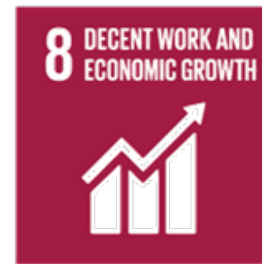


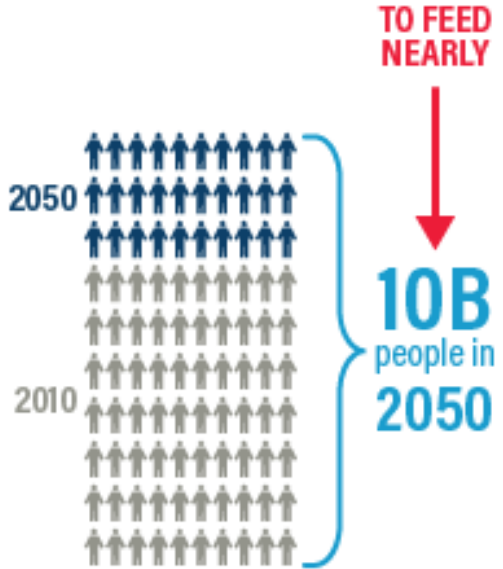
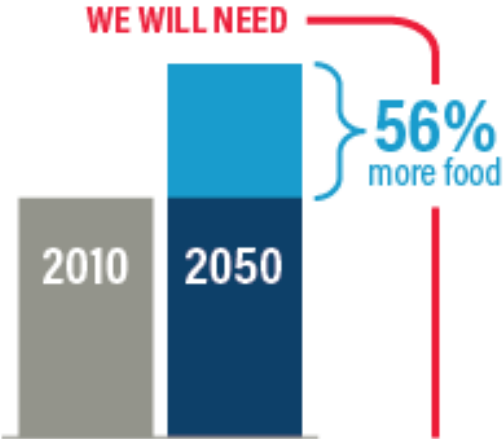
Sustainability of the food systems and the role of Codex



Dr. Marta Hugas

Sustainable food future by 2050

How do we feed 10 billion people...



...without using more land...

WE NEED TO PREVENT AGRICULTURE FROM EXPANDING



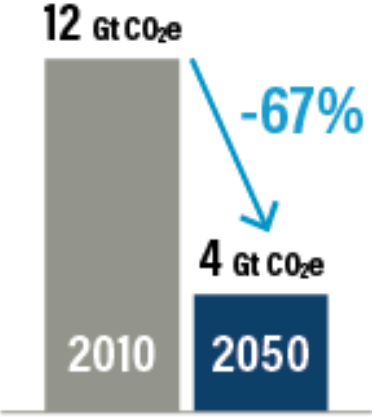
we currently use **~50%** of the world's vegetated land for agriculture



TO SAVE AN AREA OF FORESTS NEARLY 2X the size of India

...while lowering emissions?

WE CAN LOWER EMISSIONS



WITH INNOVATIVE TECHNOLOGY LIKE



Improved feeds

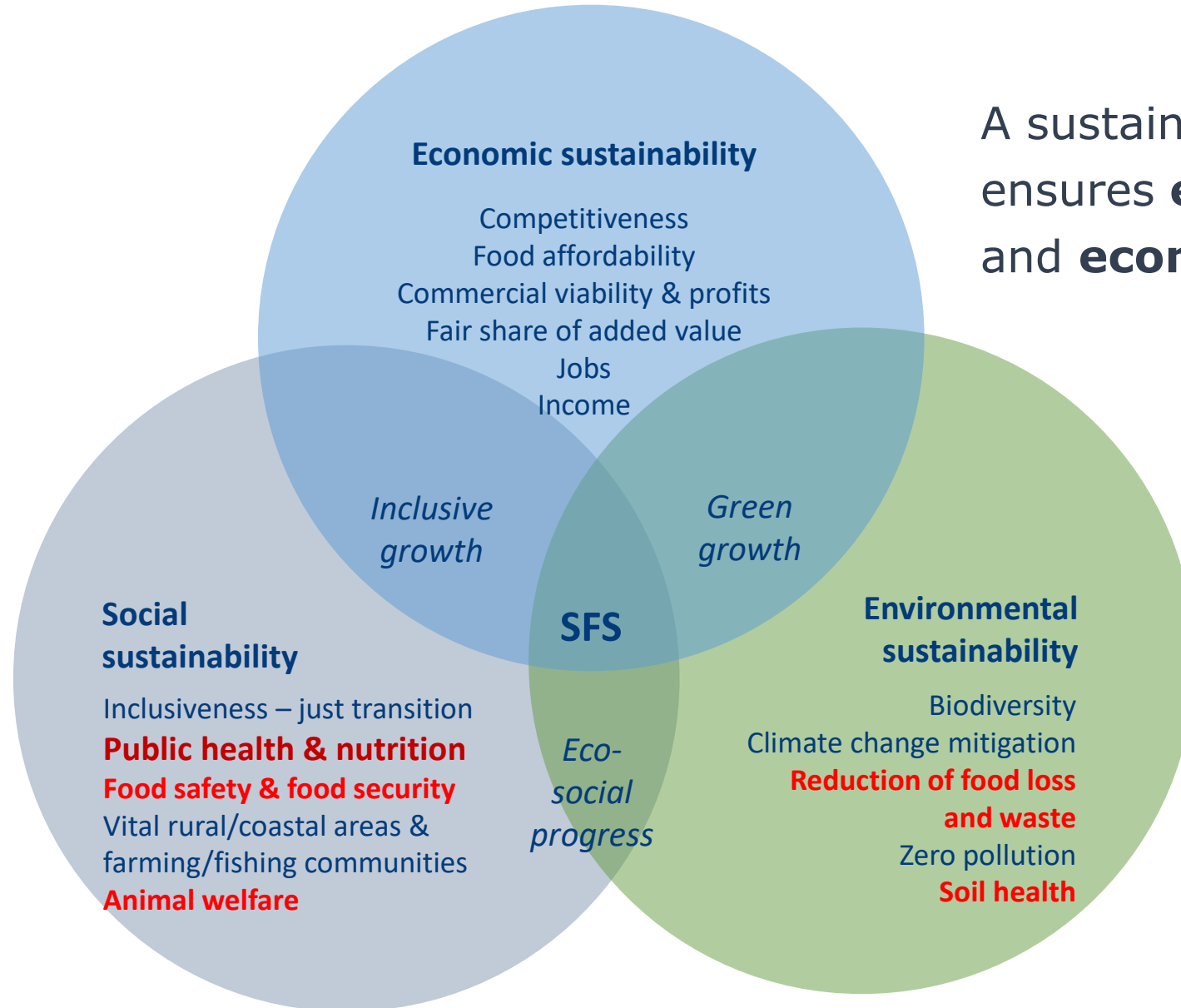
Plant-based burgers



Resilient crop breeds



Sustainable food systems for sustainable societies



A sustainable food system (SFS) ensures **environmental, social and economic sustainability**

Healthy diet definition

Healthy Diet: A Definition for the United Nations Food Systems Summit 2021

Lynnette M Neufeld^[1], Sheryl Hendriks^[2], Marta Hugas^[3]

A healthy diet is health-promoting and disease-preventing.

It provides adequacy, without excess, of nutrients and health-promoting substances from nutritious foods and avoids the consumption of health-harming substances

UN FOOD SYSTEMS PRIORITIES from Scientific perspective

- From von Braun et al, Sept 2021 Nature:
 - 1. **End hunger and improve diets**
 - 2. De-risk food systems
 - 3. Protect equality and rights
 - 4. **Boost bio-science**
 - 5. Protect resources
 - 6. **Sustain aquatic foods**
 - 7. Harness digital technologies

F2F Strategy: Food Sustainability Challenges

SOCIAL SUSTAINABILITY (INCL. HEALTH)



Healthier diets –
reduce
overweight



Improve
animal
welfare



Social rights
workers in food
chain



Food
affordability

ENVIRONMENTAL SUSTAINABILITY



Tackle climate
change



Protect the
environment



Preserve
biodiversity



Reduce food
losses and waste



Circular bio-based
economy

ECONOMIC SUSTAINABILITY



Fairer incomes for farmers,
fishers & aquaculture
producers



Just
transition



New business & job
opportunities

*** FOOD SAFETY RELEVANT**

How to address the food safety challenges ahead ?

F2F CHALLENGES

ECONOMIC SUSTAINABILITY



ENVIRONMENTAL SUSTAINABILITY



GFL - scientific areas

Plant health
Plant protection products
GMO
Animal health and welfare
Zoonoses, food-borne diseases
Chemical contaminants
Chemical residues
Occurrence data
Animal feed
Food ingredients
Packaging
Food consumption data
Dietary Reference Values
Novel Food
Health claims
Allergies
Emerging risks



SOCIAL SUSTAINABILITY (INCL. HEALTH)

ONE HEALTH APPROACH



- Are we ready to integrate the ONE HEALTH approach into our scientific advice?
 - Methodologies
 - Data streams
 -

Challenge: assessing innovation e.g. Alternative Proteins



Animal-derived alternative proteins

Insects

Cultured meat

Non-animal alternative proteins

Plants

Algae



Challenge: Reducing food waste in Europe

F2F intends to halve per capita food waste at retail and consumer levels by 2030 and provide legally binding targets across the EU.

- A Commission study published in February 2018 estimated that up to 10% of the 88 million tonnes of food waste generated annually in the EU is linked to date marking.
- An immediate priority is the development of guidance in order to ensure more consistent date marking and related food information practices.
- Date marking is particularly relevant for food waste prevention for the categories dairy products, fruit juices, chilled meat and fish.



Challenge: Microplastics in food - a topic of increasing concern

Addressing knowledge gaps requires advances in:

- Analytical methods for micro- and nanoplastics
- Exposure characterisation of humans to micro- and nanoplastics
- Hazard identification and characterisation for micro- and nanoplastics, as they may be in the food chain



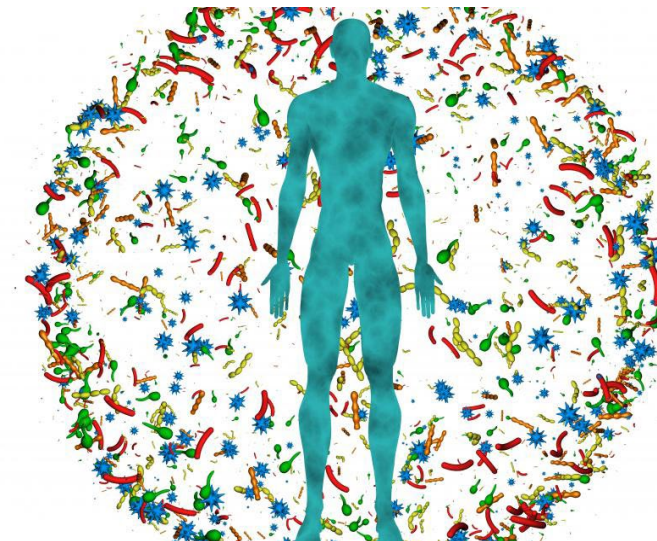
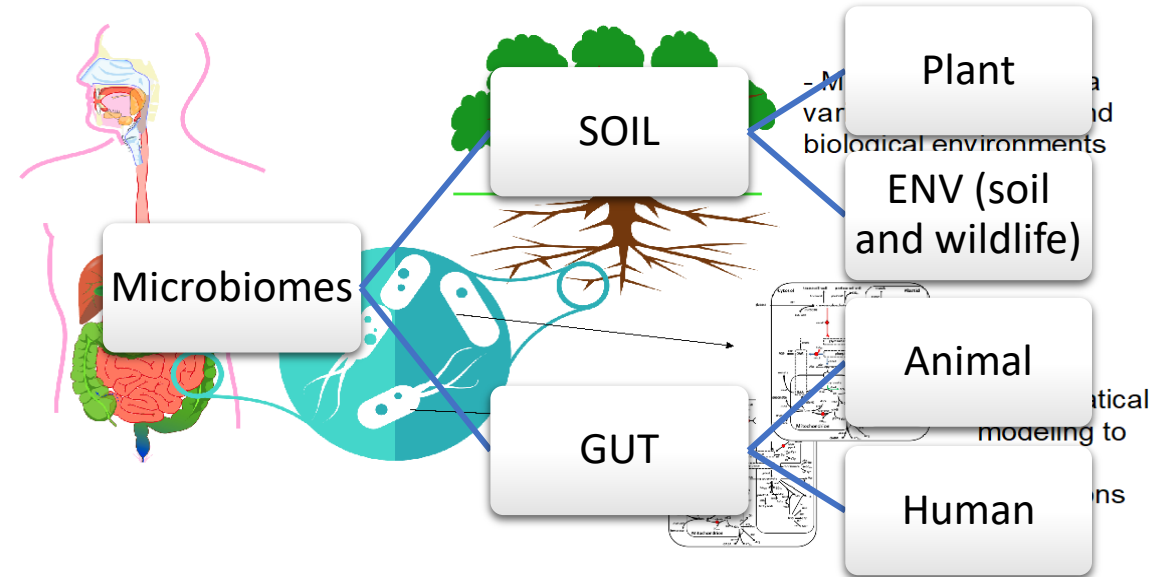
Challenge: Microbiomes and Risk Assessment

Capacity building on evaluating the impact on/by:

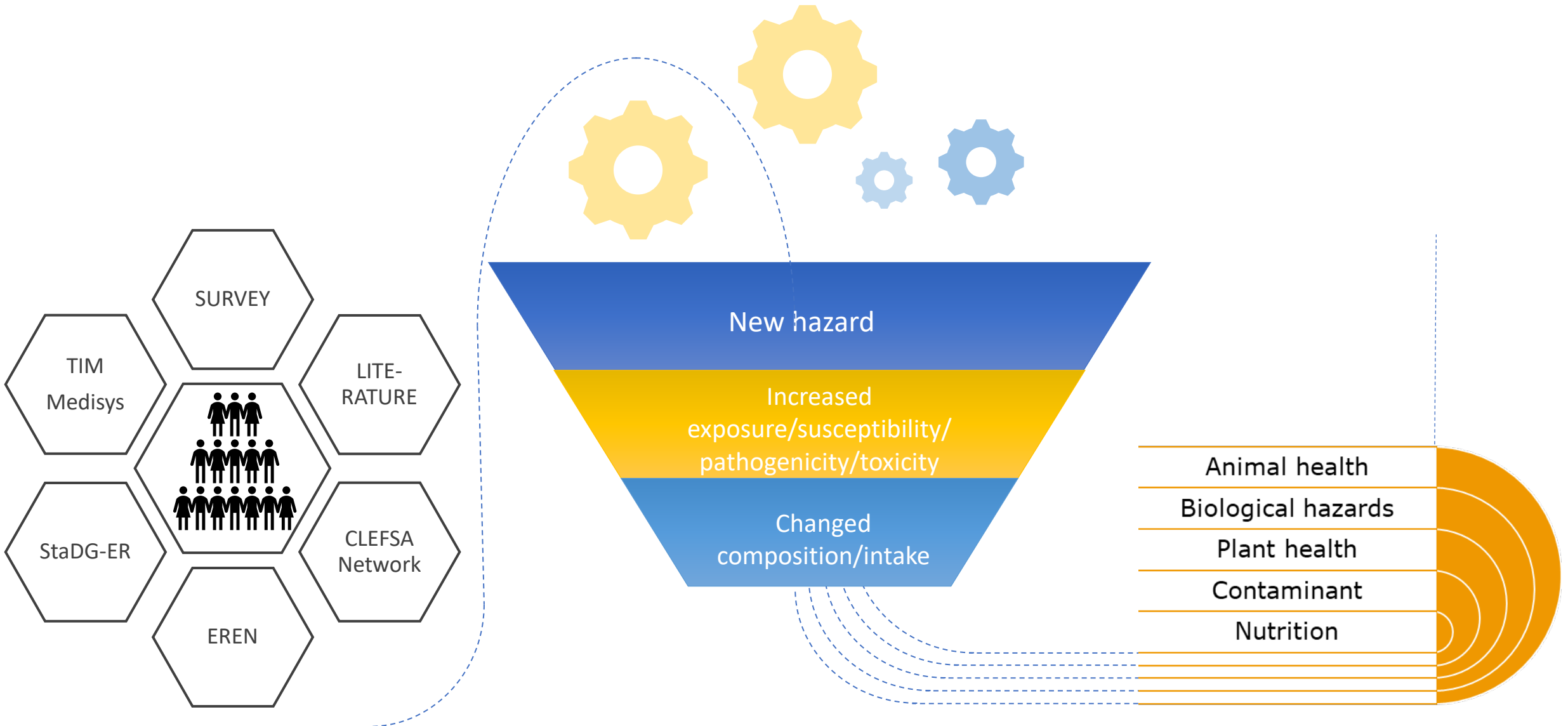
- Gastrointestinal tract microbiomes (human and domestic animals) in assessments.
- Environmental microbiomes (plants, wildlife, soil) in assessments.

New knowledge on human microbiome on Risk Assessment

- **Research** beginning to elucidate associations between perturbations in the human microbiome and human disease and factors that might be responsible for perturbations
- Human microbiome could be **affected** by environmental chemicals and/or **modulate** exposure to environmental chemicals. Example link between microbes and chemicals
- Session on Microbiomes at the 2022 ONE conference in June in Brussels



Challenge: Emerging risks Identification



Challenge: AMR

Work in Codex

- **Code of Practice to Minimise and Contain AMR**
(CXC 61-2005) **Revised 2021**
- **Guidelines on Risk Analysis of Foodborne AMR**
(CXG 77/2011)
- **NEW: Guidelines on integrated monitoring and surveillance of foodborne Antimicrobial Resistance** (CXG 94-2021)



Role of CODEX on achieving Sustainability?

- Essential role in supporting safety and quality of our food for health protection and enabling access to markets and economic income.
- Providing a platform to discuss emerging risks, methodologies, science needs etc.
- Should Codex be adjusting on ensuring sustainability when setting standards in order to ensure sustainability?
 - Codex does move with the time – as shown by AMR, One Health, nanotechnology and so on ... so does it need to reflect on whether there are any adjustments needed in light of the importance placed now on sustainable food systems.
 - Food security has been considered when setting MRLs, MLs – avoiding overly stringent MLs/Mrls which may affect availability of food supplies, with not added healthy protection gain.

Role of CODEX on achieving Sustainability?

- Sustainability goes much beyond that CODEX remit
 - How to assess sustainability?
 - Metrics needed?
 - Standards?
 - Guidelines?
 - Policies?
 - Impact on trade?
 - Currently, safety assessment focused on final product:
 - How to integrate the whole food production chain into the assessment?
 - Is it needed? E.g. life cycle assessment

Challenge: Communicating to the public

- The **complexity** of the science behind risk assessments
- The **coordination** of messages
- **Audience**-driven communications
- Communication **overload**
- **Misinformation** in the digital age



MANY THANKS FOR YOUR ATTENTION