

# Transition in food system


Ivo Demmers, Programme Director

Food Security and Valuing Water Research Programme

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# Wageningen mission



To explore  
the potential  
of nature to  
improve the  
quality of life

# Wageningen University & Research

## Main global challenges



## Needed transitions



## Impact on global challenges



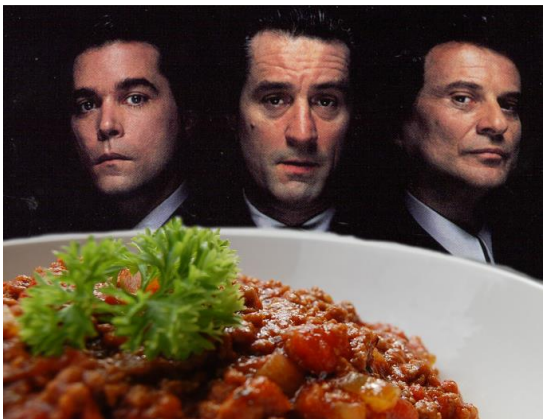
# Food is ...



## ... Life

### **Roald Amundsen**

(1st man @South Pole 1912) declared that " ...the cook's contribution was greater than that of all others in the party..." (BTW the competing British team lost)



## ... Culture

### **Martin Scorsese**

uses cuisine to define the characters and make us, the audience, understand why they loved being gangsters and what a life like that, despite its obvious risks and drawbacks, promised for them.  
Good Fellas (1990)

# A short quiz ... Q1

What's the difference in standard semi-skimmed milk vs. organic? The difference is...

**8**

cents

**11**

cents

**14**

cents

**21**

cents

# A short quiz ... Q2

On how many crop species do we rely for 66% of total crop production world wide?

9

14

110

200

# A short quiz ... Q3

How much % of the world's agricultural land is used to produce animal products (incl. feed) vs. plants?

**44**  
%

**55**  
%

**66**  
%

**77**  
%

# A short quiz ... Q4

What is the number one dietary risk factor for chronic diseases according to the Global Burden of Disease study (GBD)? A diet ...

**high in  
red meat**

**low in  
grains**

**high in  
sodium**

**low in  
vitamins**



# We fail, leading to hunger...

**Hunger:**  
828 million people daily



**46 million more than in 2020**

**150 million more than in 2019**

**~ 9,8% of world population**

**While production increased**



# We fail in providing healthy diets...

**2 b.**  
people  
overweight

**45 million** children <5 suffer from wasting,

**39 million** children were overweight

**42%** world population cannot afford healthy diet:

- Lack of micro nutrients
- Iron deficiency anemia
- Poor diets are number **1** cause of death



# We fail in staying within planetary boundaries

**80%**

global  
deforestation

**70%**

Terrestrial  
biodiversity loss

**50%**

Aquatic  
biodiversity loss

**70%**

fresh water  
for agriculture

**52%**

agricultural soils  
degraded

**30%**

GHG  
emissions





This enormous sector does not provide a living ...

**75%**

of agricultural workers are poor and live of <1US\$/day





And we waste 30% of the food  
we produce ...





# We need a transition in our Food System



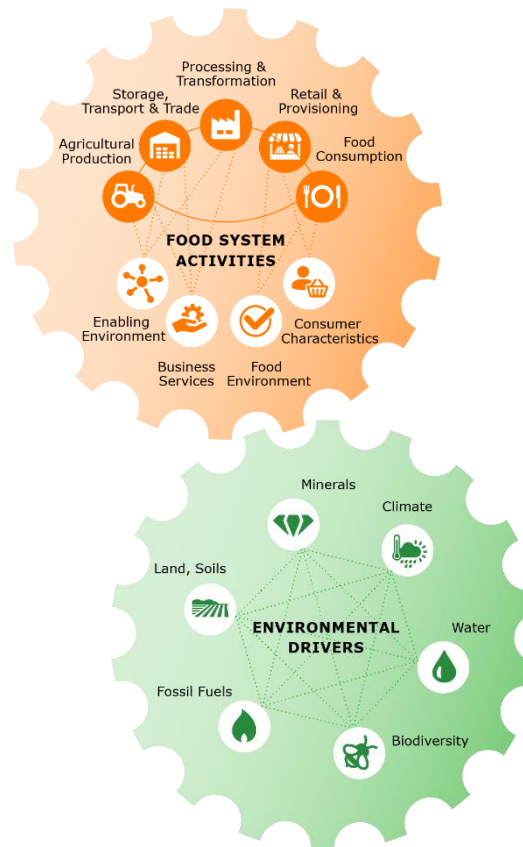
**Dilemmas**

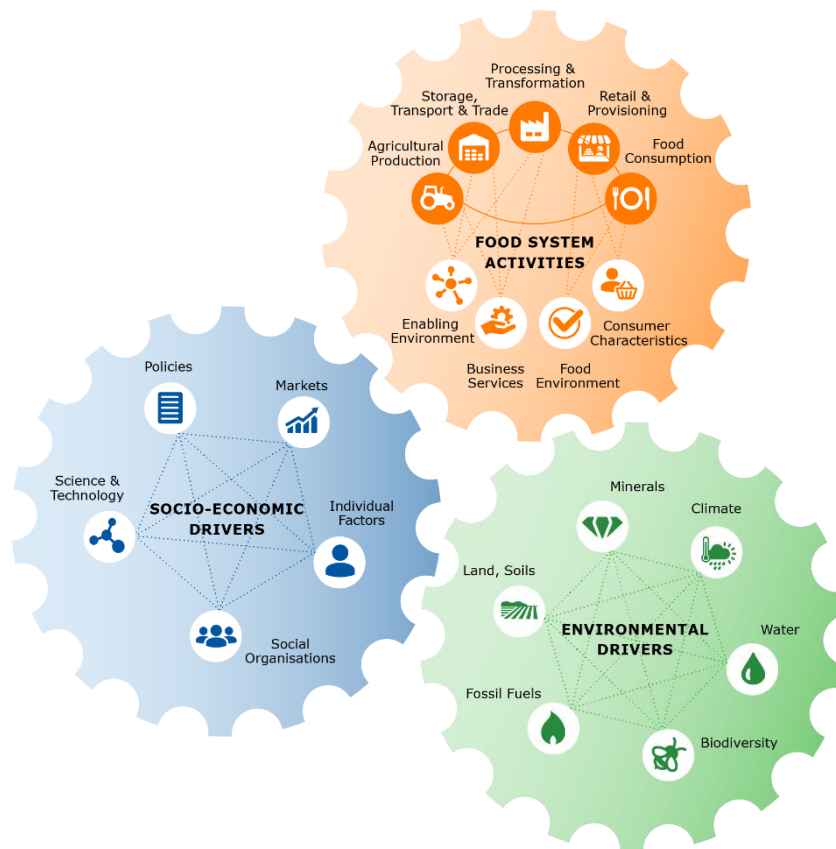


# The food system ...





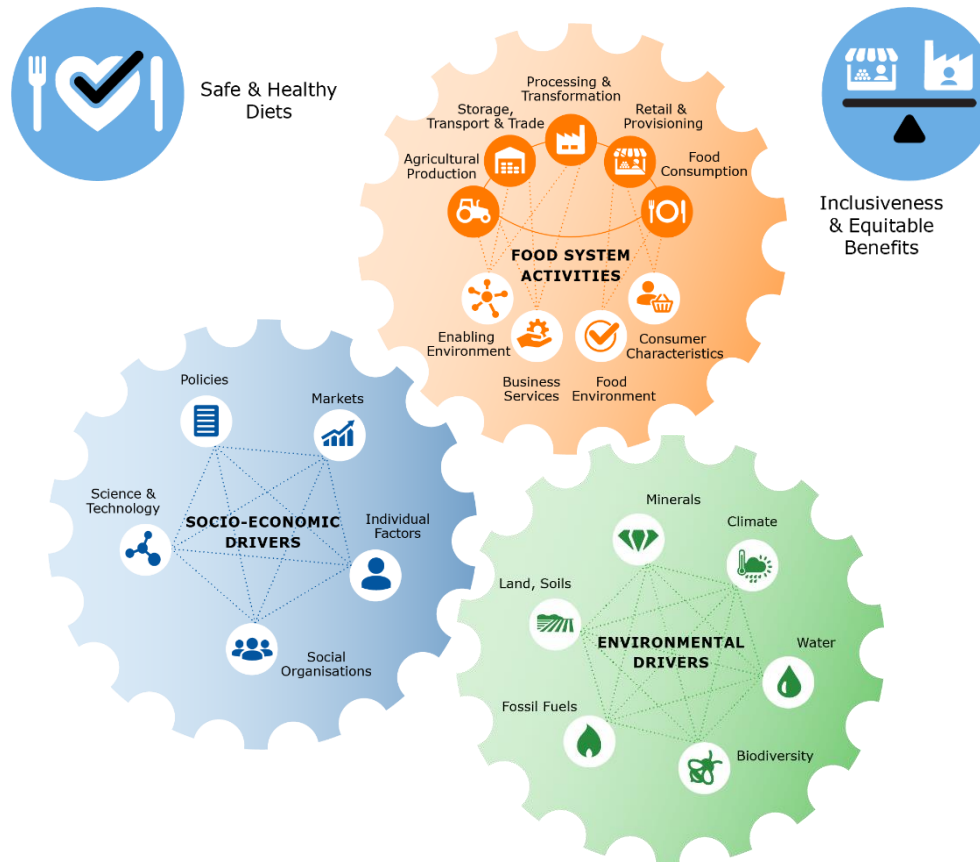


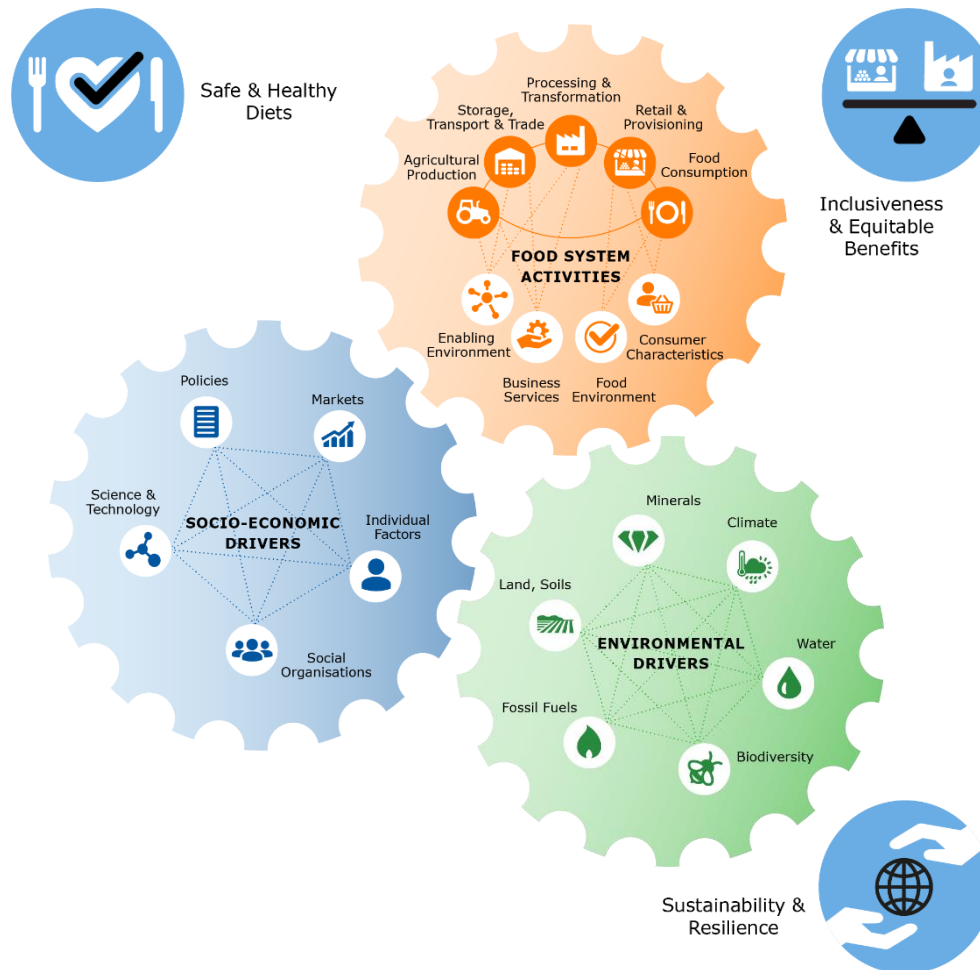


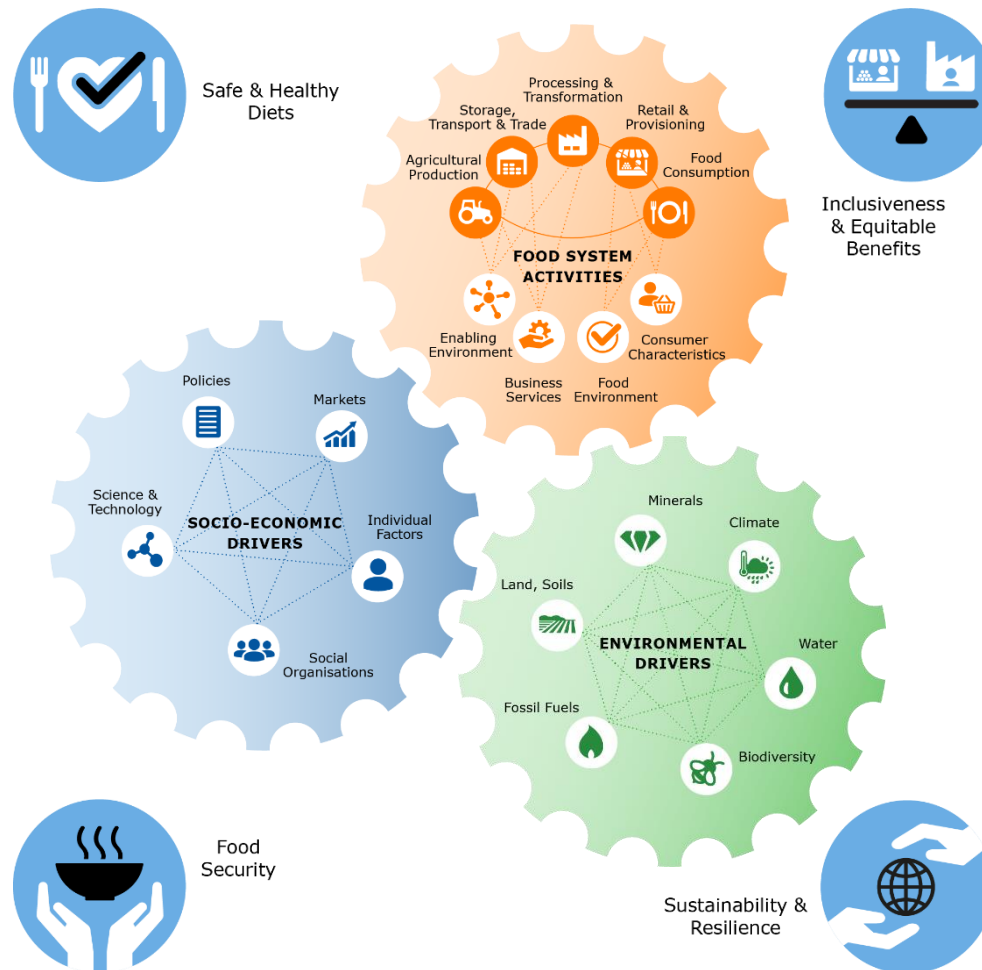


Safe & Healthy  
Diets



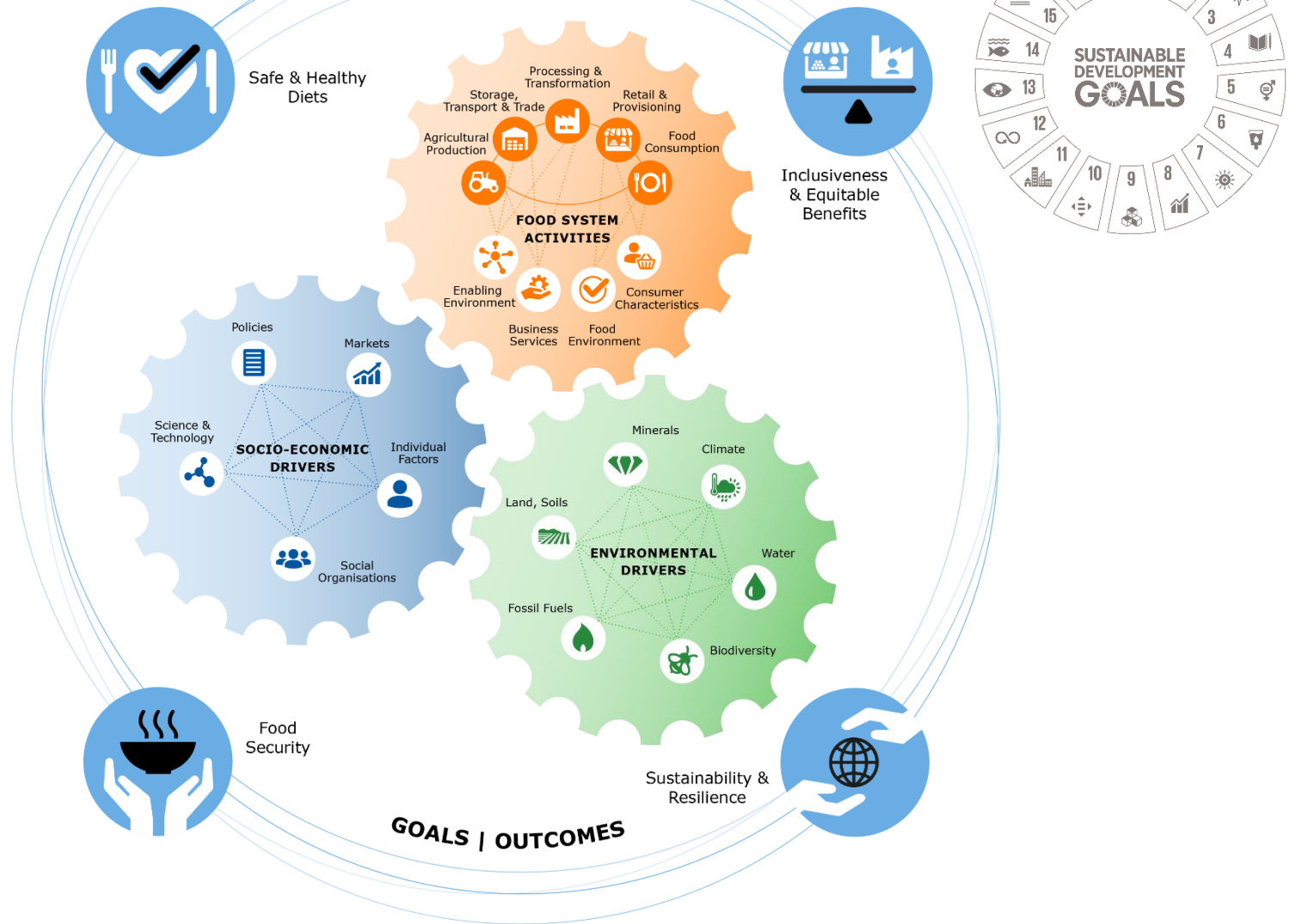






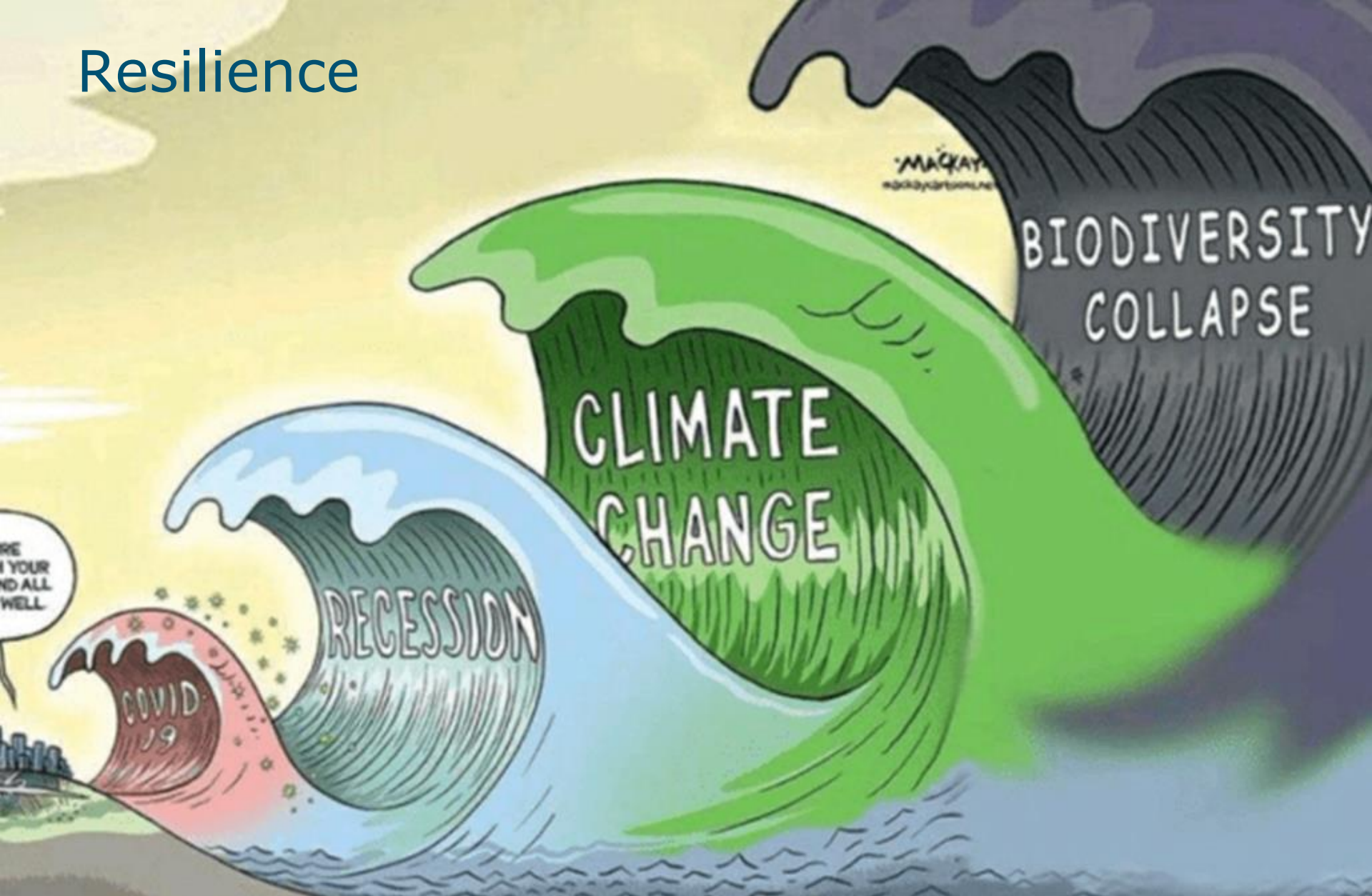
# Food systems framework

Van Berkum et al. 2018, Wageningen University & Research





# Resilience





# Important role for biodiversity

**Biodiversity is our 'safety net' because it increases resilience:**

Biodiversity loss will reduce the ability of ecosystems to regulate temperature, water availability and greenhouse gas emissions



# We can make a change



# We can make a change, because ...

**Because we all consume food, everyday.  
We all are part of the food system**

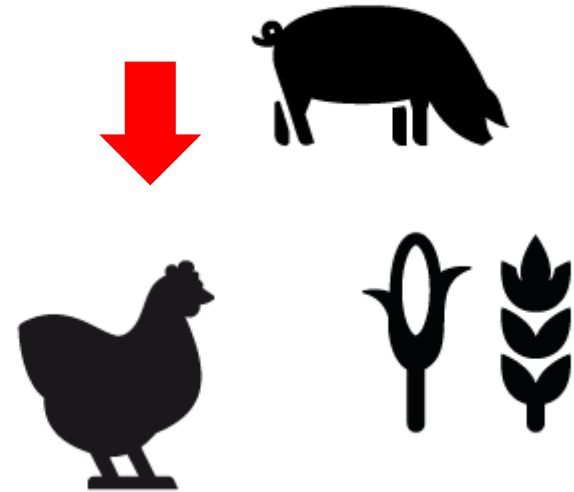
**Food systems contribute to 30% of Green House Gas emissions**

**We invest a lot in food, so use this in the transitions**

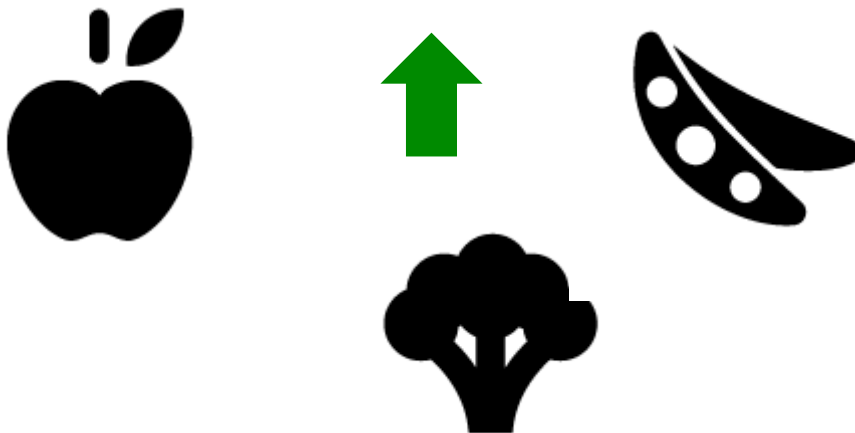
# Change in diet

**(Europe)**

**Animal products, grains and tubers**



**Vegetables, Legumes, Fruit**



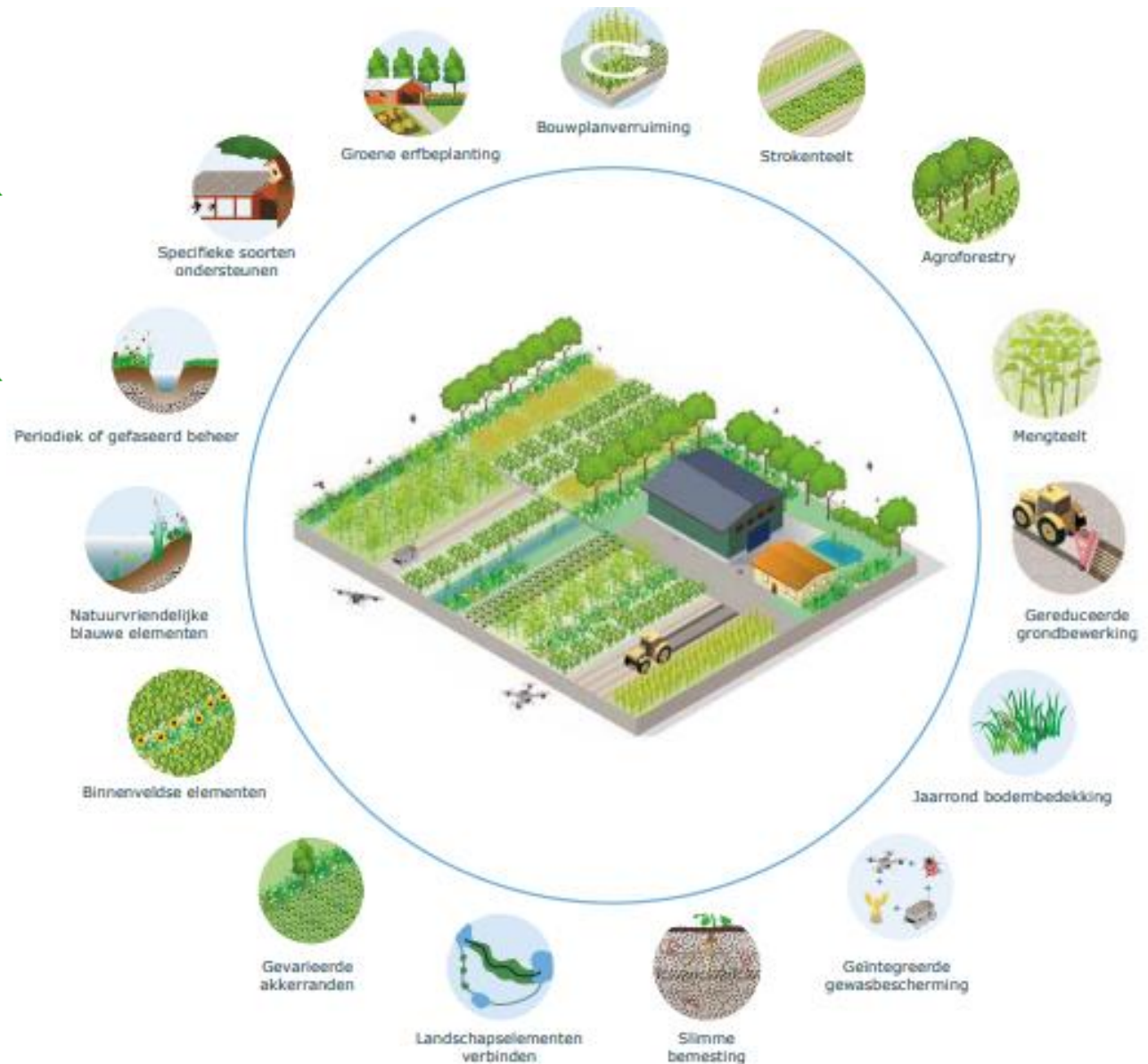


# Change in production

Biodiversity



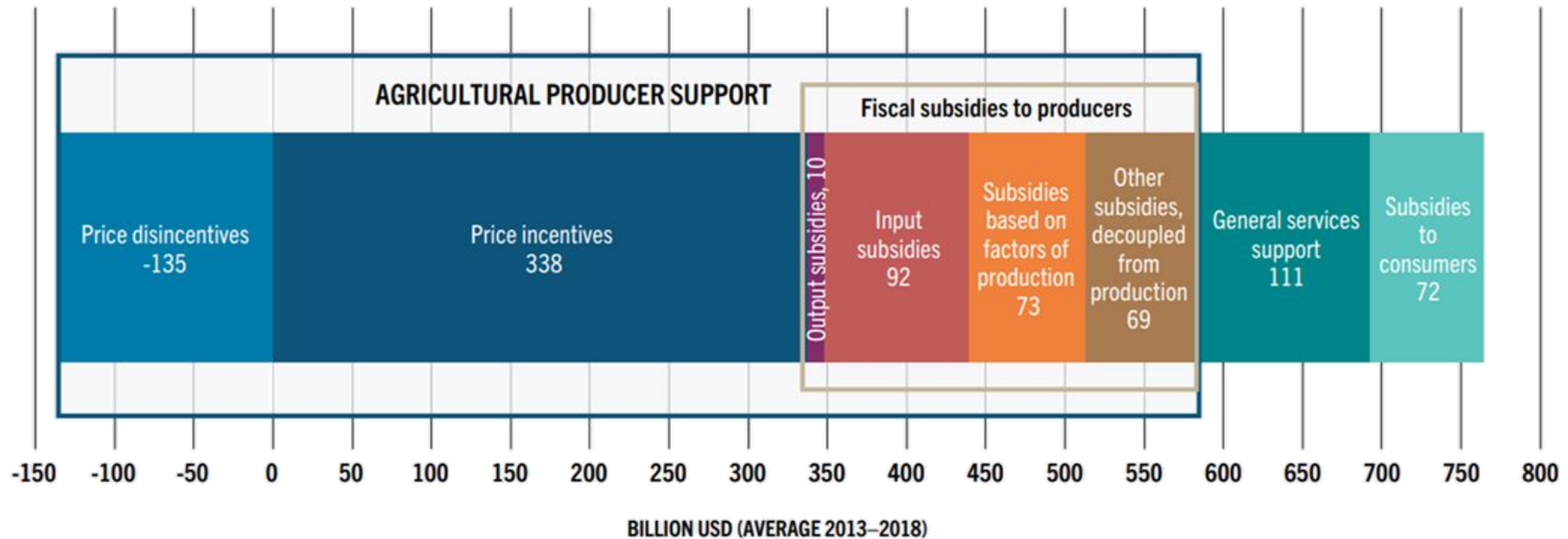
Circularity



# Embrace differences - Location specific solutions



# Role of agri & food financial support



SOURCE: Ag-Incentives. (forthcoming). *Ag-Incentives*. Washington, DC. Cited 4 May 2022. <http://ag-incentives.org> with data from OECD, FAO, IDB and World Bank compiled by the International Food Policy Research Institute (IFPRI).

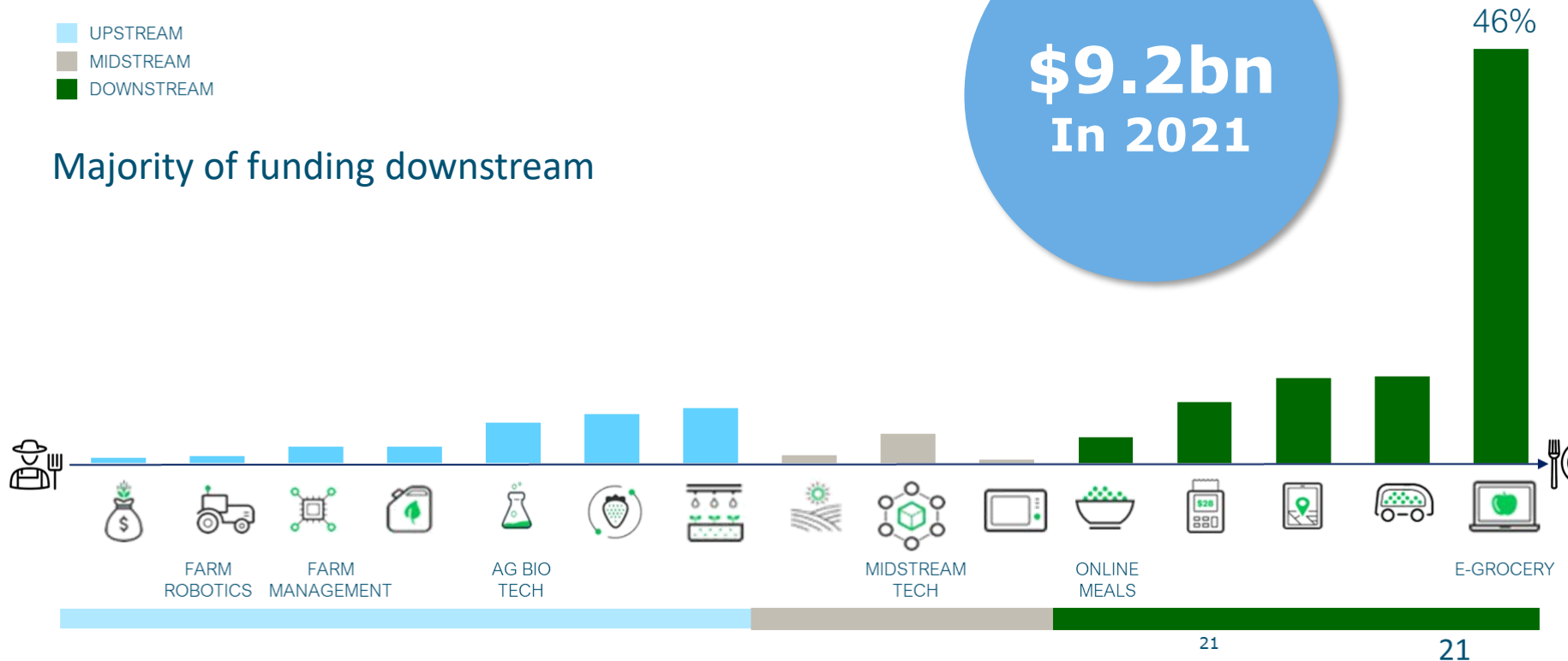
**\$630 bn**  
annually

# Capital invested in food system

UPSTREAM  
MIDSTREAM  
DOWNSTREAM

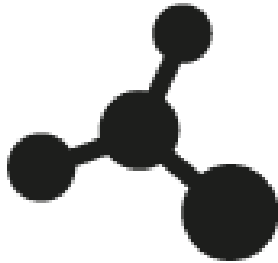
Majority of funding downstream

**\$9.2bn**  
**In 2021**





# Change in our 'ecosystem'



## Act together!

- States
- Sub national authorities
- Finance and trade
- (food) Industry
- Farmers
- Consumers
- Research & education

# Call to action

1. Reduce food loss and waste
2. Consume more plant-based food (especially beans)
3. Help to increase diversity



# Thank you

"A ship is always safe  
at the shore, but that is  
not what it is built for."

***Albert Einstein***



E-mail: [Ivo.Demmers@wur.nl](mailto:Ivo.Demmers@wur.nl)

Internet: <http://www.wur.eu/foodsecurity-valuingwater>

Intranet: <https://intranet.wur.nl/Project/FoodSecurityandValuingWater>