals and premixes can deliver the right nutritional profile



Fortifull™ Nutrition Guide

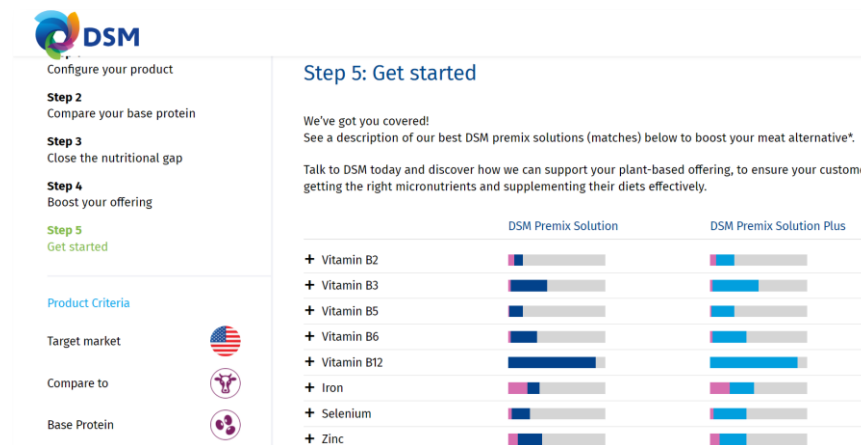
Make your plant-based alternative more nutritious and healthier

An interactive and storytelling way to show:

- the **vitamin and mineral gaps** in meat alternatives
- the **solutions** DSM has to offer to fill the gaps
- providing **ready to go premixes** for plant-based alternatives
- many **nutrition claim** opportunities

- more information: [website plant-based meat alternatives](#)
- check out: [blog about nutritional gaps in plant-based products](#)

Let's connect for a live demo!



Affordable Nutrition

Malnutrition remains an unprecedented issue around the world, preventing people from reaching their full potential.

At DSM, we provide for affordable, aspirational, accessible nutrition with different solutions and business models.

DSM. Creating brighter lives for all.



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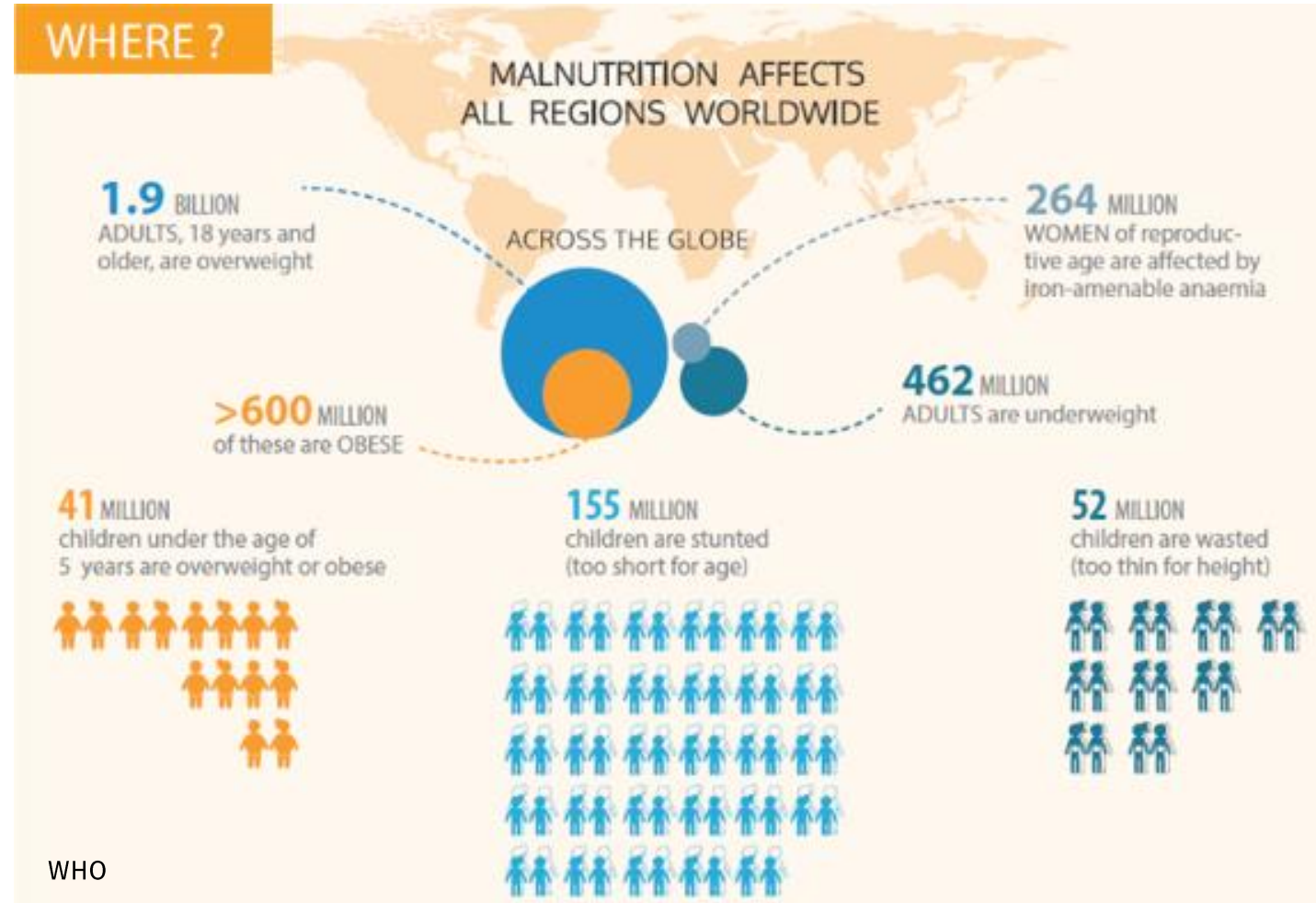
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Today's' malnutrition challenges:

Malnutrition comes in different forms:

- Undernourishment (hunger) (821 million, FAO 2018)
- Hidden hunger (micronutrient deficient) (2 billion, IFPRI (2014))
- Obesity or overweight (2.3bn, WHO 2018)
- Double-burden (overweight + micronutrient deficient)

COVID-19 and the economic downturn is expected to increase these numbers.



A photograph of a person from behind, wearing a light blue t-shirt and a patterned sarong, carrying a large, heavy sack of red onions on their back. They are standing in a room with a light brown wall, surrounded by many other similar sacks of onions. Some sacks are tied with white string. The text 'Poor diet on the job is costing countries around the world up to 20% in lost productivity.' is overlaid in white on the top right of the image.

Poor diet on the job is costing countries around the world up to 20% in lost productivity.

Rice fortification

- In many parts of the world, people are lacking micronutrients in their diet.
- Over 3 billion people use rice as their staple food, hence rice fortification offers a unique opportunity to reach many people
- DSM provides fortified kernels made from essential micronutrients such as Vit A, B1, B12, D and E and rice flour, mixed into regular rice at 0.5-2%. Fortified rice does not differ from regular rice in terms of appearance or taste
- Food fortification is stepping up amongst others in cooperation with the UN WFP.

Fighting
hidden hunger

1 USD
spend in first 1000
days of life
= 45 USD pay off

Promoting
local sourcing



Africa Improved Foods

- A Public-Private Partnership between DSM, IFC, FMO, CDC, and the Rwandan Government.
- AIF is an African social enterprise addressing the food challenges facing Africa by building resilient food systems by sourcing, manufacturing and selling nutritious affordable and accessible products which are aspirational to the consumers.
- Launched in 2016 in Rwanda, since then reached 1.6M consumers, contributed > \$ 1B to African economy, created >300 direct jobs and sourcing from > 130k smallholder farmers.
- AIF expansion focus by 2025 to establish consumer businesses in Ethiopia and Kenya.
- Looking at scaling significantly, to reach 100M+ consumers in 40+ countries across Africa by 2035.

Feeds over
1.6 million
consumers

130k
smallholder
farmers
impacted

Building Local
Climate Resilient
Value Chains



Partnering with civil society and academic partners and in coalitions to drive food systems innovation and transformational change

We cooperate in selected coalitions of industries, academics and NGOs to drive transformational change, develop and implement solutions at scale





FOODVALLEY

What are we?

Foodvalley is the international and independent platform for ground-breaking innovations that enable the transition to a sustainable food system

Mission

Shaping the future of food together

Vision

2050, the year in which our food system offers food security to ten billion people worldwide. Tasty, affordable, healthy and sustainable food with respect for animals and our planet.



**Protein
shift**



**Circular
agri food**



**Food &
Health**



OUR APPROACH



Based upon the stated vision we identify the necessary impact for society for the next 10 years on the three transitions.



Ambitions ecosystem
Our strategy defines the contribution the Foodvalley ecosystem makes to structural system change on society level and identifies the key activities of the ecosystem.



Interventions Foodvalley
Based upon the ecosystem goals and activities our strategy defines the interventions Foodvalley NL needs to take to enable the ecosystem to scale up innovations more quickly.

“We cannot be successful, nor call ourselves successful in a society that fails”

Thank you!



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