

HQP23 LATAM

SUSTAINABILITY EVOLUTION AND POSSIBLE IMPLICATIONS FOR the PORK INDUSTRY

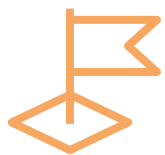
Gian Luca BALDO – Life Cycle Engineering

30th August 2023

HOW TO APPROACH THE FOOD SUSTAINABILITY ISSUE

FOOD SUSTAINABILITY IS ABOUT FEEDING THE WORLD TODAY AND IN THE FUTURE DEALING WITH:

- FOOD SECURITY [availability, access, utilization and stability] and **FOOD WASTE**
- NUTRITION AND HEALTH
- **NATURAL RESOURCES AND THE ENVIRONMENT**
- ANIMAL WELFARE



TODAY WE TRY TO DISCUSS HOW TO ADDRESS THE SUSTAINABILITY ISSUE IN THE PORK INDUSTRY STARTING FROM PUBLIC AGENCIES AND BUSINESS/SECTOR ASSOCIATIONS POSITIONS



HUNGER

CLIMATE

RESPONSIBLE
CONSUMPTION AND
PRODUCTION

SDG 2.4 BY 2030, ENSURE **SUSTAINABLE FOOD PRODUCTION** SYSTEMS AND IMPLEMENT **RESILIENT AGRICULTURAL PRACTICES** THAT INCREASE PRODUCTIVITY AND PRODUCTION, THAT HELP MAINTAIN ECOSYSTEMS, THAT STRENGTHEN CAPACITY FOR ADAPTATION TO CLIMATE CHANGE, EXTREME WEATHER, DROUGHT, FLOODING AND OTHER DISASTERS AND THAT PROGRESSIVELY IMPROVE LAND AND SOIL QUALITY

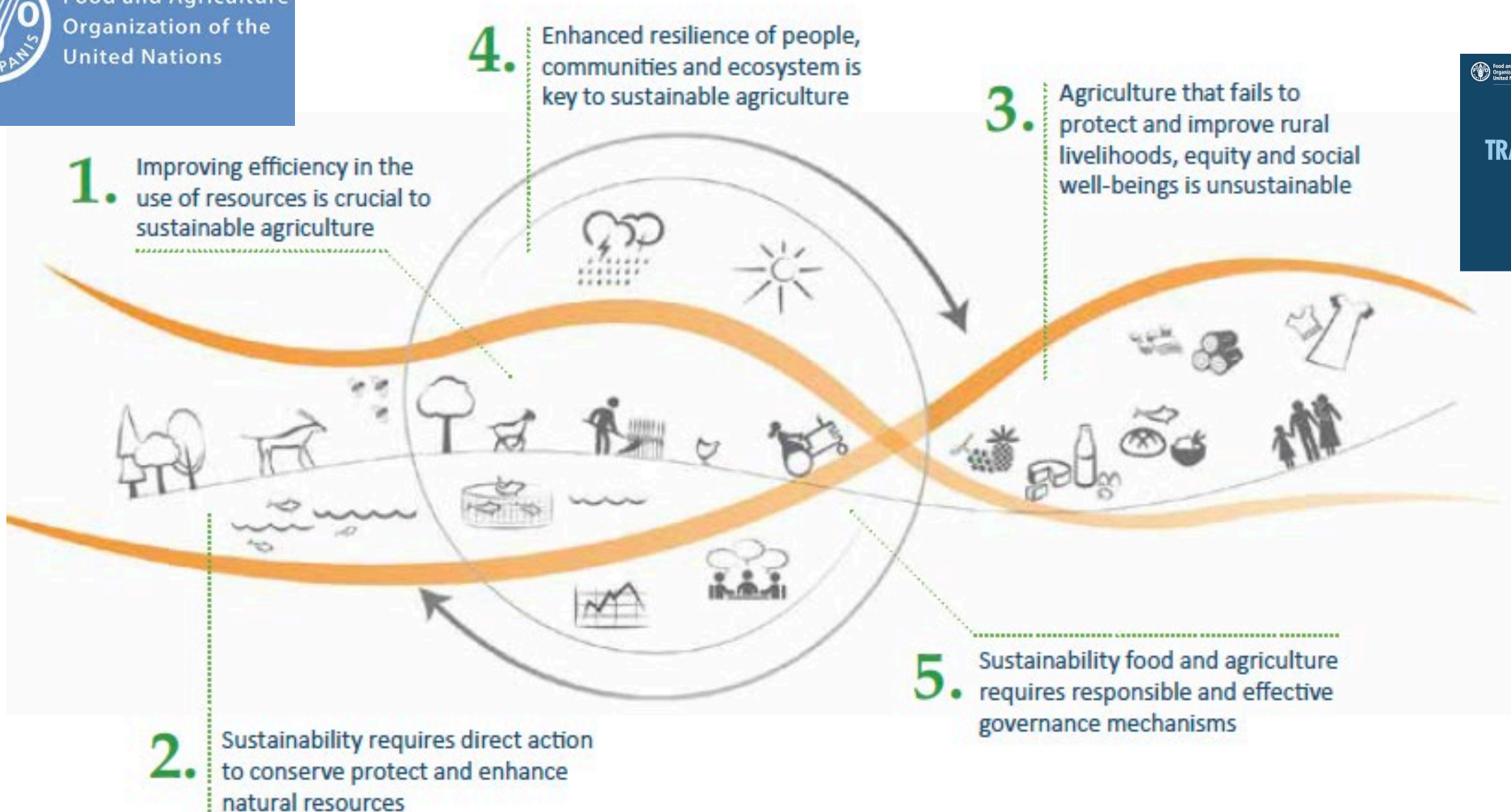
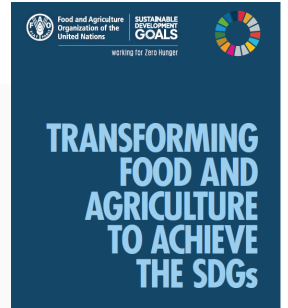


End hunger, achieve food security and improved nutrition and promote sustainable agriculture



Food and Agriculture
Organization of the
United Nations

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5 PRINCIPLES OF SUSTAINABLE FOOD AND AGRICULTURE, SOURCE FAO



Environmental Impacts of U.S. Food Waste:

What resources go into a year of food loss and waste in the U.S.?

*excluding impacts of waste management, such as landfill methane emissions



Greenhouse gas emissions of more than 42 coal-fired power plants

Enough water and energy to supply more than 50 million homes



The **amount of fertilizer** used in the U.S. to grow all plant-based foods for U.S. human consumption

An **area of agricultural land** equal to California and New York



Learn more: www.epa.gov/land-research/farm-kitchen-environmental-impacts-us-food-waste

FOR **US EPA**, SUSTAINABLE MANAGEMENT OF FOOD IS A SYSTEMATIC APPROACH THAT SEEKS TO REDUCE WASTED FOOD AND ITS ASSOCIATED IMPACTS OVER THE ENTIRE LIFE CYCLE.

TOWARDS SUSTAINABLE FOOD CONSUMPTION [JULY22]



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THIS IS A MAIN PRIORITY AND KEY ACTION FOR EU AND UN 2030 AGENDA ON SUSTAINABLE DEVELOPMENT GOALS (SDGS)

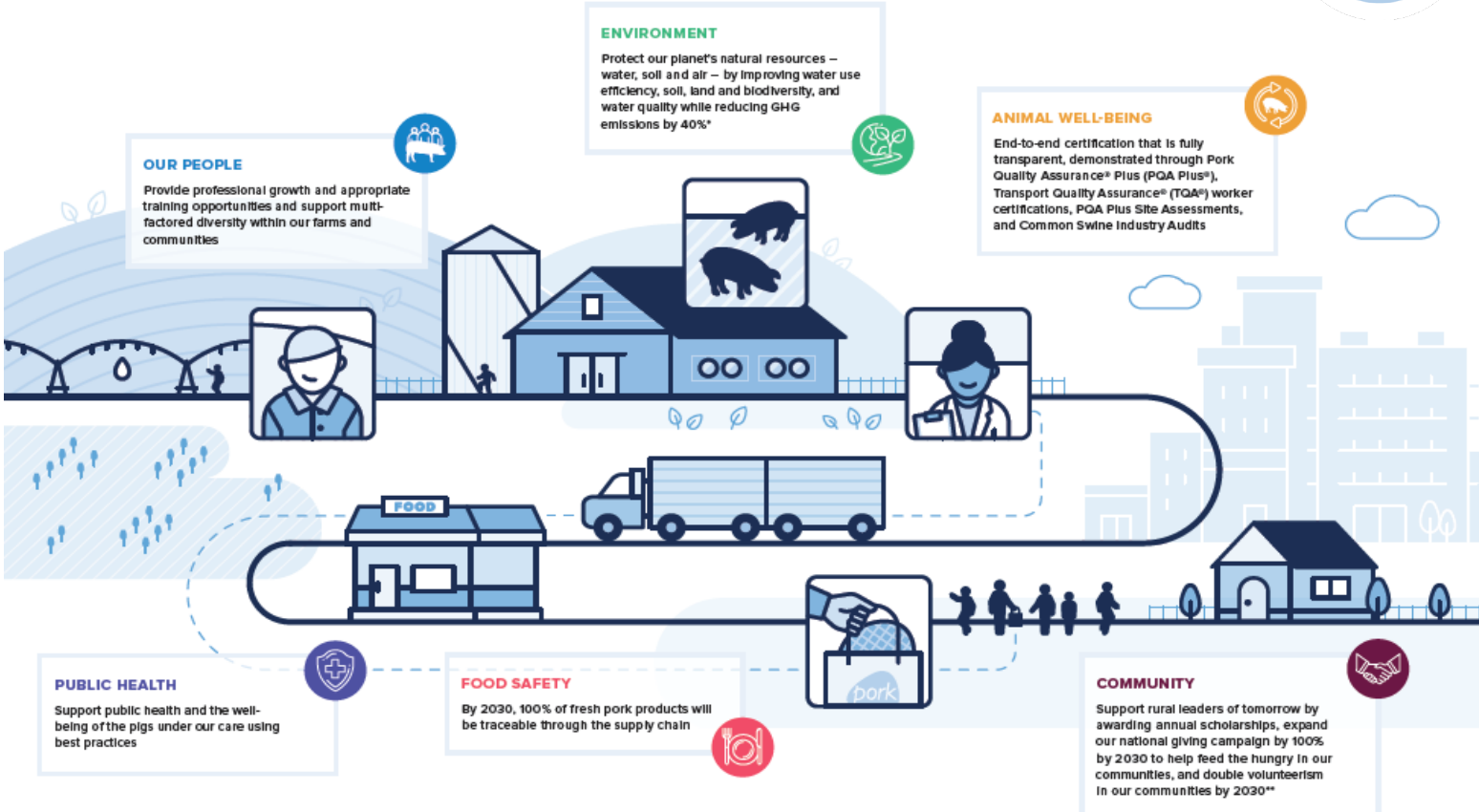
FOOD SYSTEMS ARE UNDER PRESSURE FROM BOTH CLIMATE CHANGE AND NON-CLIMATE STRESSORS

REGARDING **FOOD CONSUMPTION PATTERNS**, IN THE EU THE AVERAGE INTAKES OF ENERGY, RED MEAT, SUGARS, SALT AND FATS **CONTINUE TO EXCEED RECOMMENDATIONS**

LIVESTOCK PRODUCTION IS ASSOCIATED WITH GREENHOUSE GAS EMISSIONS, ANIMAL WELFARE ISSUES, IMPACT ON LAND USE, ETC.

OTHER INITIATIVES: Sustainable Agriculture Initiative Platform

The Sustainable Pork Supply Chain



U.S. Pork Industry

A COLLECTIVE STEP FORWARD FOR PEOPLE, PIGS AND THE PLANET

2021 Sustainability Report



* based on 2015 baseline
** based on 2019 baseline

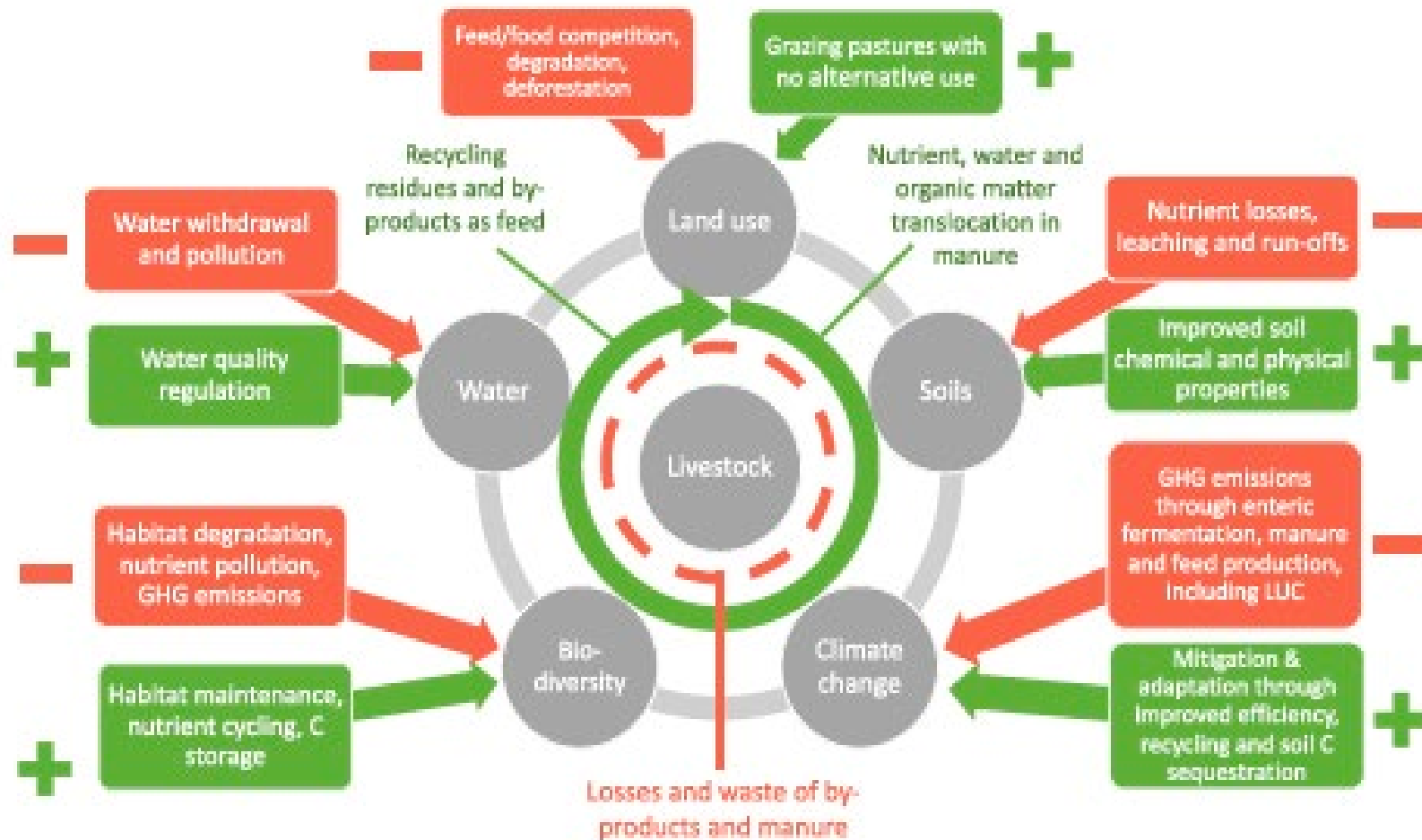


INTERACTIONS BETWEEN LIVESTOCK AND THE ENVIRONMENT

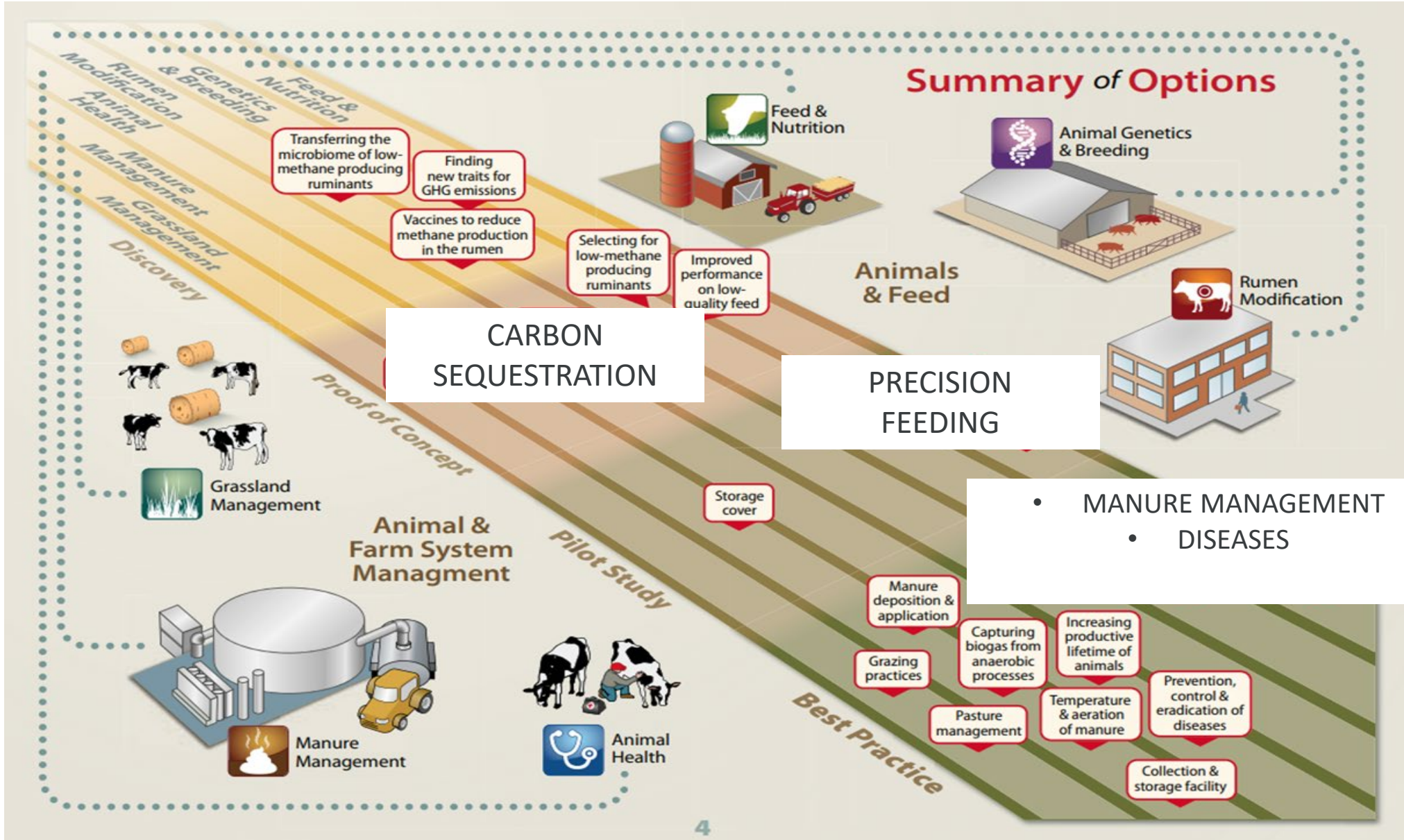
MAIN POSITIVE AND NEGATIVE INTERACTIONS BETWEEN LIVESTOCK AND THE ENVIRONMENT



Positive and real attention in tropical regions allows and promotes strategic investments in diets. Performance of feed for optimal health and productivity. Feeding systems and their growth together. Share these and other in activities.



HOW TO PROCEED?



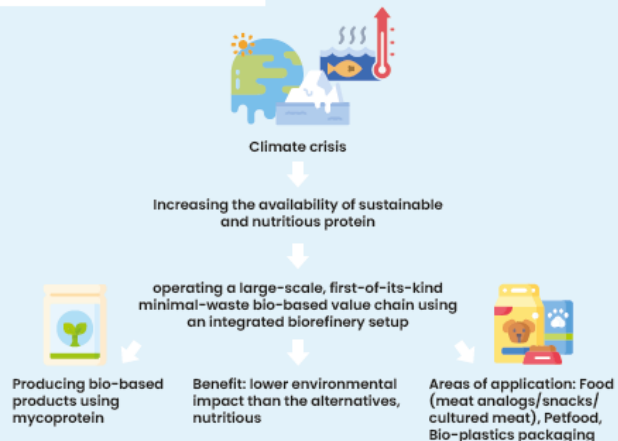
SOME IMPROVEMENT OPTIONS

- **IMPROVED GROWING PRACTICE** and intensification **OF CEREAL PRODUCTION** where yields are low today (to reduce land use and ammonia emissions);
- **OPTIMIZED PROTEIN FEEDING IN PIG FARMING** (to reduce ammonia emissions and nitrate leaching);
- Tightening the **RULES OF MANURE APPLICATION** (to reduce nitrate leaching and N₂O emissions);
- **BIOGASIFICATION OF MANURE FROM PIGS** (to reduce methane and N₂O emissions);
- **POWER SAVING IN FARMING**
- Household **MEAL PLANNING TOOLS** (to reduce food losses and all environmental interventions throughout the life cycle).

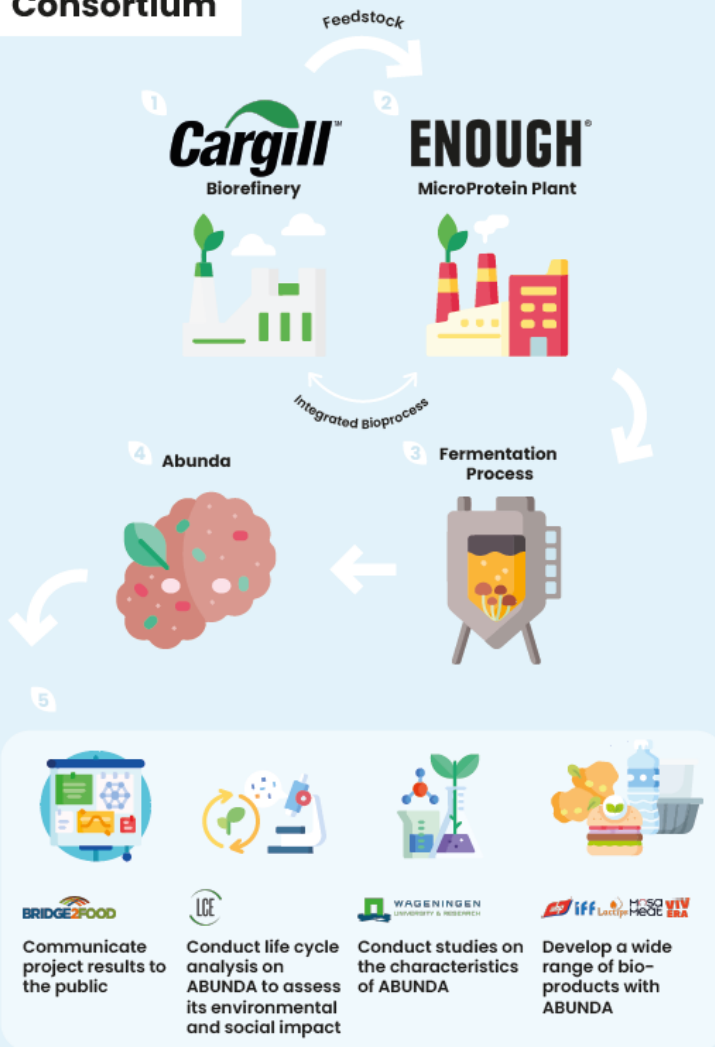
DEMAND GROWS FOR ALTERNATIVES

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Project Overview



Consortium



Project Facts

- Mycoprotein**
 - Rich in protein & fibre
 - Contains amino acids
 - Low in saturated fat & salt
 - No cholesterol
- Project Coordinator**
3FBIO
- CBE JU Funding**
€17M
- Flagship Plant Site**
in Sas van Gent, NL
- Capacity**
10,000 tonnes p.a. and expanding
- Project Partners & Jobs created**
 - 11 Partners
 - 35 direct and 150 indirect Jobs created

PLENITUDE™
Making More with Less

<https://www.plenitude-bbi.com/>

Timeline

- 2019 Oct**
Project starts
- 2021 Sep**
Sas van Gent, NL
Ground-breaking of flagship plant
- 2022 Sep**
Sas van Gent, NL
Ribbon-cutting
- 2023 Apr**
Turin, IT
Food Truck Showcase

DEMAND GROWS FOR ALTERNATIVES

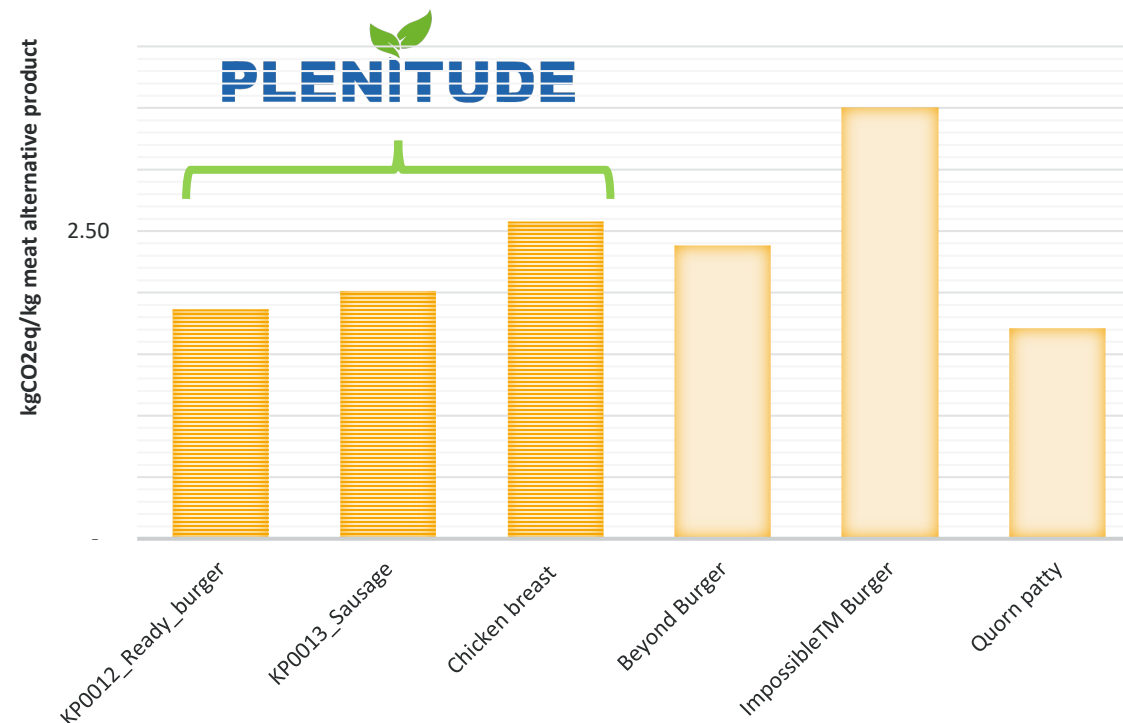
JN
THE JOURNAL OF NUTRITION



FUNGAL PROTEIN (ALSO CALLED **MYCOPROTEIN**) IS A HIGH-QUALITY PROTEIN-RICH FOOD PRODUCED BY FERMENTATION. MYCOPROTEIN IS RICH IN PROTEIN AND FIBER; CAN BE RICH IN ZINC, MAGNESIUM, CALCIUM, AND VITAMIN B12; AND HAS BEEN ASSOCIATED WITH REDUCED BLOOD CHOLESTEROL CONCENTRATIONS AND SHORT-TERM ENERGY INTAKE.

LIFE-CYCLE ANALYSES ARE LIMITED BUT SUGGEST THAT MYCOPROTEIN HAS A LOWER ENVIRONMENTAL IMPACT THAN BEEF AND A SIMILAR IMPACT AS CHICKEN AND PORK

Preliminary GWP data of some meat-alternative recipes



GOALS AND METRICS

Goals and metrics are necessary to put in practice any strategy.

For instance, if «low-carbon» pork production is a goal, the entire process shall be analysed to be auditable, certifiable and disseminated.



Declaração Ambiental de Produto de acordo com a ISO 14025:

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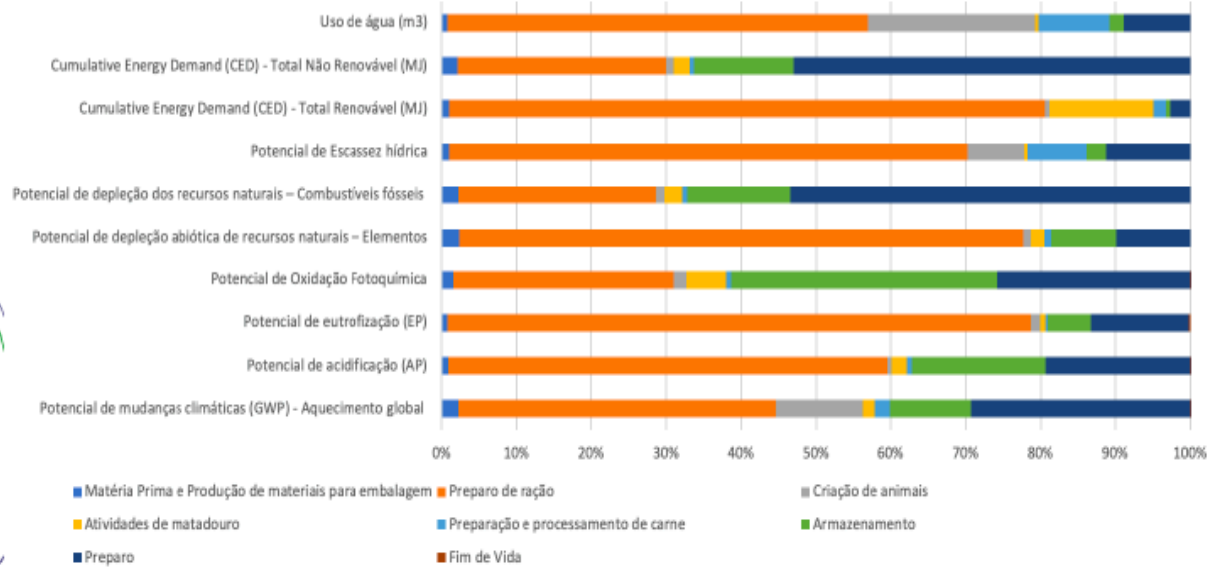
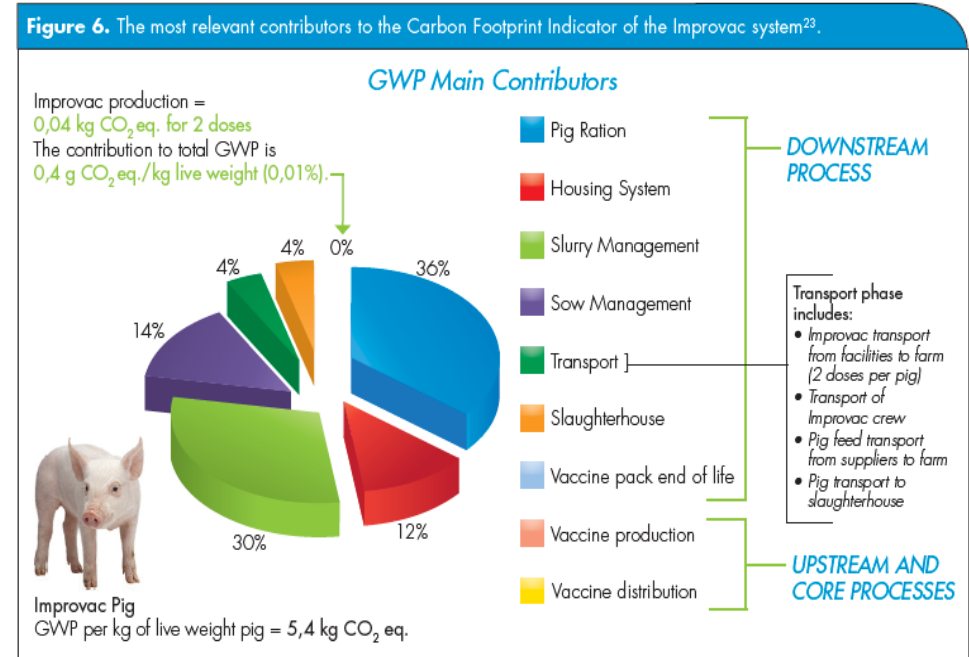


Gráfico 1 – Resultados das contribuições relativas das etapas do ciclo de vida para os potenciais impactos ambientais da sobrepaleta



GOALS AND METRICS

A LCA and EPD case study on vaccine production (*immunological product that effectively and safely reduces boar taint*) and pork meat production chain.



LCA and EPD are perfect tool to verify any potential improvements to your process and to communicate/disseminate results.

KEY POINTS

- ALL PUBLIC AGENCIES AND BODIES ARE ADDRESSING THE FOOD SUSTAINABILITY ISSUE WITH INITIATIVES THAT INTERACT WITH YOUR BUSINESS
- SUSTAINABILITY IS ABOUT MORE THAN JUST GREENHOUSE GAS EMISSIONS
- SUSTAINABILITY IS A CONTINUOUS IMPROVEMENT JOURNEY THAT REQUIRES TECHNICAL COMPETENCES AND COMMUNICATION SKILLS
- COMPLETE SUPPLY CHAIN SUSTAINABILITY REQUIRES PARTNERSHIP AMONG COMPANIES
- TO SET GOALS AND USE INTERNATIONALLY RECOGNISED METRICS IN A LIFE-CYCLE PERSPECTIVE IS LIKELY THE RIGHT APPROACH TO ADDRESS SUSTAINABILITY

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THANK YOU FOR
YOUR ATTENTION!

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