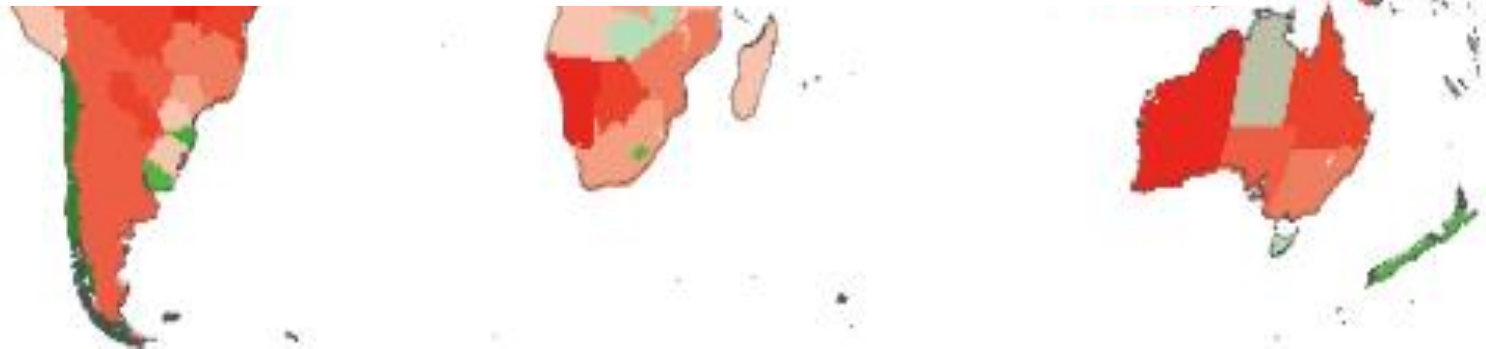


Food security: Challenges of agriculture in Finland and how they are connected to Europe and the rest of the world



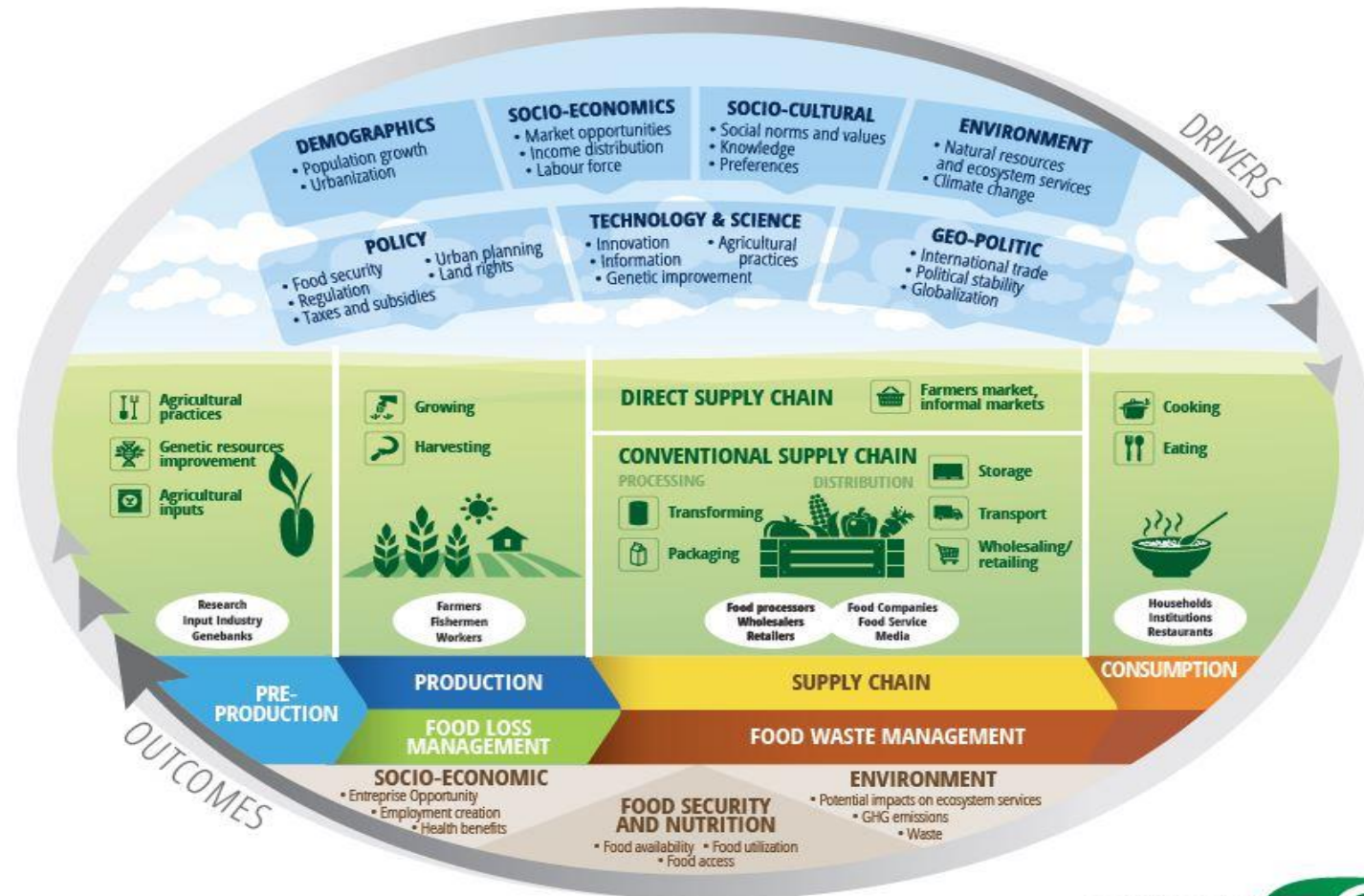
Kaisa Karttunen, Turku

Agriculture: part of a food system

- Agriculture is part of a food system
- Challenges in agriculture affect the whole food system and vice versa: problems in other system parts affect agriculture
- Acknowledging interdependencies: an action in one part will affect other parts, sometimes unexpectedly
- Siloed policies and governance - fail to acknowledge interactions and interdependencies in the system
- The Finnish food system is connected to European and global food systems

THE FOOD SYSTEM

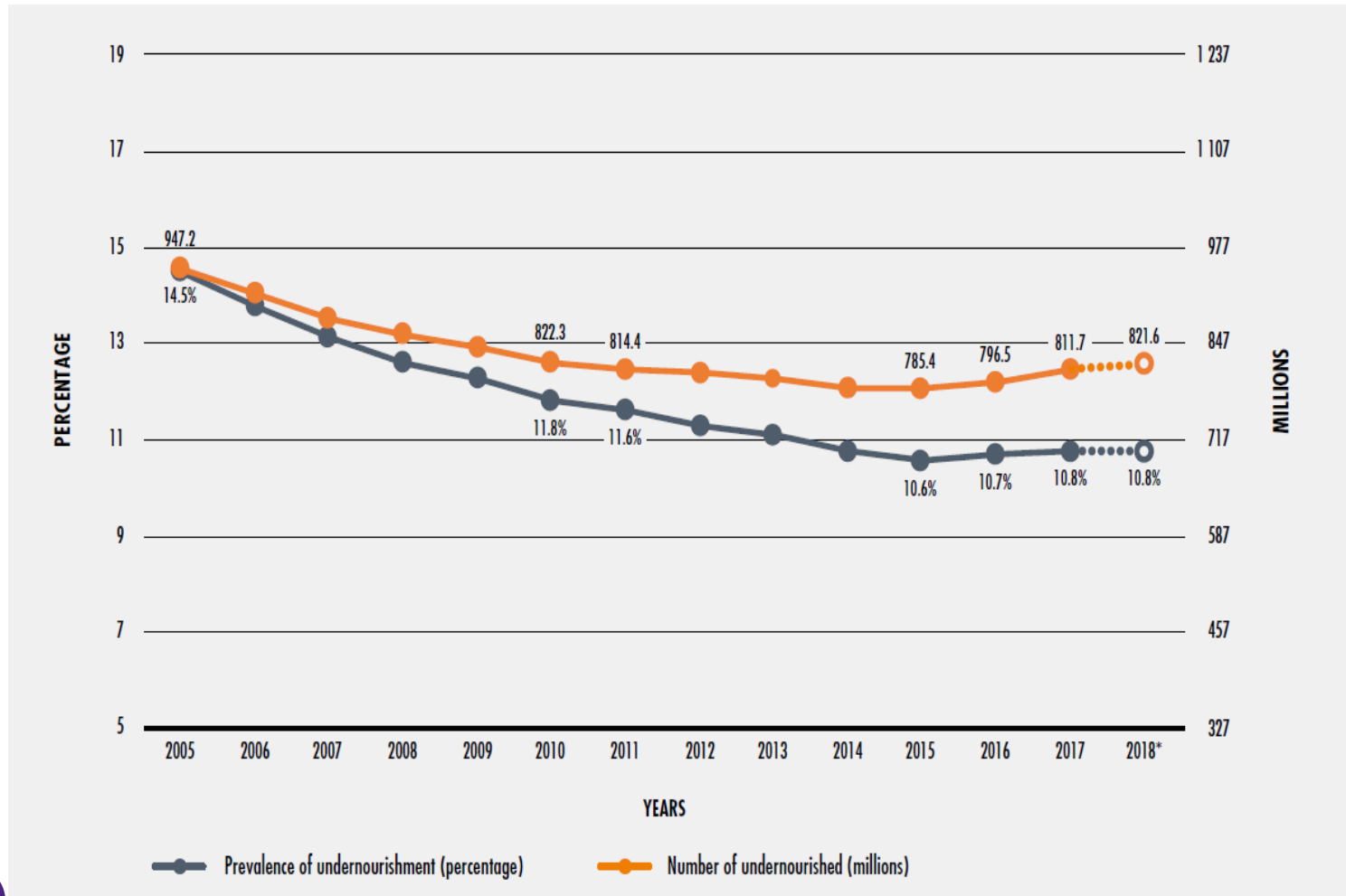
DRIVERS · ACTIVITIES · ACTORS · OUTCOMES



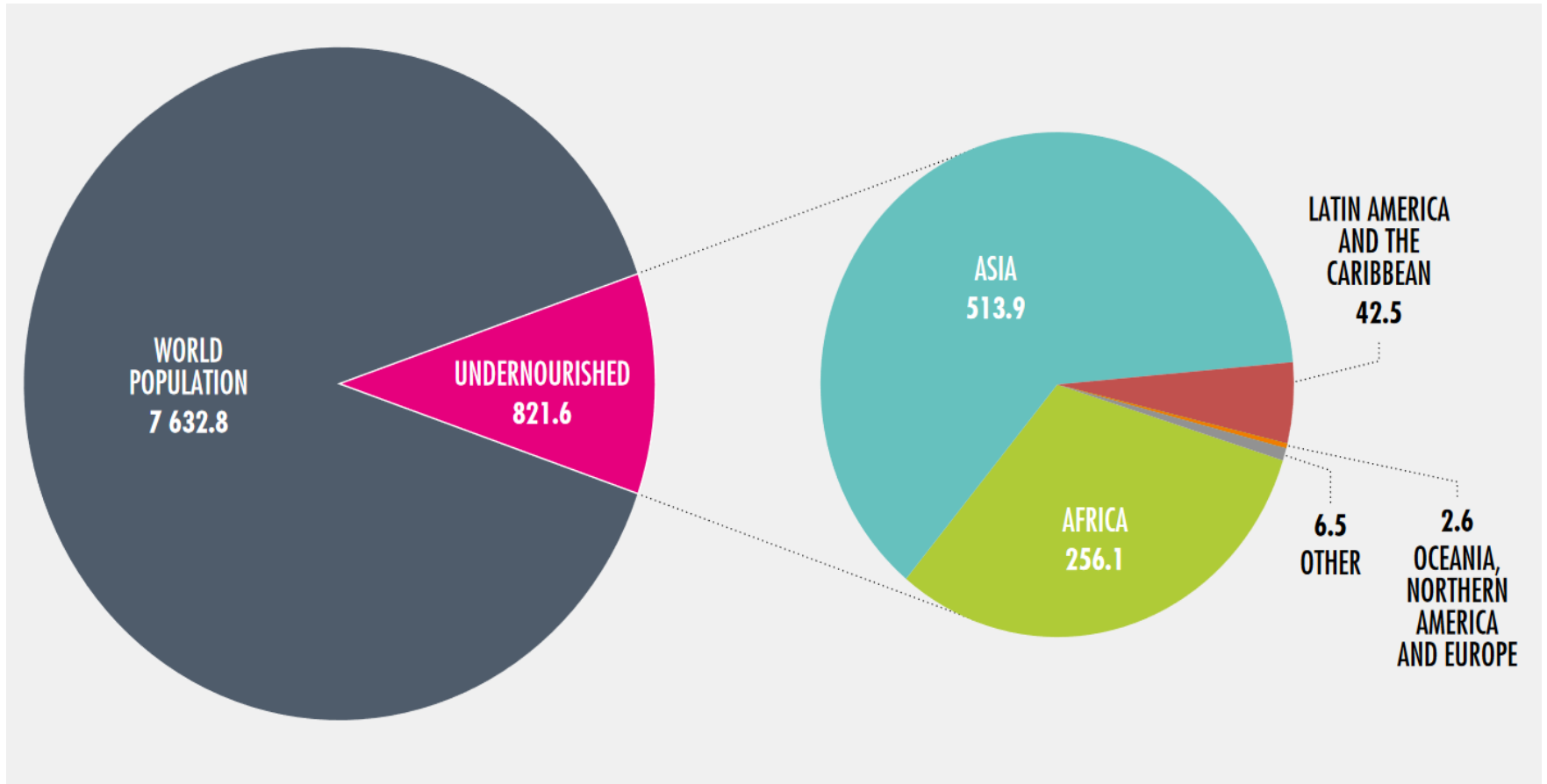
Food security and food system

One of the outcomes of a well-functioning food system is food and nutrition security that is achieved with minimal negative environmental impact

Undernourishment on the rise



Undernourishment in the World 2018 (in million)



Source: SOFI 2019

Many faces of malnutrition

**Every country
in the world
is affected by
malnutrition**

Countries with a burden of at least one of: childhood stunting, anaemia in adult women, overweight in adult women

- At least a single burden
- At least a double burden
- A triple burden



Why are nutrition problems increasing?

Climate variability and extremes

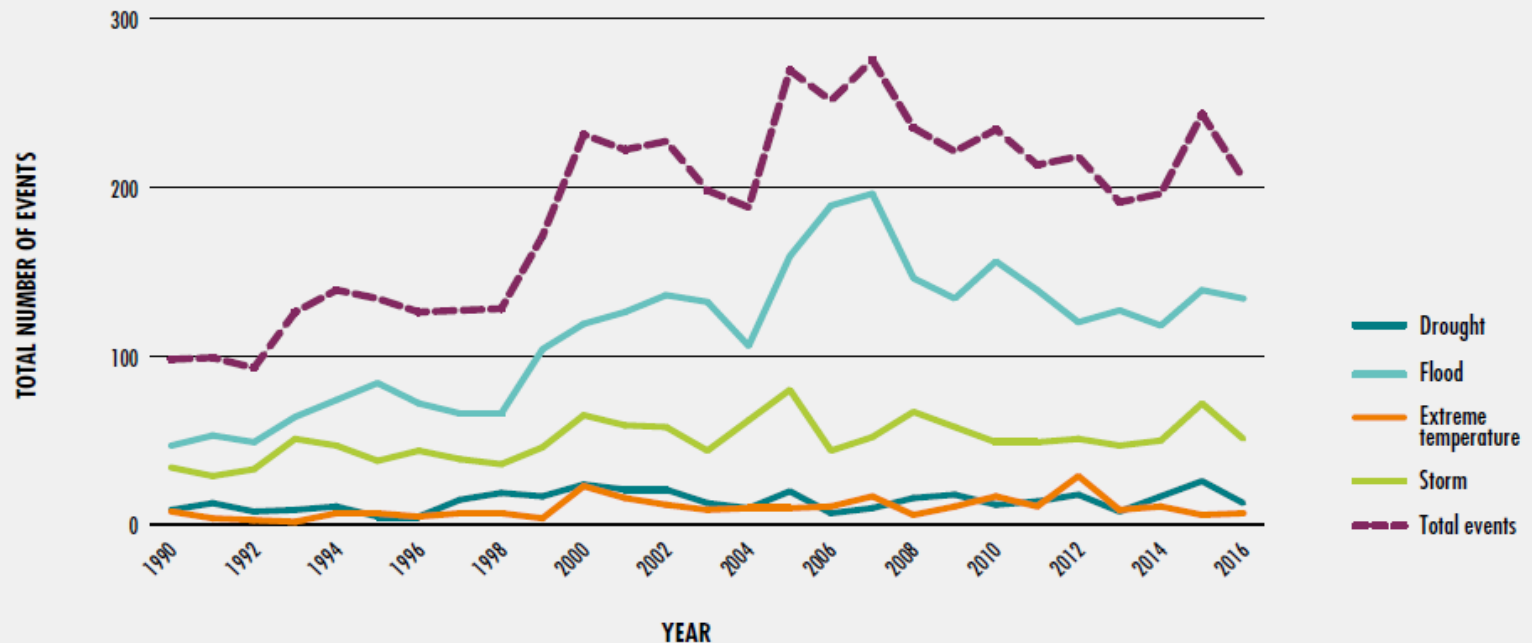
Conflicts

Economic turbulence

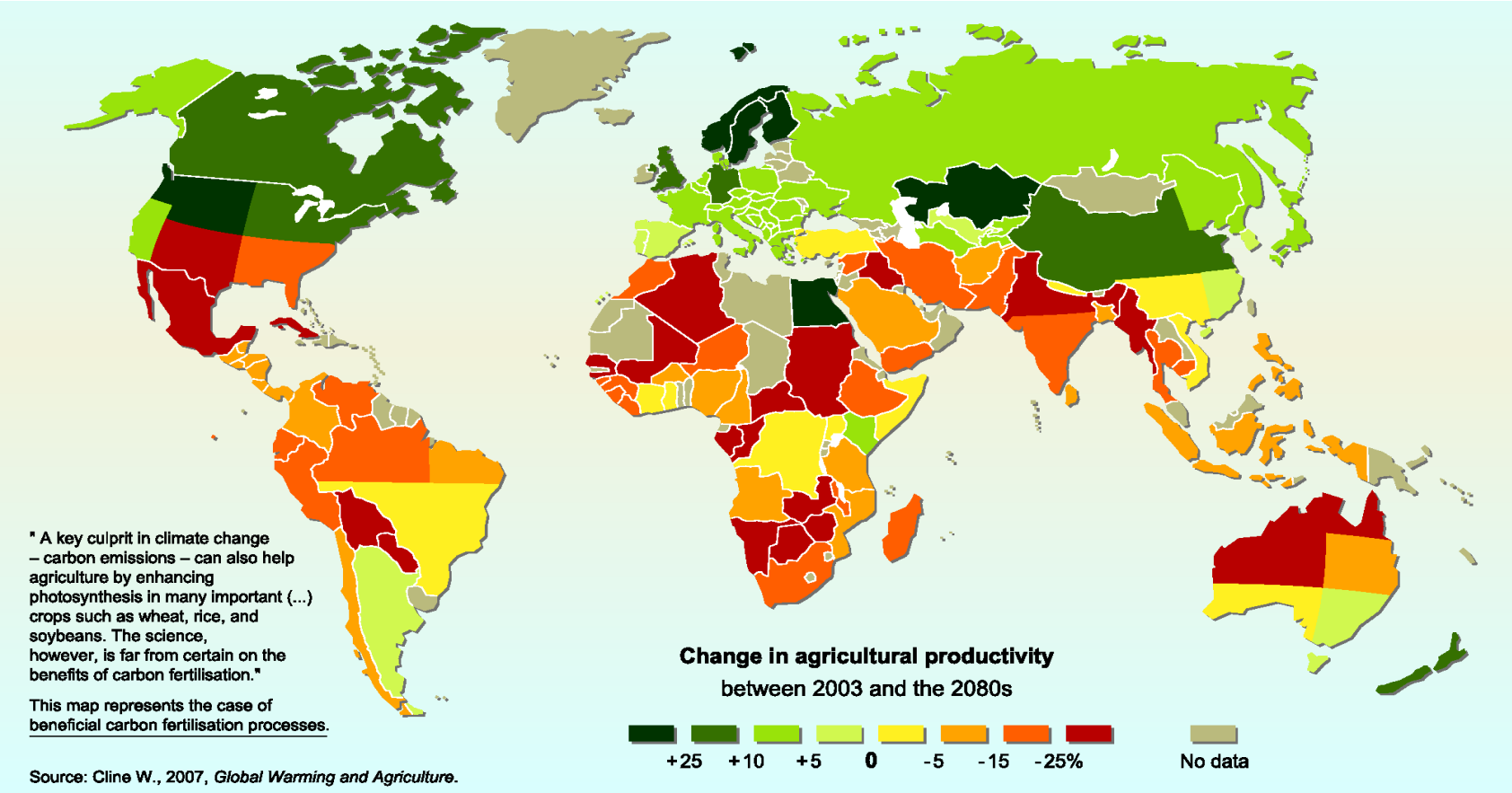



Disasters related to climate extremes

FIGURE 15
INCREASING NUMBER OF EXTREME CLIMATE-RELATED DISASTERS, 1990–2016



Global: Projected climate change impact on agricultural yields





***By 2050, CROP YIELDS will
DECREASE by 25%
if we don't address
climate change now.***



Food and Agriculture Organization
of the United Nations

Working for
#ZeroHunger



Tutkimus

Global: Emissions by sector



FAO 2015 (originally IPCC)



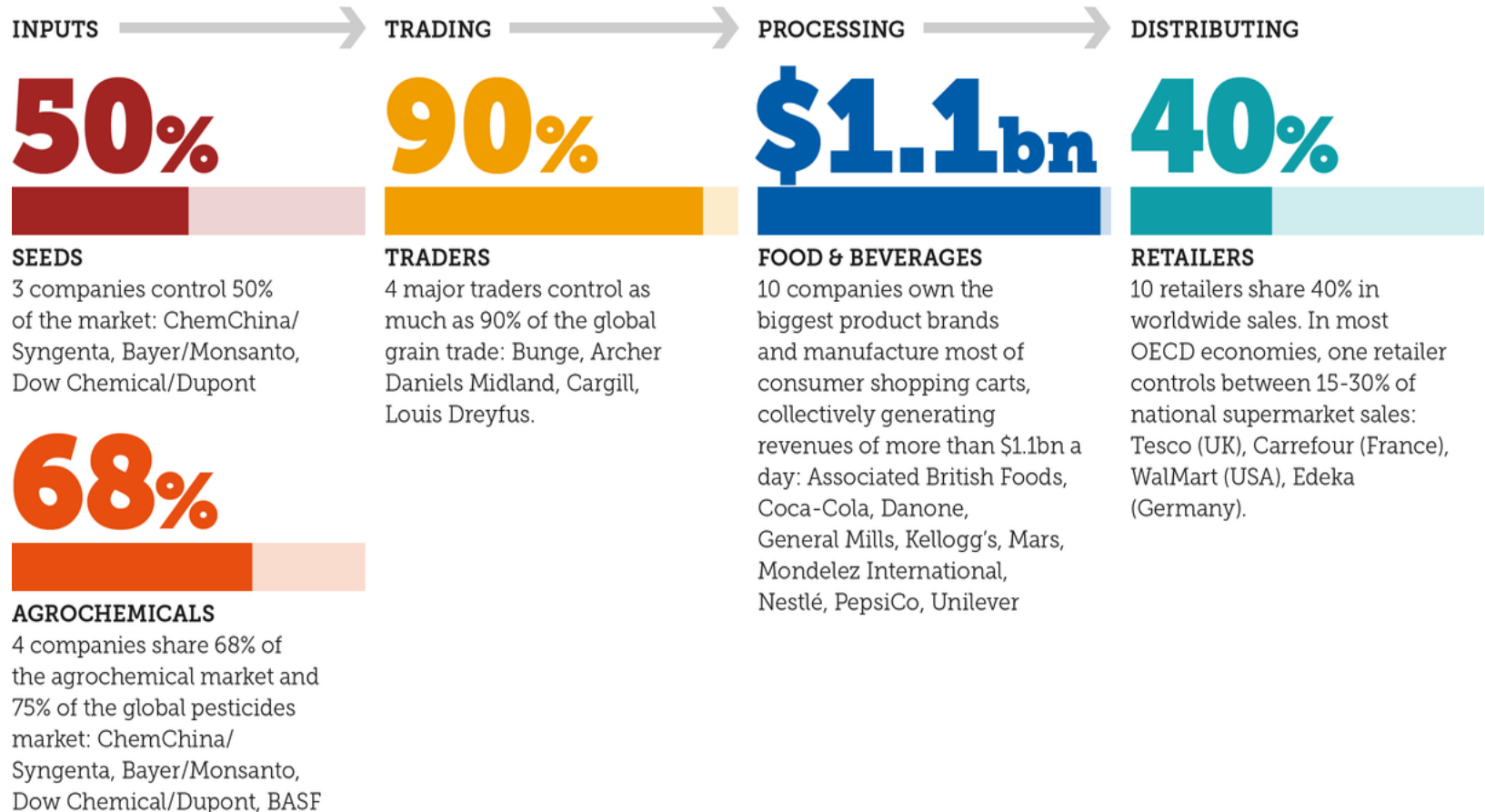
Global: Agrobiodiversity under threat

- More than **6 000** plant species have been cultivated for food on Earth
- Today, fewer than **200** contribute to food production globally, regionally or nationally
- Only **9** account for 66% of total crop production



Data and photos: FAO

Global: Centralisation, concentration



Bailey, B. 2017 Hoffman Centre

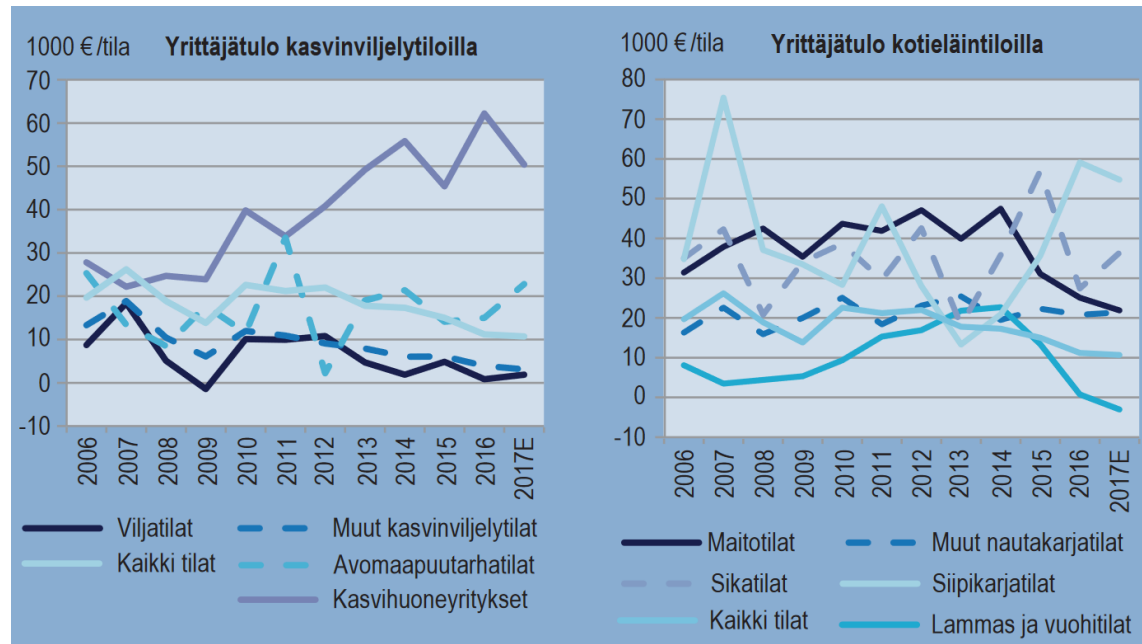
Challenges in the (Finnish) food system

- Low agricultural profitability
- Nutritional issues: overweight, obesity
- Environmental sustainability
- Food loss and waste
- Some people dependent on food aid
- Concentration of power & decision making



Finland: Low profitability of agriculture

- During the past 15 years, agricultural productivity increased substantially, whereas profitability declined
- Input costs (fertilizer, machinery, land) increasing
- Farmers' share of food retail prices declining
- Weather-related losses
- Number of farms declining, farm size increasing



Finland: Overweight and obesity

In 2017, 26 % of men and 28 % of women were obese

Main challenges in diets:

- not enough veggies, fruits and berries (differences btw men and women)
- men eat too much red meat compared to recommendations
- fat intake higher than recommended
- inadequate intake of fibre

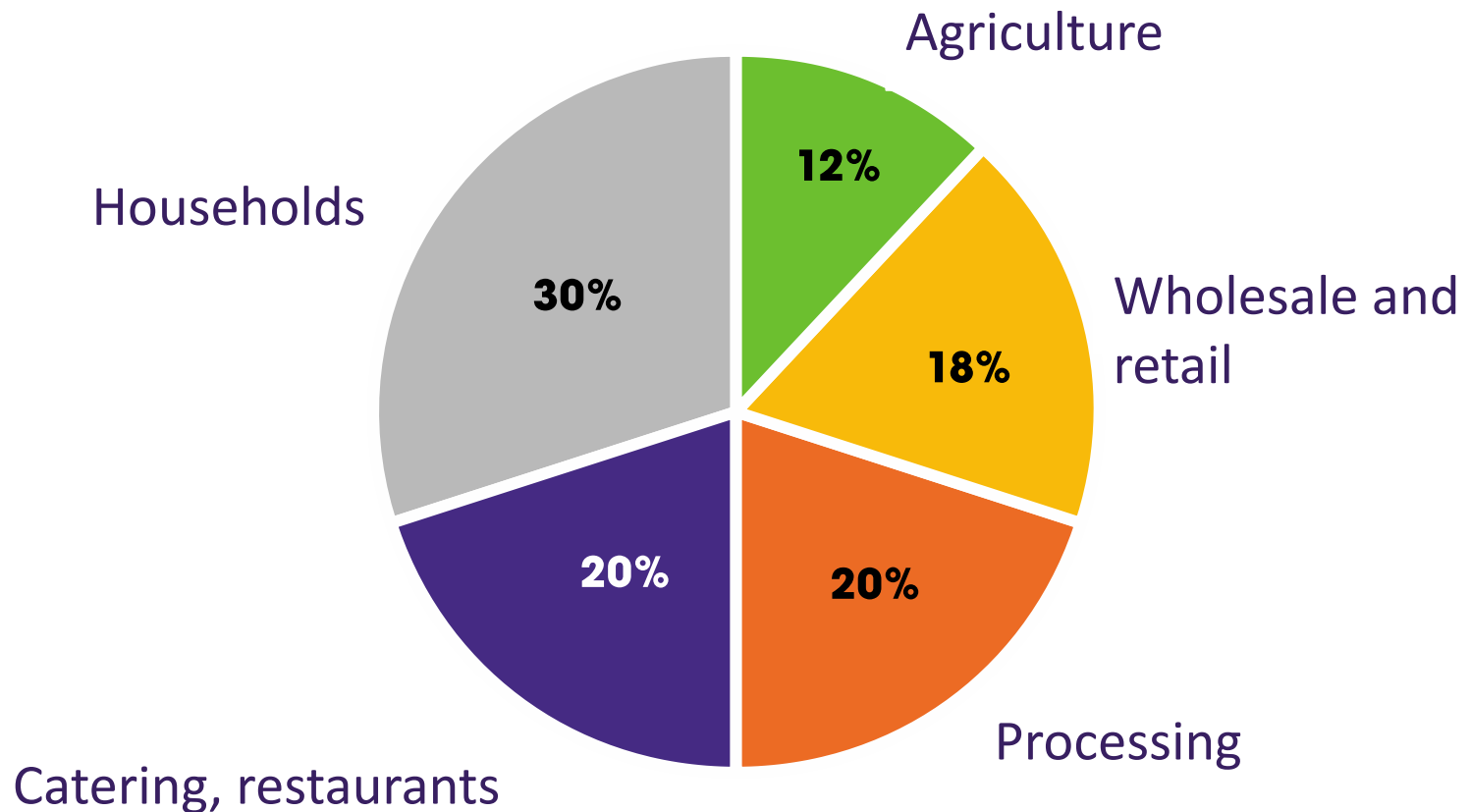
Source: THL FinRavinto

Finland: Environmental concerns

- Nutrient management: eutrophication of lakes and the Baltic Sea
- Soil erosion
- Climate change: adaptation and mitigation
- (Agro)biodiversity
- Food loss and waste

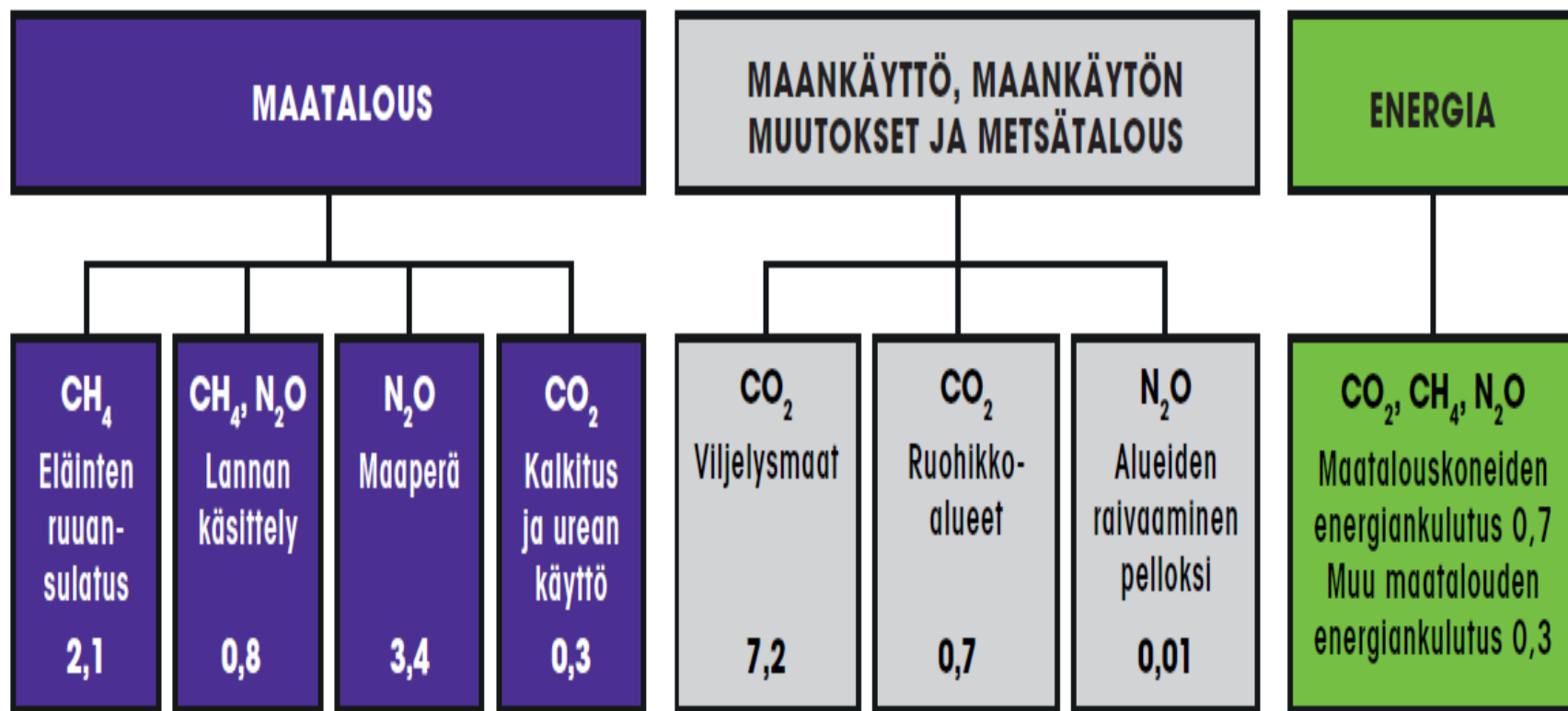


Finland: Food loss and waste 400 mill kg/year



Source: Luke

Finland: Climate change mitigation in agriculture



Finland: Climate change adaptation needs

Climate
variability
and extremes

Diseases and
pests

Weeds

Variation of
yields

Winter
conditions

Frost

Need for
irrigation

Luke 2017

Fairness of the food system

- Access to nutritious food constrained from many
- In Finland, tens of thousands of people partly dependent on food aid, globally hundreds of millions
- For these people, food price matters. But price matters also to producers who cannot cover their production costs.
- The physical distance between producers and consumers is growing. Only few can participate in decision making - concentration of power.



Finland's role ?



Finland vs. EU vs. World

	Finland	EU	World
Population	5.5 million	510 million	7 600 million
Agricultural land	2.2 mill ha	175 mill ha	1 500 mill ha
Agricultural land/capita	0.40 ha	0.34 ha	0.20 ha
Cereal production	3.7 mill tn	317 mill tn	2 400 mill tn
Milk production	2.3 mill tn	168 mill tn	747 mill tn

Finnish food

- 78-80% of our food consumption from Finnish origin (Luke)
- High dependence on imported inputs
- A major environmental impact outside our borders: outsourcing water and land use, displacing biodiversity loss and GHG emissions
- Production practices under or beyond our control
- Short-term food security achievable by importing, in longer term several risks may materialize
- We need a responsible, fair and sustainable food system (see Twitter @justfood_stn)





Thank you!