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# SUSFANS

## Metrics, models and foresight for sustainable food and nutrition security in Europe

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# European food and nutrition security





# Food and nutrition security in Europe and EU28

- ✓ Food safety
- ✓ Trust, consumer acceptance & food culture
- ✓ Affordable food - macro and micro nutrients
- ✓ Dietary adequacy
- ✓ Reduced burden of cardiovascular disease, cancer
- ✓ Social justice & ethics
- ✓ Environmentally sustainable agriculture
- ✓ Economic viability
- ✓ Competitive food industry and farming
- ✓ Resilience to shock and threat
- ✓ Etc.

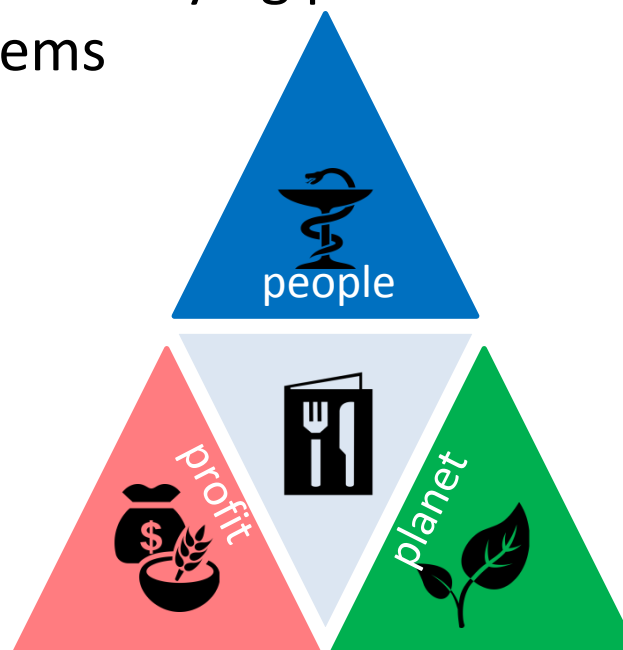


# European *sustainable* food and nutrition security

## Diet



Impact from food consumption  
and underlying production  
systems



# EU Sustainable food & nutrition security – food system public goods and “bads”

**20-75% of cancers**  
is attributable to diet

*(WCRF, 1997)*

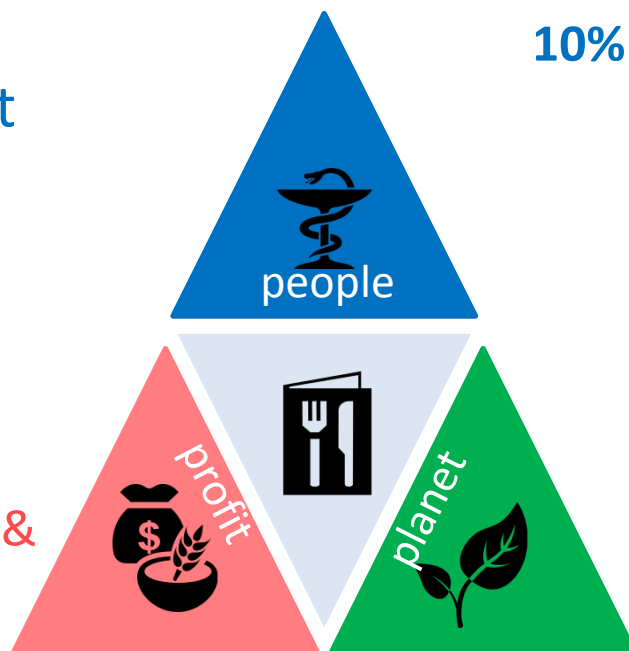
## Growth & jobs

In EU MS farms, fishing & food/drink industries contribute

**5-15% of GDP;**

**1-30% of jobs**

*(Eurostat 2015)*



## Insufficient food access (in NMS)

**10%** ↘ fruits & vegetables, ↗ salts

**8%** underweight (children)

*(Lim, 2010)*

**5-7% of pop.** undernourished

*(IFPRI, 2014; Cockx et al. 2015)*

**Climate change,  
polluted air & water,  
biodiversity, food loss**

**15-28%** of total GHGe is  
attributable to food supply

*(Garnett, 2011)*



# SUSFANS research objective

To build the conceptual framework, the evidence base and **analytical tools**,  
for underpinning EU-wide food policies with respect to their impact on **consumer diets**,  
**and their implications for nutrition** and public health in the EU, the **environment**, the **competitiveness** of the EU agri-food sectors, and global food and nutrition security



# Starting points

- Strengthening **EU food and nutrition security** requires more sustainable food consumption and production
- Impact of **consumer choice & diets** on society  
←→decisions along entire food value chain
- **Innovation and policy** reform drive societal change
- Need analytical **tools** to inform debate

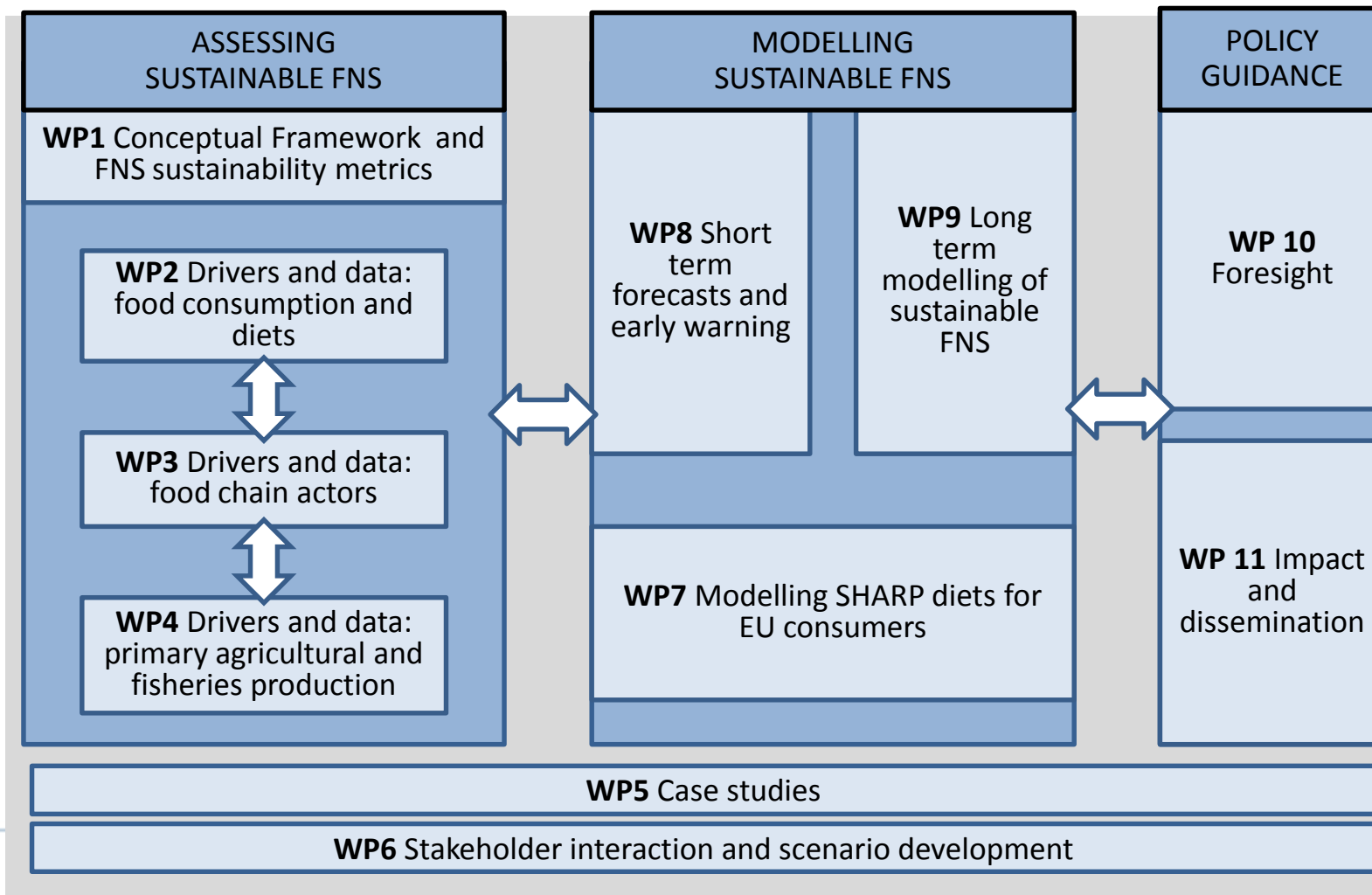


# SUSFANS Research Consortium (April 2015- March 2019)





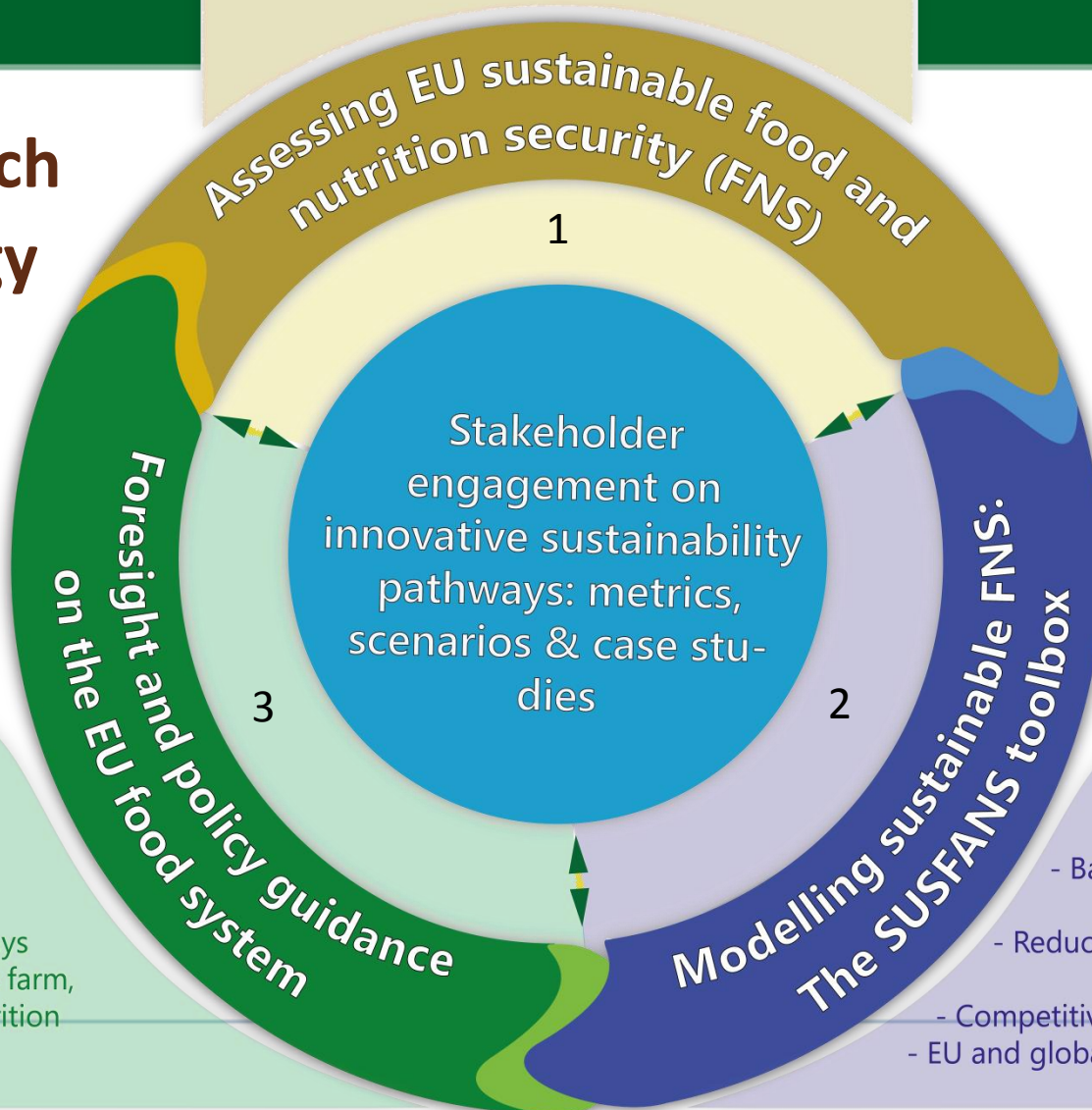
# Organization of research activities





- Defining performance metrics for sustainable food and nutrition (FNS) in the EU
- Understanding drivers of EU diets and food production systems

## Research Strategy



## 3 "Pillars"

1. Assessing
2. Modelling
3. Foresight & policy

Future scenarios for EU diets and food systems

- Case studies on innovation pathways
- Underpinning EU-wide farm, fish, food and nutrition policies

Models and tools for quantifying metrics on:

- Balanced and sufficient diet for EU citizens
- Reduction of environmental impacts
- Competitive EU agri-food business
- EU and global food and nutrition security



# 4-tier approach to assess food and nutrition security (FNS) in EU and sustainability performance of EU food system

1. Integrated framework for an EU28 food systems approach

2. Metrics for nutrition, competitiveness, environment, equity

3. Harmonised EU data & modelling of diets and food systems

4. Food system foresight: explore challenges and design solutions





# Metrics for nutrition, competitiveness, environment, equity

## Policy goals

**1. Balanced and sufficient diets for EU citizens**

**2. Reduced environmental impacts of the EU food system**

**3. Competitiveness of EU agri-food businesses**

**4. Equitable outcomes and conditions of the EU food system**

## Performance metrics

Food based intake summary  
Nutrient based intake summary  
Energy balance

Climate stabilization  
Clean air and water  
Biodiversity conservation  
Preservation of natural resources

Relation between production and trade  
Orientation and specialization of trade  
Economic performance and productivity

Between producers and chain actors  
Among consumers with regards to system conditions  
Among consumers with regards to system outcomes  
Footprint of food





# Metrics for nutrition, competitiveness, environment, equity

## Policy goal

Balanced and sufficient diets for EU citizens

Equitable outcomes and conditions

Reduction of environmental impacts

Competitiveness of the EU agri-food business



# Metrics for nutrition

Policy goal	Specific goal
Balanced and sufficient diets for EU citizens	Energy balance
	Adequate Nutrient intake
	Adequate Food intake
	Reduced prevalence of diet-related NCDs

- Food based dietary guideline (FBDG)
  - Food intake
  - Nutrient intake
- BMI / Energy
- Noncommunicable diseases (NCD)



# Metrics for environment

Policy goal	Specific goal
Reduction of environmental impacts	Climate stabilisation
	Clean air and water
	Biodiversity conservation
	Preservation of natural resources

- Climate mitigation – all greenhouse gases
- Nitrogen & phosphorus balance; pollution
- Land use diversity; reduced loss of species
- Water use, fish stocks, soil fertility





# Metrics for nutrition, competitiveness, environment, equity

Policy goal	Specific goal
Competitiveness of the EU agri-food business	Value added
	Productivity & innovation
	Job creation
	True-price structure

- Food sector, growth in value creation
- Productivity growth
- Job creation and wages
- Accounting for GHG in the economy







# Metrics for nutrition, competitiveness, environment, equity

Policy goal	Specific goal
Equitable outcomes and conditions	Equity among consumers (outcomes)
	Equity conditions: ethics and justice
	Equity among producers and chain actors
	Equity in footprint of food
Reduction of environmental impacts	Climate stabilisation
	Clean air and water
	Biodiversity conservation
	Preservation of natural resources
Competitiveness of the EU agri-food business	Value added
	Productivity & innovation
	Job creation
	True-price structure



# Assessing Sustainable Food and Nutrition Security of the EU Food System

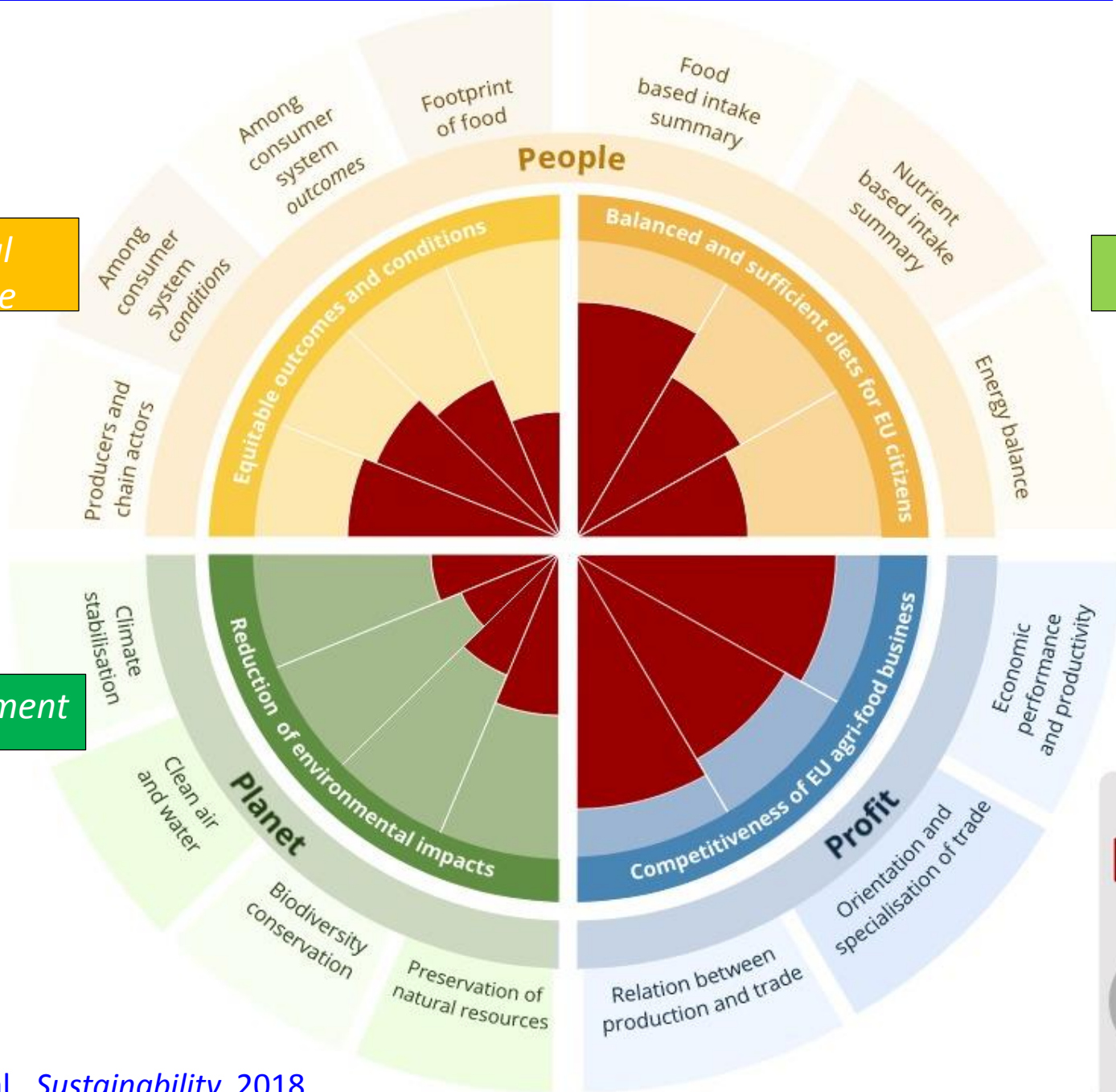


Social justice

Nutrition

Environment

Economy



**SFNS Visualizer**

**Hypothetical status** of the indicator with respect to the *current* EU food

The further the wedge reaches towards the outside line, the closer the indicator's status to the sustainability goal is

# SUSFANS modelling toolbox: assessing diet & food system transformations

## Macro-economy

### MAGNET

Complete economy;  
Income effects.  
*Global, country level*

## Diet and health

### SHARP

Product detail;  
Specific diet needs.  
*EU level*

### DIET

Consumer preferences;  
Health & environment.  
*EU level*

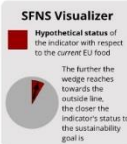
## Primary production

### GLOBIOM/Agriprice4cast

Environmental impacts; Spatial  
detail; Primary production  
price volatility.  
*Global, grid level*

### CAPRI

EU food supply details;  
Global market details.  
*Global, EU, national,  
province level*



## SUSFANS METRICS (2010 – 2030 – 2050)

*Equity*

*Nutrition*

*Economy*

*Environment*



# SUSFANS foresight approach: Food towards 2030/2050

Exploring **innovation pathways** and **policy options** for transformation towards **SHARP diets** and **sustainable food systems** in the EU

**AGRO-FOOD-  
NUTRITION  
POLICIES**

**Sustainable  
food systems**

**CONTEXTUAL  
SCENARIOS**



**SHARP diet**

**INNOVATIONS**





# Key message (preliminary)

It is possible for the EU to move towards sustainable diets and a sustainable food supply system in a matter of decades, but only with a proper transformation of the production, trade, distribution and consumption of food.

- 2030 Agenda
- Shift from quantity-driven to quality-driven
- Instruments, pathways, opportunities



# Taking it forward

- How to move towards more integrated food systems approach for EU28, EU region, member states, sub-national?
- How to make SUSFANS tools usable for:
  - National food-based dietary guidelines
  - Innovation strategies/policy, private & public
  - Consumer decisions



# Thank you

More on SUSFANS at [www.susfans.eu](http://www.susfans.eu) or contact Thom Achterbosch (coordinator) at [thom.achterbosch@wur.nl](mailto:thom.achterbosch@wur.nl)

A banner for the SUSFANS Final Workshop. On the left is the SUSFANS logo. The background shows a woman in a black tank top standing in a grocery store aisle, and a close-up of hands holding a basket of red tomatoes. The text on the right reads: "SUSFANS Final Workshop", "Save the Date - 7<sup>th</sup> March 2019", and "Brussels, Belgium".

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# Policy recommendations (preliminary)

- Need for greater coordination of national consumption patterns at EU level
- Manage trade-offs across sustainability dimensions – aligned multi-level and multi-dimensional food policy framework in EU
- Mix of consumer, producer, system interventions
  - Common Agriculture and Fisheries Policies contribute to sustainability of EU diet; redirect towards nutrition.
  - Consumer choice, environment







# Thank you

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