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Towards a sustainable EU food and nutrition security: Main messages and policy recommendations from the SUSFANS project

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Outline

Food systems challenges – evidence based assessment

Entry points for a more sustainable food system

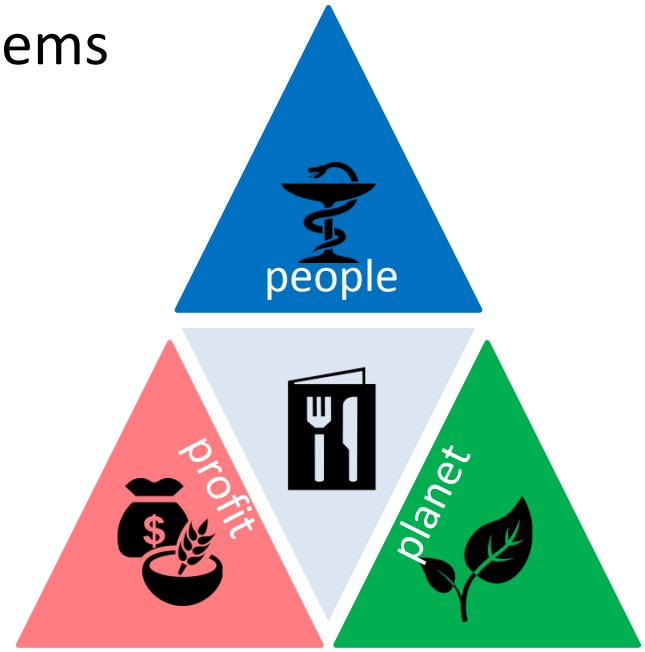
Diet shift scenarios

Policy recommendations

European *sustainable* food and nutrition security challenges

Diet

Impact from food consumption and underlying production systems

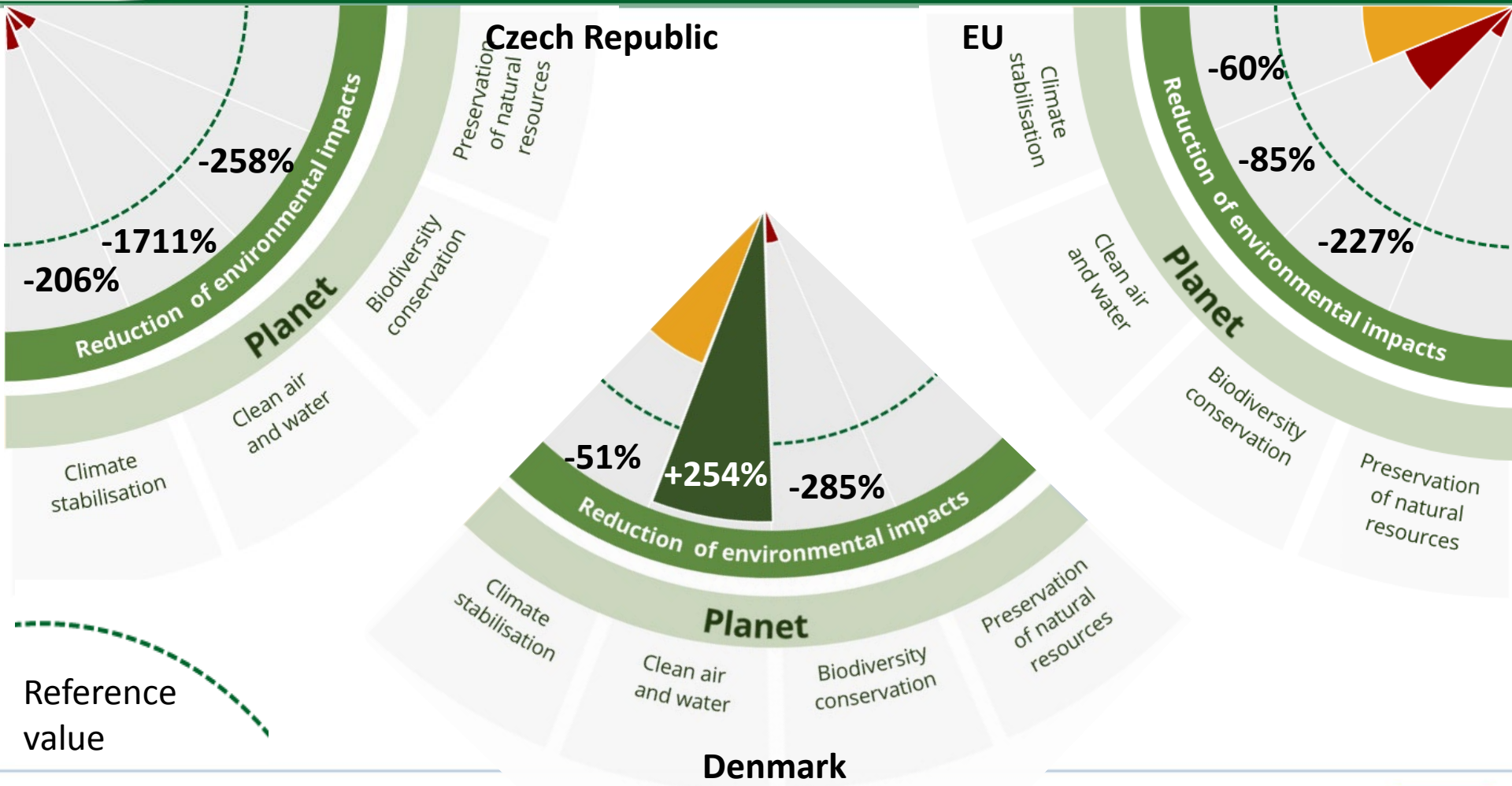


Rutten et al. 2016, *Ag. Systems*
Zurek et al. 2018, *Sustainability*

Assessment: imbalanced diets, large impact on planet

- Current nutritional patterns are imbalanced
  - Based on dietary assessment of nutrition surveillance for CZE, DNK, FRA, ITA, for 2003-07
- Environmental impact of dietary patterns is large and related to meat (especially beef), overconsumption, food waste.
  - Gap of 1,000 kCal per person per day between food availability and food intake! Data OR reality?

Environmental indicators vary regionally and are off target

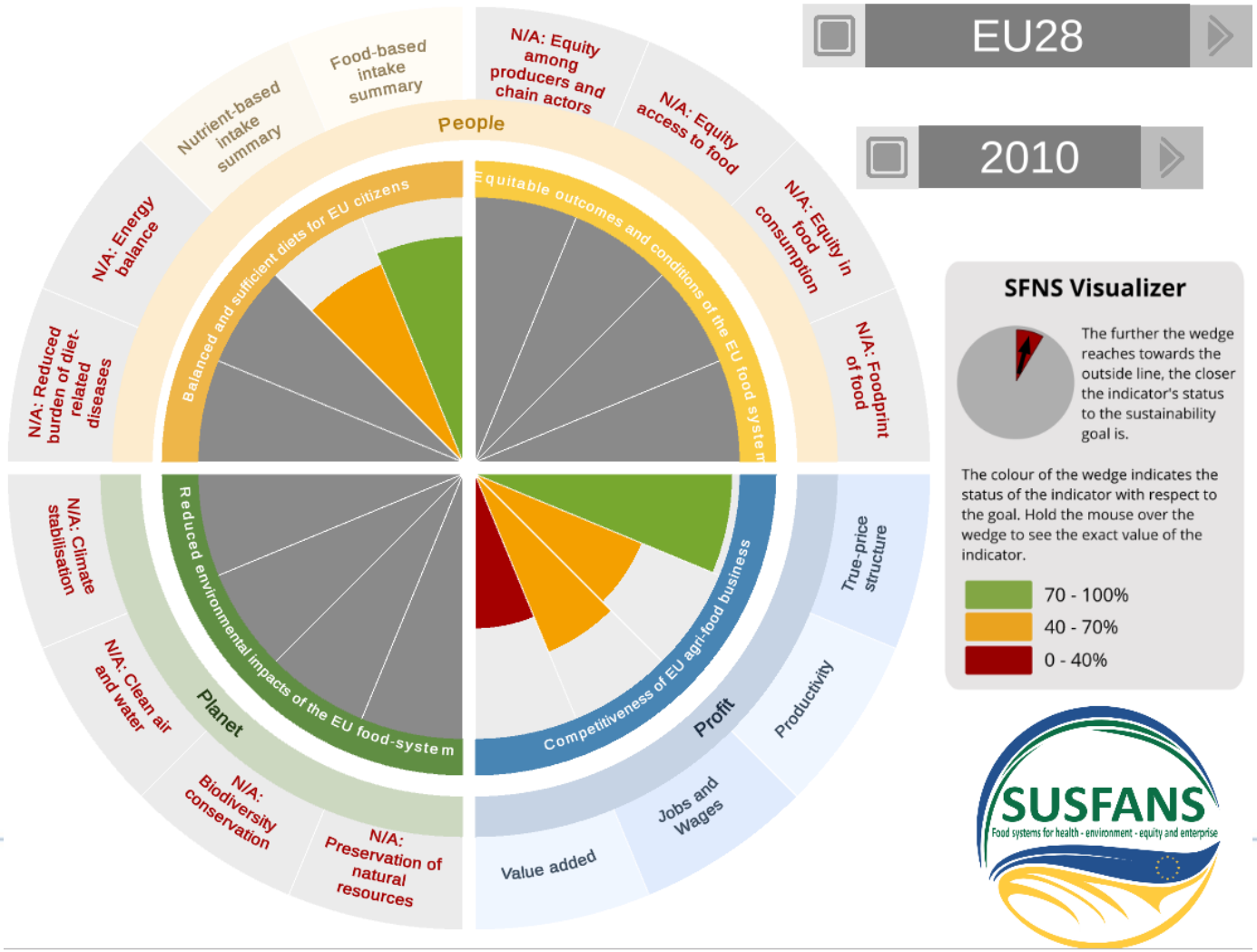


Leip et al. 2017. SUSFANS Deliverable 4.7

Assessment: Business viability & equity under pressure

- The economic viability of primary agriculture/ fisheries and food production is under threat
  - more competitive regions, and low profit margins.
- Equity and social justice under pressure
  - food access not guaranteed; unequal diet quality, by education levels and gender.
  - Farmer's profit margins oscillate 4-5 times more than food retail; large buying power from upstream value chain partners.

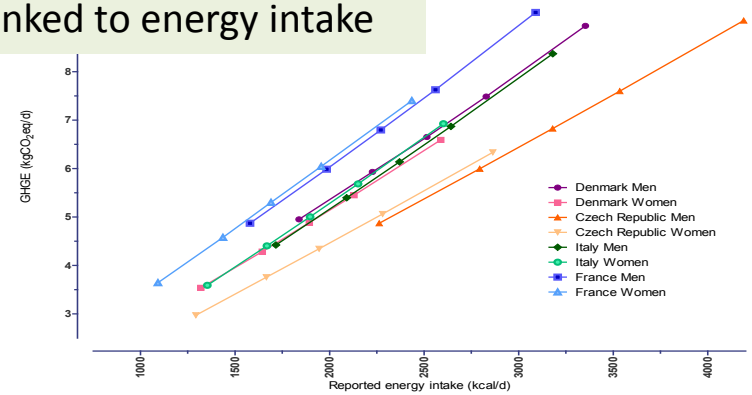
Assessment: EU food system insufficiently future-proof



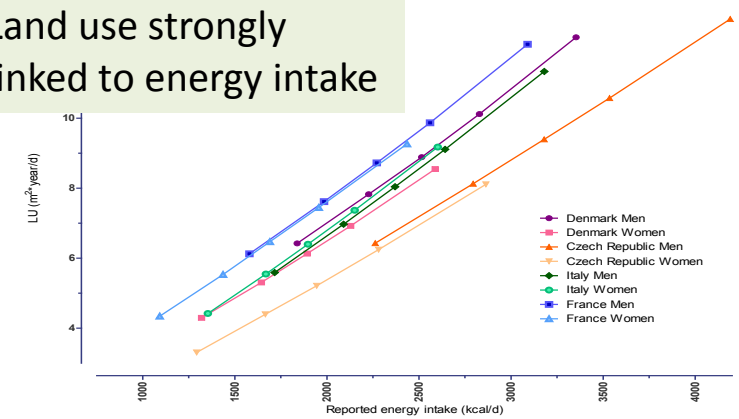
DIET SHIFT SCENARIOS

Food choice & energy intake separated for both health and sustainability reasons

GHG emissions strongly linked to energy intake



Land use strongly linked to energy intake



- **Food choice**, especially meat consumption, has well known link to both health and sustainability
- **Energy** less often accounted for in foresight exercise, but key for both GHG and land use
- Analysis based on 4 EU countries (DK, CZ, IT, FR) shows clear links, 200 kcal less:
  - Reduces 9% GHG and 10% land use
  - Lowers average body weight 10-15%
  - Average BMI drops from 27.5 kg/m^2 to 24.8-23.4
  - Overweight from ca 40% → ≈ 10% (tbc)

NOTE: Preliminary results, *based on individual intake data from DK, CZ, IT, FR (n≈8,000, 2 days) and average GHG & land use coefficients mapped to food intake.* ***Intake data is for 2003 to 2007.*** *Intake patterns in more recent data show a gradual shift away from meat consumption. Source: Mertens et al. (work in progress).*

1-SCENARIO targets
Healthier diet recommendation suitable for macro models

% change of the 2010 consumption levels / household demand by simulation period

Scenario 1 Consuming healthy food	**2020**	**2030**	**2040**	**2050**
Fruit, vegetables (nuts)	+25	+50	+75	+100
Red meat & meat products	-12.5	-25.0	-37.5	-50.0
Sugar	-12.5	-25.0	-37.5	-50.0
Energy (isocaloric)	0	0	0	0

Scenario 2: Consuming only right amount of calories	**2020**	**2030**	**2040**	**2050**
Energy	-2.5	-5.0	-7.5	-10.0

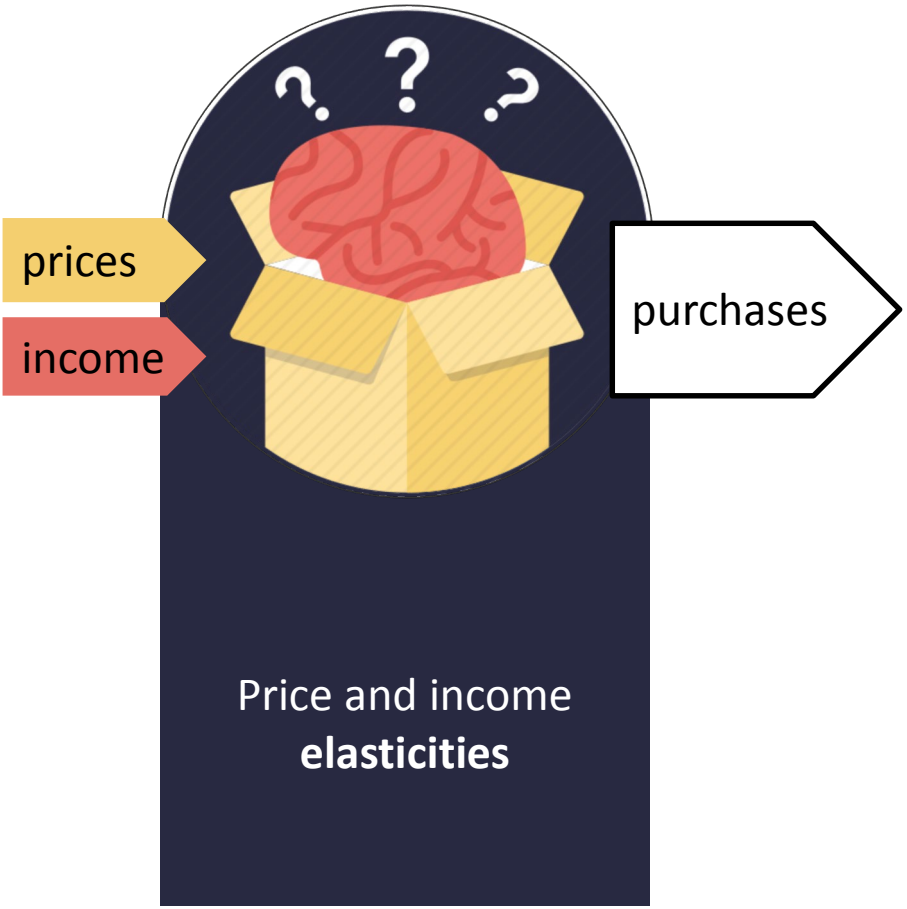
Scenario 3 (Combined)
Consuming balanced and sufficient diet

2- SCENARIO instruments

LIMITED evidence of consumer interventions – HARD to map to model

	Intervention	Max diet change (%)	Model instrument
1	Provide information	16	National average consumer taste shifters
3	Compulsory information on products	7	
4	Nudge through changing default policy	variable	
5	Ban marketing aimed at agents with limited decision-making capacity (e.g. children)	5	
6	Ensure healthy choices are available	13	
7	Enable choice by behavioural change programs	7	
8	Guide choices - DO nudges	25	Taxes & subsidies
9	Guide choices – DON'T DO nudges	23	
10	Restrict choice through regulation	No data	Production / trade quota
11	Eliminate choice	No data	

INSTRUMENTS: What's the link between macro models and consumer research?



- A link between prices/ income and purchases is estimated
- **Motives for** purchases but **cannot be "unpacked"**
  - For example cannot determine if lack of response to a lower meat price is because of being vegetarian, on a hype diet excluding meat, or ....

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

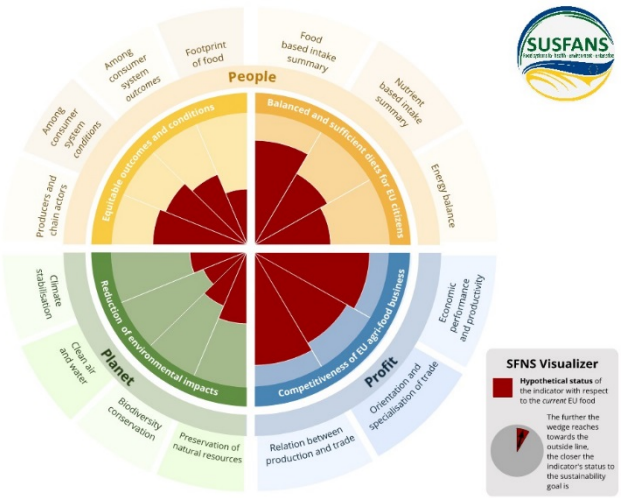
Primary production

GLOBIOM/Agriprice4cast

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

CAPRI

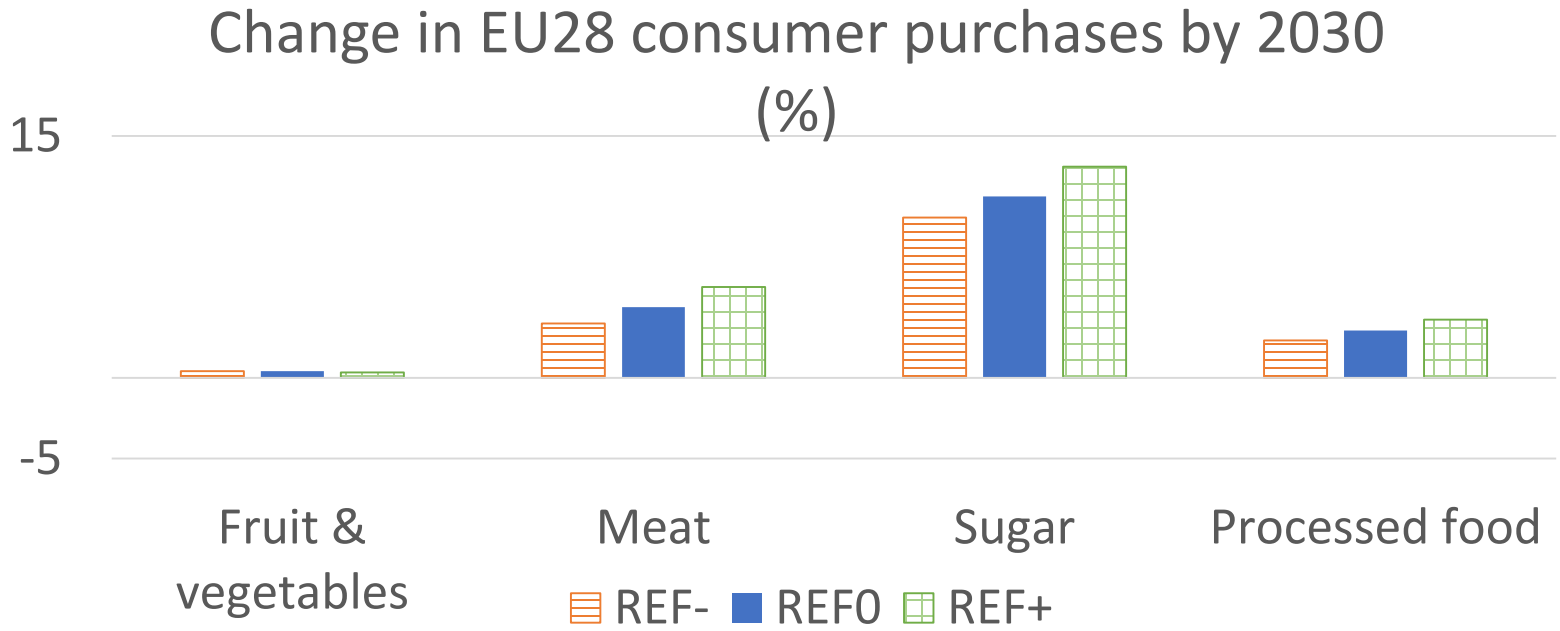
EU food supply details;
Global market details.
Global, EU, national, province level



SUSFANS METRICS (2010 – 2030 – 2050)

Equity	*Nutrition*	*Economy*	*Environment*

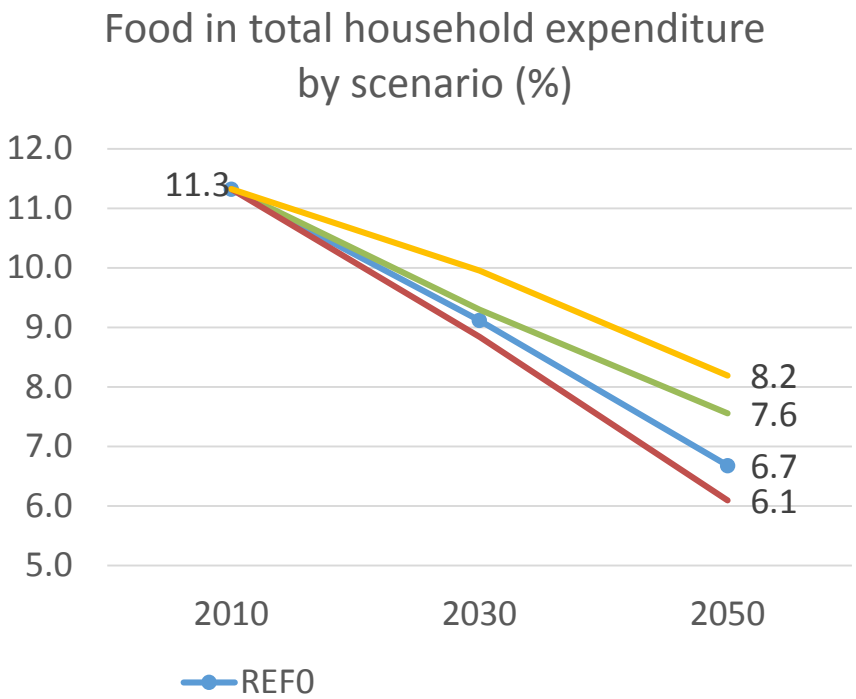
How do consumer purchases of key food groups change to 2050?



- **EU28 Fruit and vegetables decrease** minimally by 2050 (least in REF-)
- But few member states show stable or tiny increase (maximum 2.5% in Czech Republic)
- **Meat, sugar increase** in all scenarios
- Processed food (includes fruit and vegetable products, but also sugar sweetened beverages, alcohol etc.) increases in all scenarios

Source: MAGNET simulations

Results 1 - What happens to EU food expenditures?



Scen. (1) Consuming healthy food
Scen. (2) Consuming only right amount of calories
Scen. (3) Consuming balanced and sufficient diet

- Food expenditures are only a small part of total household expenditures (11.3% in 2010) and almost halves by 2050 (6.1%) in REF0
- In all scenarios, which impose consumer taxes to reach the targets, share of food expenditures still dro

Source: MAGNET simulations and SHARP data for 4 countries

Results 2: Unfeasible price changes are needed – the case of beef

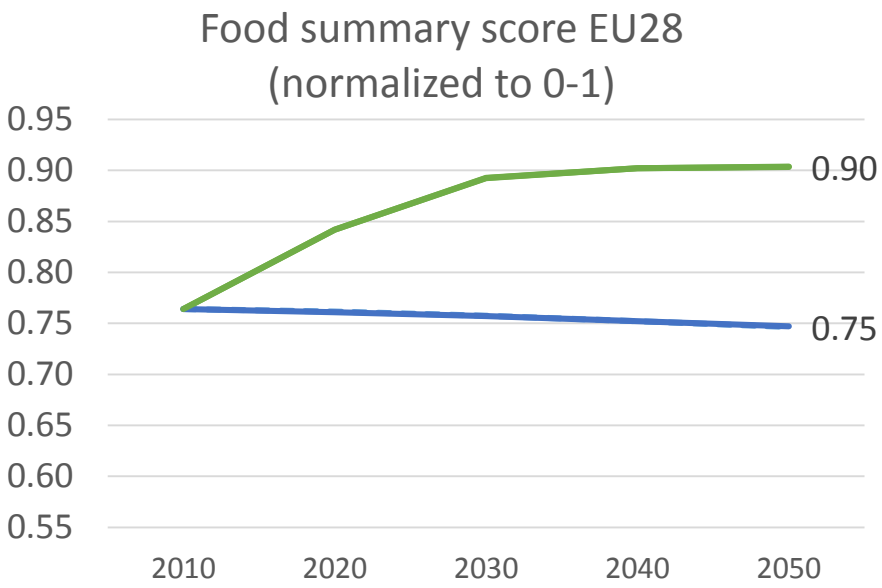
Change in EU consumer beef price (compared to 2010,%)

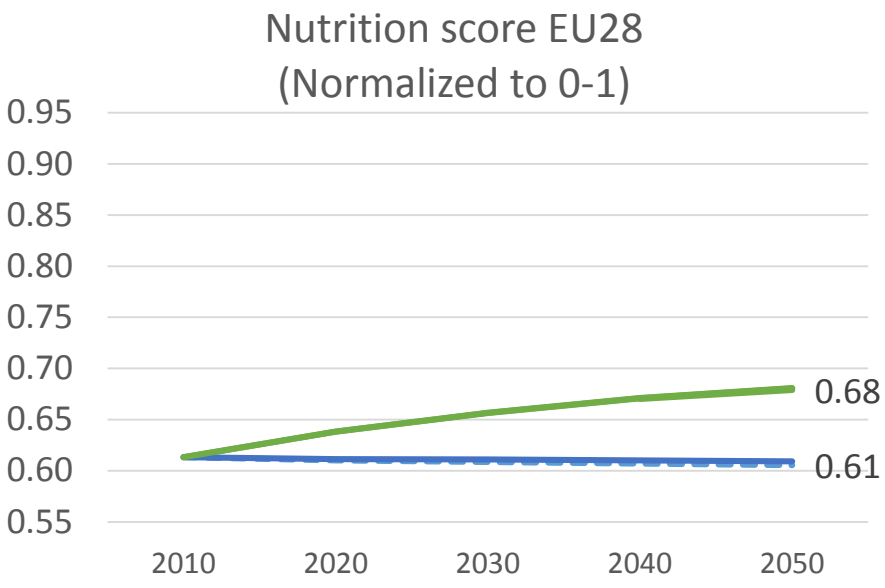
	2030	2050
Sustainability outlooks		
REF0	-3	-9
REF-	-2	-5
REF+	-4	-12
Diet shift scenarios		
(1) Healthy foods	74	270
(2) Right calories	75	275
(3) Balanced & sufficient diet	75	275

- All contextual scenarios project an increase in meat purchases, reducing meat consumption thus requires a trend reversal
- Large increases (up to 275% by 2050) to counteract the current trends
- Springmann et al (2016) estimate a 26% increase in beef prices by 2020 for the EU (high income countries) based on GHG emissions

Source: MAGNET simulations and SHARP data for 4 countries

Results 3. Food & Nutrient based scores improve, yet challenges remain





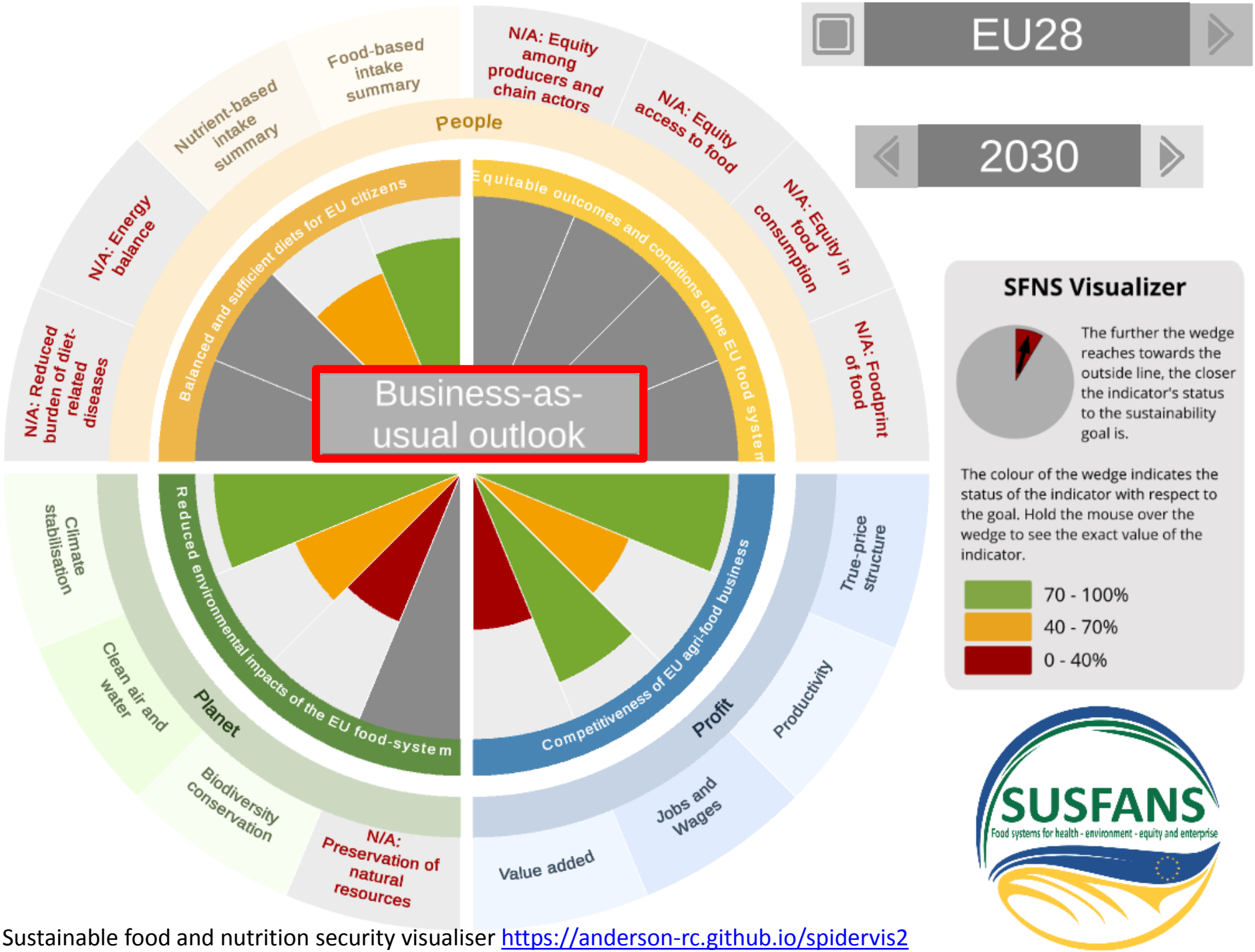
REF0

Scen. (1) Consuming healthy food

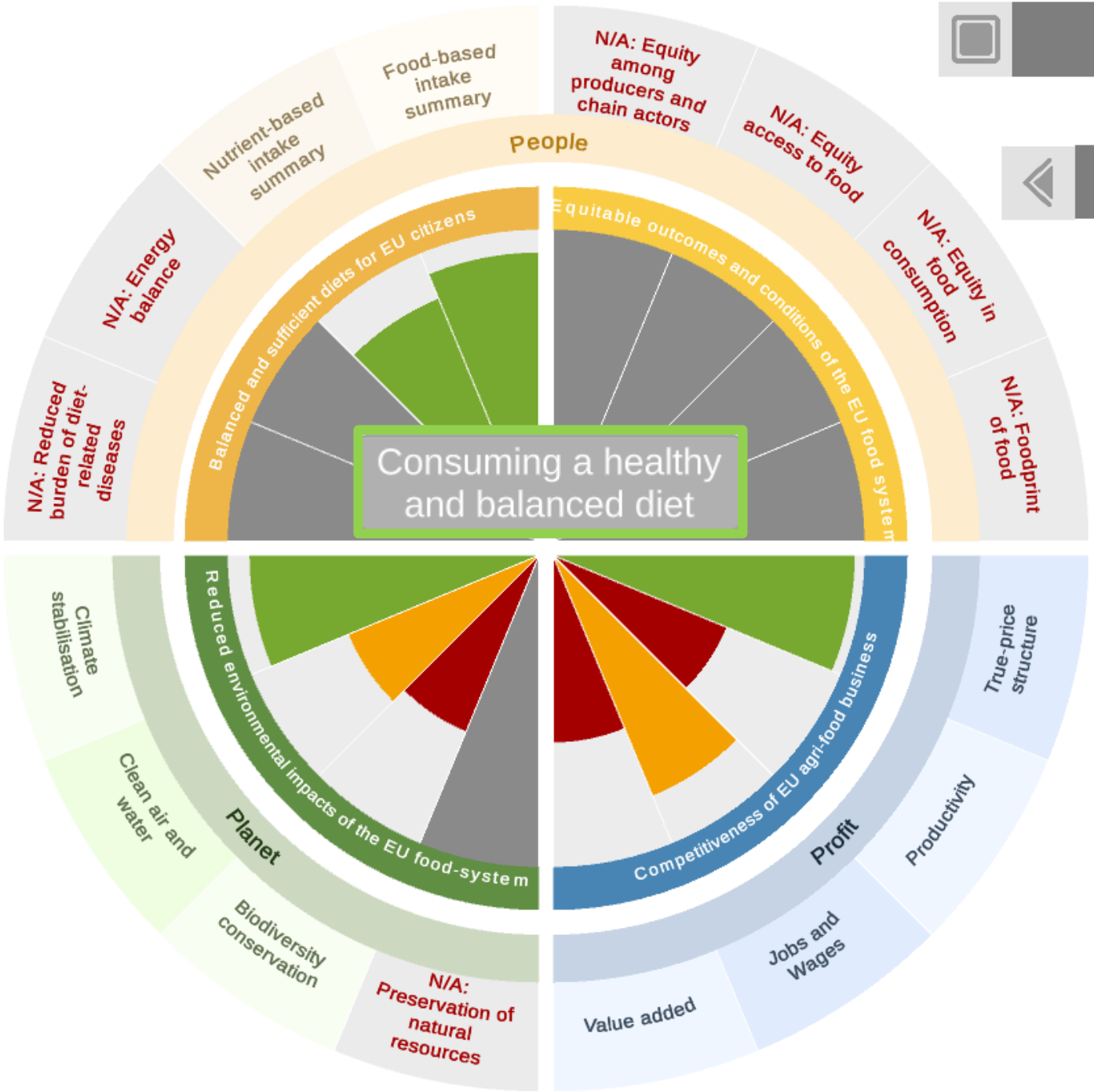
Scen. (2) Consuming only right amount of calories

Scen. (3) Consuming balanced and sufficient diet

Source: MAGNET simulations and SHARP data for 4 countries



Sustainable food and nutrition security visualiser https://anderson-rc.github.io/spidervis2



SFNS Visualizer

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

The colour of the wedge indicates the status of the indicator with respect to the goal. Hold the mouse over the wedge to see the exact value of the indicator.

- 70 - 100%
- 40 - 70%
- 0 - 40%

SUSFANS
Food systems for health - environment - equity and enterprise

Sustainable food and nutrition security visualiser https://anderson-rc.github.io/spidervis2

Conclusion

EU can shift towards sustainable diets and a sustainable food supply system by 2030-2050

Needs transformation of production, trade, distribution, and consumption of food.

Entry points for change... on the demand side

- Most consumers still **far from recommended sustainable diets.**
  - **UP** F&V, legumes, nuts, seeds; **DOWN** red/processed meat and alcohol.
- Most consumers are **not really conscious about sustainable consumption**
  - Most frequent sustainable consumption behaviour : (1) eating **seasonal/local food** (2) **eating free range products/products with a sustainability logo/smaller portions**
- **Instruments**
  - **Tax policy may** contribute to **healthier food choices** but it is regressive **(equity issue)**
  - **Information** (campaigns, labelling) **works**… the effects on WTP and quantities are **significant, albeit small**
  - Even if the effects are small, **information policies are cost-effective,** bring **health and environmental benefits** at low cost

Entry points for change... On the supply side

- Food reformulation (decrease in salt, fat, sugar… contents in foods) **may potentially have significant effects on public health**
  - Voluntary **reformulation of food products** ongoing, but the effects on **consumers' intakes are still weak**.
  - Blocking points, consumer has 'healthy=not tasty intuition'

- **Standard-based policies** : not regressive, higher health impacts, Practical difficulties of such policies have to be considered in order to **prioritize mandatory (public) *versus* voluntary (private) standards.**

- **Best policy mix** to deal with nutritional issues **: information (campaigns/labelling) + food quality improvement**

Entry points for change... Systems innovation

- “Quality for Europe”
- “Safety for the world”
- “Circular systems”
- “Consumer-centric”

How to enable the transformation.

RECOMMENDATIONS

Recommendation 1

Better coordinated monitoring of national consumption patterns at EU level.

Harmonised EU data & modelling of diets food systems

Uptake by “new“ users of consumer-centric solutions

Recommendation 2

Better manage sustainability trade-offs, by involving consumers and all food system actors

Trade-offs appear across and within all sustainability domains

Climate change mitigation; food waste

Perceptions of sustainable consumption

Recommendation 3

EU farm & fishery policies (CAP, CFP) should be addressed to promote more sustainability in primary food production in EU.

Limited efforts should go into transforming the CAP into a framework that <u>supports healthy diet</u>

An aligned multi-level and multi-dimensional food policy framework in the EU and Member States!

Alignment? Go beyond simplicity

Diet recommendation	CMO*	No CMO
- To increase: • Vegetables • Fruit • Legumes • Nuts and seeds • Fish • Milk	Dairy	Vegetables Fruit Legumes Nuts and seeds Fish
To reduce: • Red and processed meat • Sugar sweetened beverages • Cheese • Alcohol (ethanol) • Salt	Beef Pork Poultry Dairy Sugar Grains	(Processed meat) (Salt) (Ethanol)

*CMO = common market organisation

Recommendation 4

Need a mix of price-based AND more directive instruments, and innovation

Need to be considered in full food system setting.

Innovation in products, technology information sharing, social norms

True cost pricing to be explored.

QUESTIONS, COMMENTS, IDEAS? RAISE THEM IN THE WORLD CAFE!

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