

Delivering on EU Food Safety and Nutrition in 2050 -

Future challenges and policy preparedness



FOOD SAFETY AND NUTRITION

➤ **OBJECTIVE OF EU POLICY AND LEGISLATIVE FRAMEWORK:**

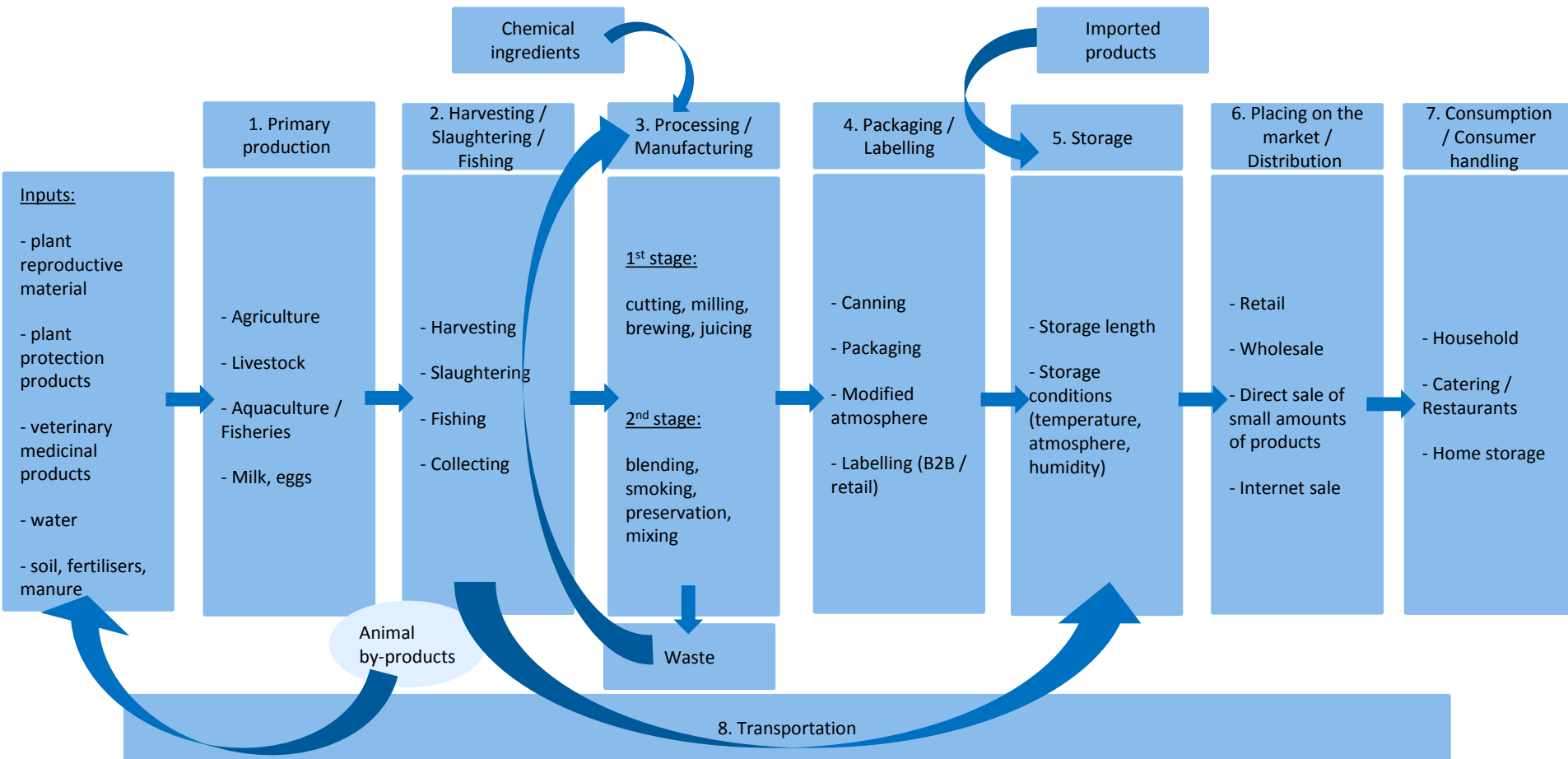
*„Provision of safe, nutritious,
high quality and affordable food“*

- *High variety of foods available in EU*
- *Food was never so safe as today*
- *Single market, harmonised approach, shared legislative framework*
- *Trends: more information, lower limits, stronger control, more technology*

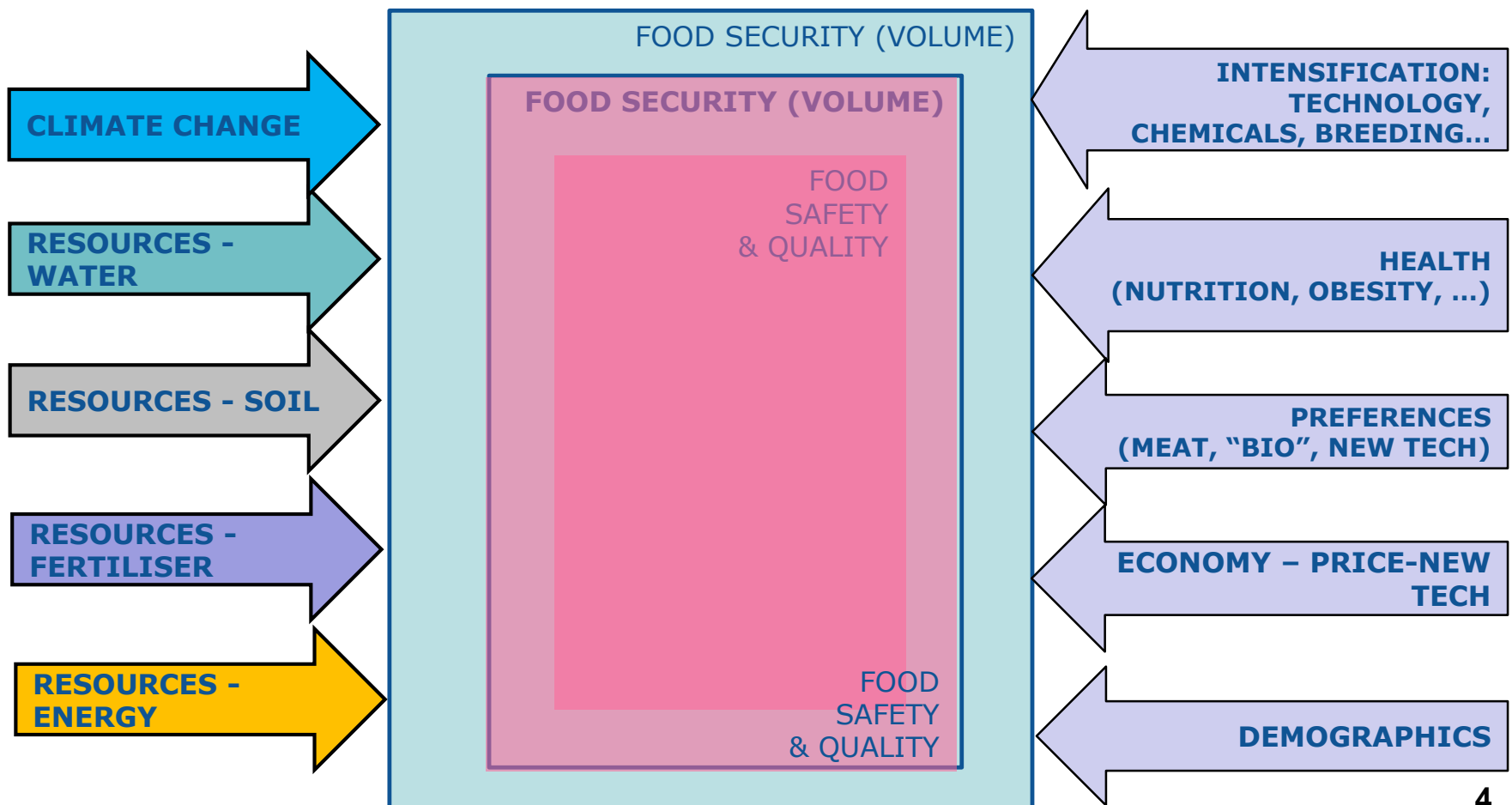


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THE FOOD CHAIN SYSTEM OVERVIEW



FOOD SAFETY IN FUTURE – IS IT FOR GRANTED?



IS OUR FOOD SYSTEM FIT FOR FUTURE CHALLENGES?

- *Food security studies/foresights: gap in food safety („integral part“)*
- *Are we sure that our direction/development is right and sustainable?*
- *Foresight analysis on “Delivering on Food Safety and Nutrition in 2050” to:*
 - *Identify the **critical challenges***
 - *Assess their **impact on food (safety) policy framework***
 - *Define the **potentially critical changes necessary** to maintaining the standards of food safety and nutrition*
 - *Provide insight and guidance towards the development of **future policy responses and research needed** to support EU policy response to these challenges*

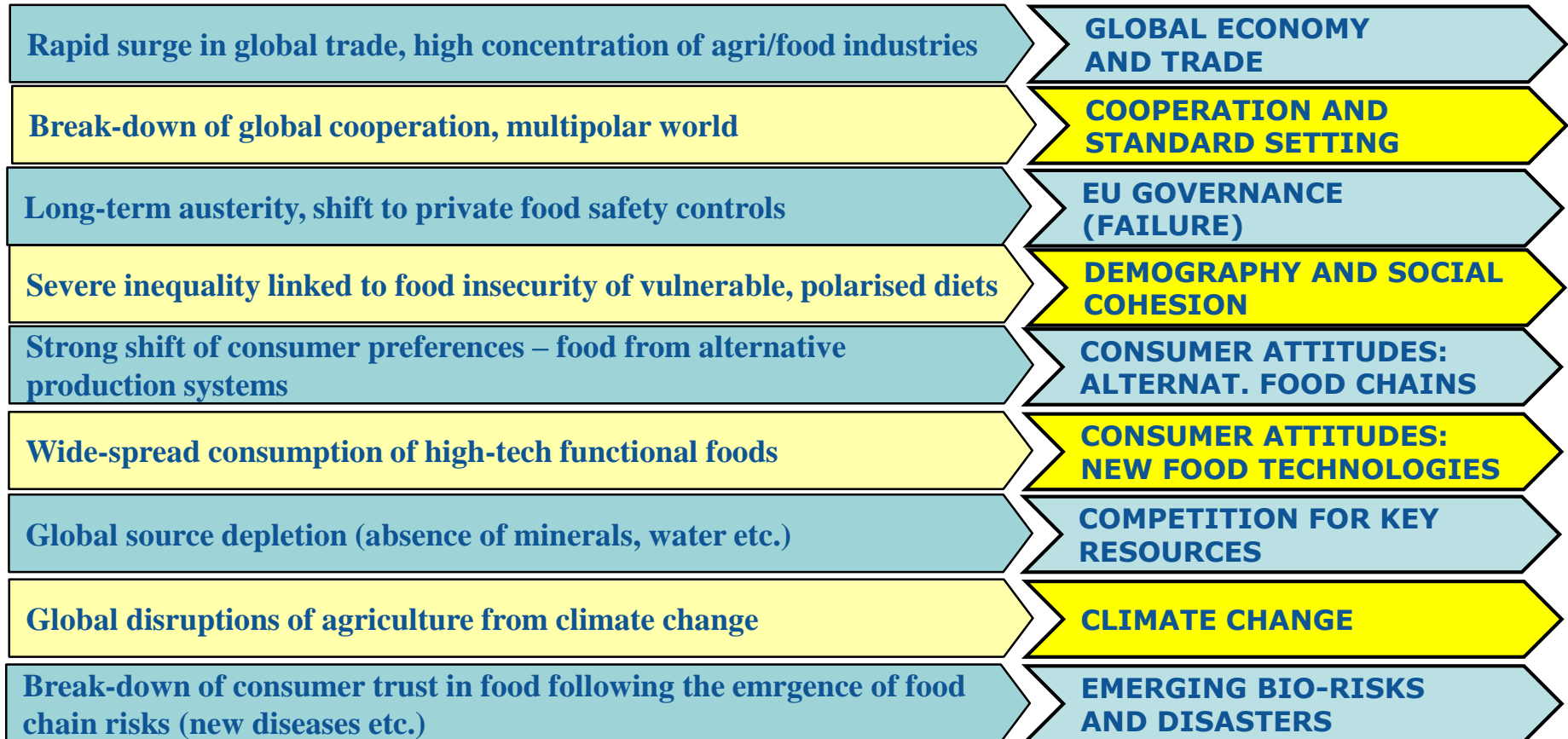
PHASE I OF THE FORESIGHT ANALYSIS

*Scoping study on „**Delivering on EU Food Safety and Nutrition in 2050-Scenarios of future change and policy responses identifynd critical drivers and future scenarios**“*

➤ **METHODOLOGY/APPROACH:**

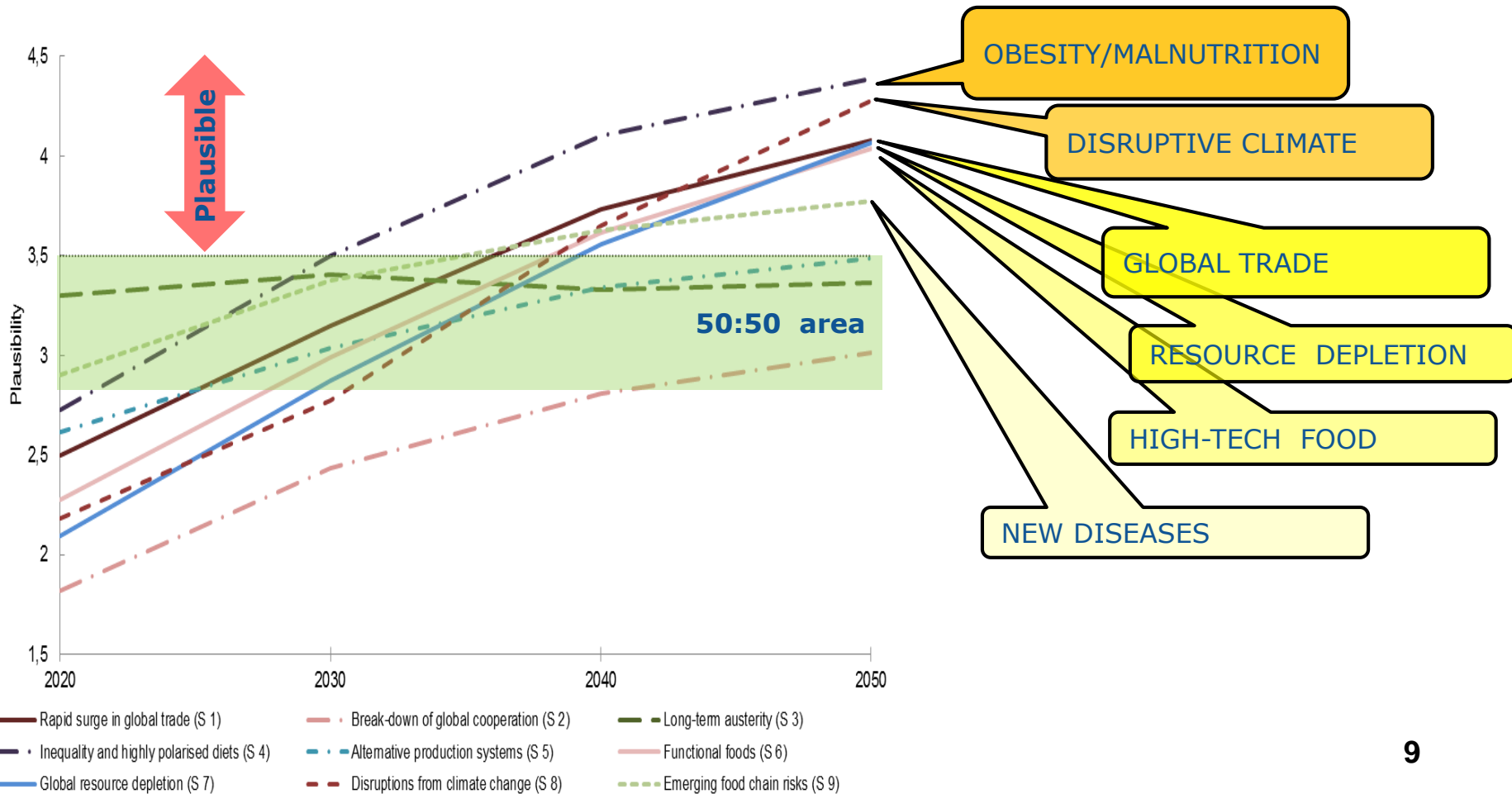
- *Out of box approach, no desired results pre-defined, disruptive futures considered*
- *Identification of drivers and pre-scenarios*
- *Test of plausibility*
- *Definition of unknown – right questions for further work and for research*

PHASE I: Drivers and pre-scenarios



PLAUSIBILITY OF PRE-SCENARIOS

(1=not plausible to 6=highly plausible)

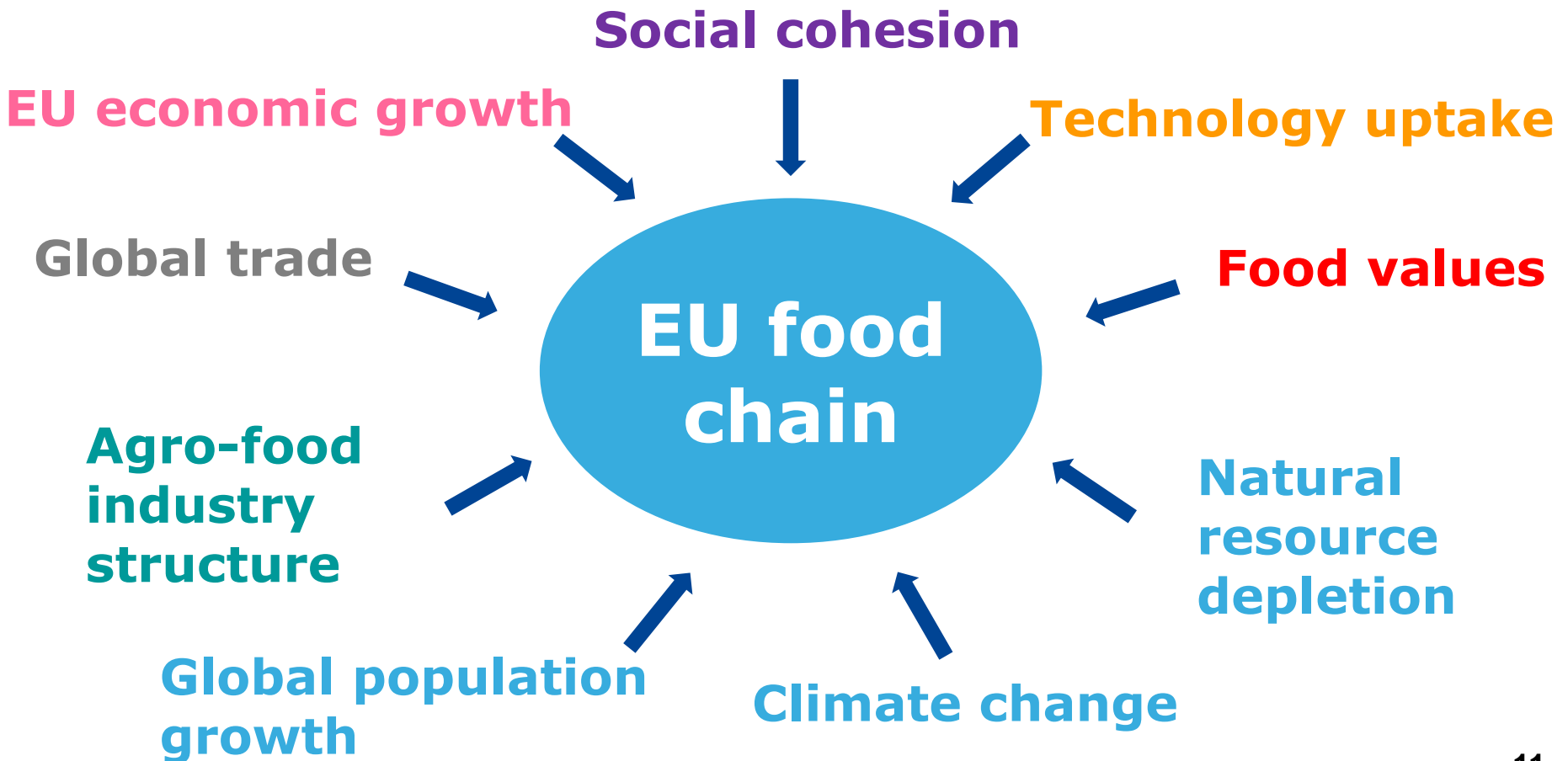


PHASE II OF THE FORESIGHT ANALYSIS

(IN COLLABORATION WITH THE JRC)

- **Consolidation of scenarios** focusing on their interdependences and **identification of their impact** on food safety and nutrition in the EU
- **Assess the capacity of the EU's current food policy** instruments (compliance, control and enforcement) to **respond successfully to the challenges**
- **Identify appropriate (optimal) policy responses, transition pathways and the requisite research** for the development of a **future food safety and nutrition policy and legislative framework** necessary to safeguard the high standards of safe, nutritious, high quality and affordable food for EU consumers

DRIVERS USED FOR SCENARIO BUILDING





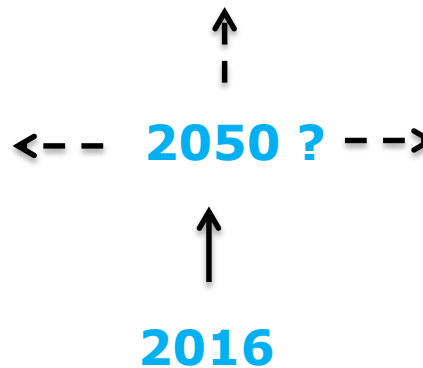
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Scenarios

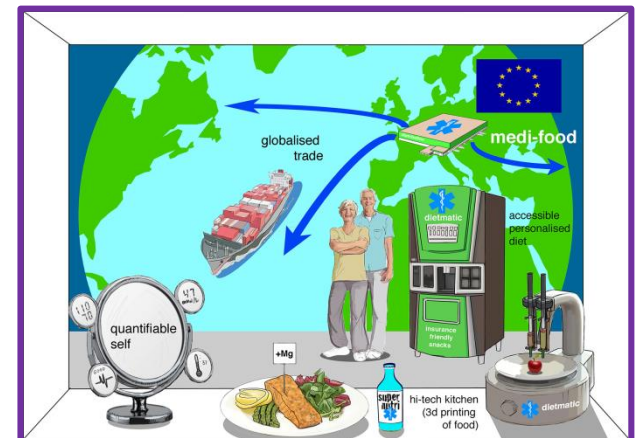
Local Food



Global Food



Pharma Food



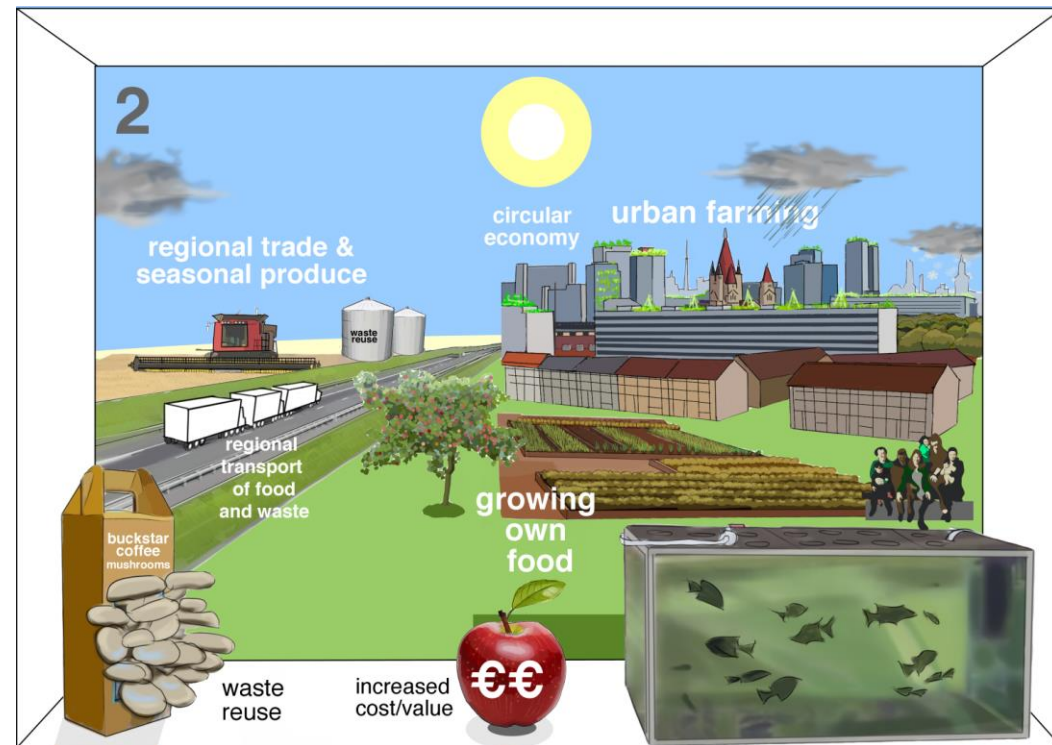
Global Food

- Liberalised trade and global food chain
- EU one of many players
- Raw materials sourced globally—long complex food chains
- **Broad technology acceptance**
- Concentration of agro-food industry; mass production of processed, affordable foods
- **Diets driven by price, taste, convenience**
- **Health and Social Inequalities**
- **Natural resources depletion, global population growth**



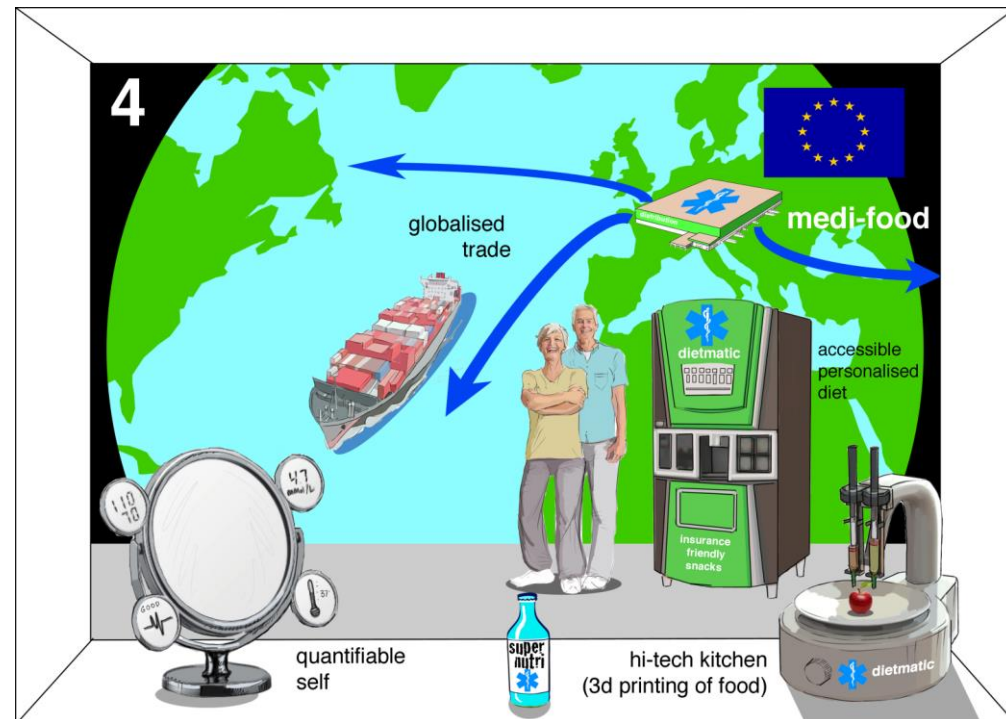
Local Food

- Localisation/regionalisation/homesteading
- **Technology for sustainable use of resources**
- **Mix of large entities and localised food production**
- **High social value of food; diets low in animal protein**
- **Strong sense of communal values and community responsibility**
- **Natural resources depletion global population growth**



Pharma Food

- **High-tech world – maximise HLY, CC adaptation, diversity**
- "Phood": Pharma & food sectors converge + ICT; concentration
- **EU is a strong player worldwide**
- Global trade and global food chains
- **Health is the main driver for food choices, personalised nutrition**
- **Social well-being?**
- **Natural resources depletion, global population growth**



Driver characteristics per scenario

Driver	"Global Food"	"Local Food"	"Pharma Food"
Global trade	Full liberalisation	Disrupted and fragmented	Full liberalisation
EU economic growth	Medium	Decoupled, GDP no longer used as indicator	High
Agro-food chain structure	Concentration	Diversification, alternative food chains	Concentration
Technology uptake	High	High with focus on environmental sustainability	High with focus on nutrition & health
Social cohesion	Low	High	High
Food values	Low	High with focus on local production & quality	High with focus on nutrition & health
Climate change	2°C threshold of temperature increase to be reached by 2050		
Depletion of natural resources	Progressive natural resource depletion towards 2050		
World population growth	World population will increase to about 9 billion by 2050		

Global Food: prioritised challenges

Main Prioritised Challenges

Differences in the handling of food in third countries due to diverging food safety standards

Suitability of the current EU risk assessment procedures for new food ingredients, food products and food-related technologies (including suitability of exposure data and current maximum residue levels)

Ability to perform official food-related controls

Increased sedentary behaviour and snacking due to changed lifestyles

&

Diets based predominantly on highly processed foods and decreased availability of fresh produce

Provision of complex quality labelling information to the consumer and opportunity for fraud

Global Food: Policy & IT Challenges (1/2)

Main Prioritised Challenges	Potential policy options	IT Challenges & Solutions
<i>Differences in the handling of food in third countries due to diverging food safety standards)</i>	Build efficient food safety standards with implementation details	Publication-maintenance of food safety standards using machine readable expressions
	Co-regulation or enforced self-regulation by food business operators	Secured mandatory digital tracking and tracing of food flows stored and guaranteed by trusted third parties (machine auditable by the control authorities in case of issues)
<i>Suitability of the current EU risk assessment procedures for new food ingredients, food products and food-related technologies (including suitability of exposure data and current maximum residue levels)</i>	Enhance collaboration between risk assessment bodies	More online collaboration. Compilation-Exchanges of data on analysis & assessment results in order to be able to assess or re-assess on semi-automated way using different assessment models
	Horizon scanning to identify vulnerabilities in the supply chain	Secured mandatory digital tracking and tracing of food flows stored by trusted third parties (machine auditable by the control authorities in case of issues)
<i>Ability to perform official food-related controls</i>	Long-term funding mechanisms	NA
	Expand third country controls	Extension to third countries of the secured mandatory digital tracking and tracing of food flows stored by trusted third parties (machine auditable by the control authorities in case of issues)
	Enhancing surveillance to ensure food safety during transportation	Generalisation of intelligent labelling and packing-packaging recording parameters from farm to fork
	Improving traceability using related technologies	RFID, interoperable international standards enforced and secured mandatory digital trace and track stored and guaranteed by trusted third parties

Global Food: Policy & IT Challenges (2/2)

Main Prioritised Challenges	Potential policy options	IT Challenges & Solutions
<p><i>Increased sedentary behaviour and snacking due to changed lifestyles</i></p> <p>&</p> <p><i>Diets based predominantly on highly processed foods and decreased availability of fresh produce</i></p>	Fiscal measures	NA
	Food reformulation and other incentives	Historisation of digital labelling data in order to show publicly evidences of gradual reformulations
	Zoning and other limitations	Digital mapping of key elements defining the zoning and other limitations linked with expert geographical alert system
	Standards and guidelines for public procurement	NA
	Funding of national and European food and diet related actions	NA
	Improve nutrition education	My connected fridge does give me advices on how to best use its content and what to buy to improve my nutrition balance
	Improve the provision of nutrition information	Digital repository on labelling of product made available to Apps or other devices allowing an automated dietary follow-up for the individual.
<p><i>Provision of complex quality labelling information to the consumer and opportunity for fraud</i></p>	Harmonisation at international level	Harmonisation of exchange structure on labelling. Mandatory digital publication of data from labels (machine readable formats) by the suppliers importing or producing in EU in order to 'feed' personal monitoring apps or information systems

Local Food: prioritised challenges

Main Prioritised Challenges

Food safety responsibility in the hands of individual producers

Failure to provide appropriate food safety information to the consumer

Re-introduction of food waste and organic side-stream products in the food chain

Temporary shortages of fresh produce and food poverty in a self-sufficient food system

Local Food: policy options (1/2)

Main Prioritised Challenges	Potential policy option	IT Challenges & Solutions
<i>Food safety responsibility in the hands of individual producers</i>	Expansion of the scope of the General Food Law and hygiene regulations and the related control implications to individual food producers	Effective digital realtime traceability including product treatments. Keeping buyer's contact is important to manage potential fragmented recalls
	Establishment of a list of "risk" products	Publication using machine readable format to feed automatically information systems for producers and consumers (My fridge is now an information system and can alert me based on its content)
	Food safety education	Targeted hygiene education linked to my purchased products (either from producers or from automatic recognition of product stored in home storage)
<i>Failure to provide appropriate food safety information to the consumer</i>	Social networks and ICTs	Reports cultivation practices, advice consumer on hygiene practices (from more central knowledge bases) and build consumer to producer relationship feedback in a social network way

Local Food: policy options (2/2)

Main Prioritised Challenges	Potential policy option	IT Challenges & Solutions
<i>Re-introduction of food waste and organic side-stream products in the food chain</i>	Expansion of the scope of General Food Law and feed hygiene regulations to individual producers	Electronic register of small feed producer (like the Blue Number of International Trade Centre)
	Communal food waste handling or recycling centres	Localisation of facilities with information of food waste recycling capabilities
	Proactive education initiatives	Online education capacities
<i>Temporary shortages of fresh produce and food poverty in a self-sufficient food system</i>	Emergency mechanisms for food re-distribution	Supply-demand alert systems shared between local producers and neighbouring regions ones

Pharma Food: prioritised challenges

Main Prioritised Challenges

Potential drawbacks of personalised nutrition and "phoods"

Ability to perform official food-related controls

Suitability of the current EU risk assessment procedures for new food ingredients, food products and food-related technologies (incl. suitability of exposure data and maximum residue levels)

Pharma Food: policy options

Main Prioritised Challenges	Potential policy option	IT Challenges & Solutions
<i>Potential drawbacks of personalised nutrition and "phoods"</i>	Adapting or creating an effective regulatory framework	Secured mandatory digital tracking and tracing of ingredients and their combination stored by trusted third parties (machine auditable by the control authorities in case of issues)
	Redefining health and nutrition claims	Expansion of the existing health and nutrition platform
<i>Ability to perform official food-related controls</i>	Regulating "phood" manufacture: "Phood licence"	Online training and licencing
	Post-market monitoring and "nutrивigilance" controls	Nutrивigilance database open to public to report issues and consult existing adverse effects
	Expand third country controls	Traceability from ingredient fabric to fork potentially linked with the nutrивigilance database
<i>Suitability of the current EU risk assessment procedures for new food ingredients, food products and food-related technologies (incl. suitability of exposure data and maximum residue levels)</i>	Dealing with cumulative effects and long term exposure	Personal monitoring of ingredients purchased and absorbed linking automatically to knowledge base and 'nutrивigilance' systems to trigger alerts and warnings. Link with personal electronic medical file possible.

Conclusions

The legislative framework governing food safety in the EU is robust, effective and efficient

Action needed for improving the effectiveness of EU nutrition policies

Harmonisation of risk assessment approaches to allow for the inclusion of other legitimate factors such as health benefits and socio-economic consequences

A suitable and harmonised metric for benchmarking and monitoring food safety performance in the EU needs to be established

An effective early warning system for emerging hazards at EU level is missing

Adaptation of official control and inspection services to future needs

Investment in providing food safety and nutrition education to the public

Conclusions at IT level

- No need for breakthrough technologies: all the building blocks to allow the scenario described are existing (scope of most of the presentations today)*
- Capacity of the IT business and ecosystem to create adapted solutions and new business models is real*
- Legal base to enable-authorise these systems to work need to be elaborated, created and adopted*
- Further effort to harmonise and standardise data structure and process in the food domain are needed even if in good tracks (see point on UNCEFACT standards in the afternoon)*

Thank you for your attention!