



TRansition paths to sUustainable
legume-based systems in EEurope

Background to the TRUE-Project

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Legumes, and their ecological significance, is not common knowledge. *Why?*



Grain legumes (pulses and oleaginous types)



Forage legumes

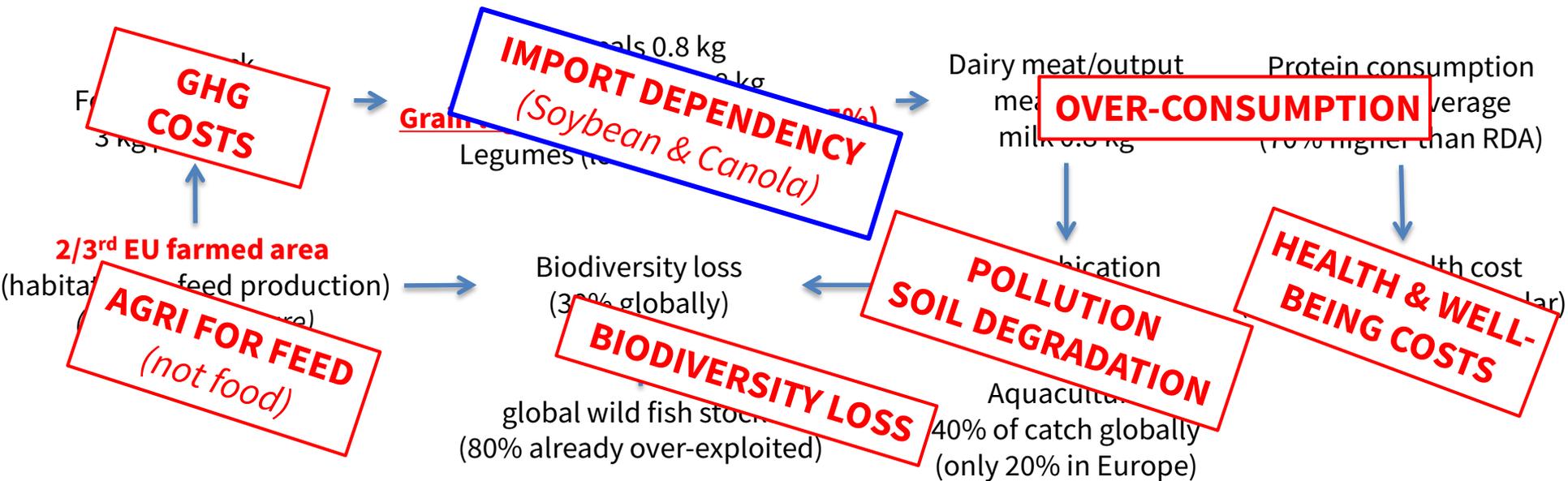


Grain legume production in Europe is 1-4%



- Protein-puzzle, legume-paradox, system problems (the 3 P's)

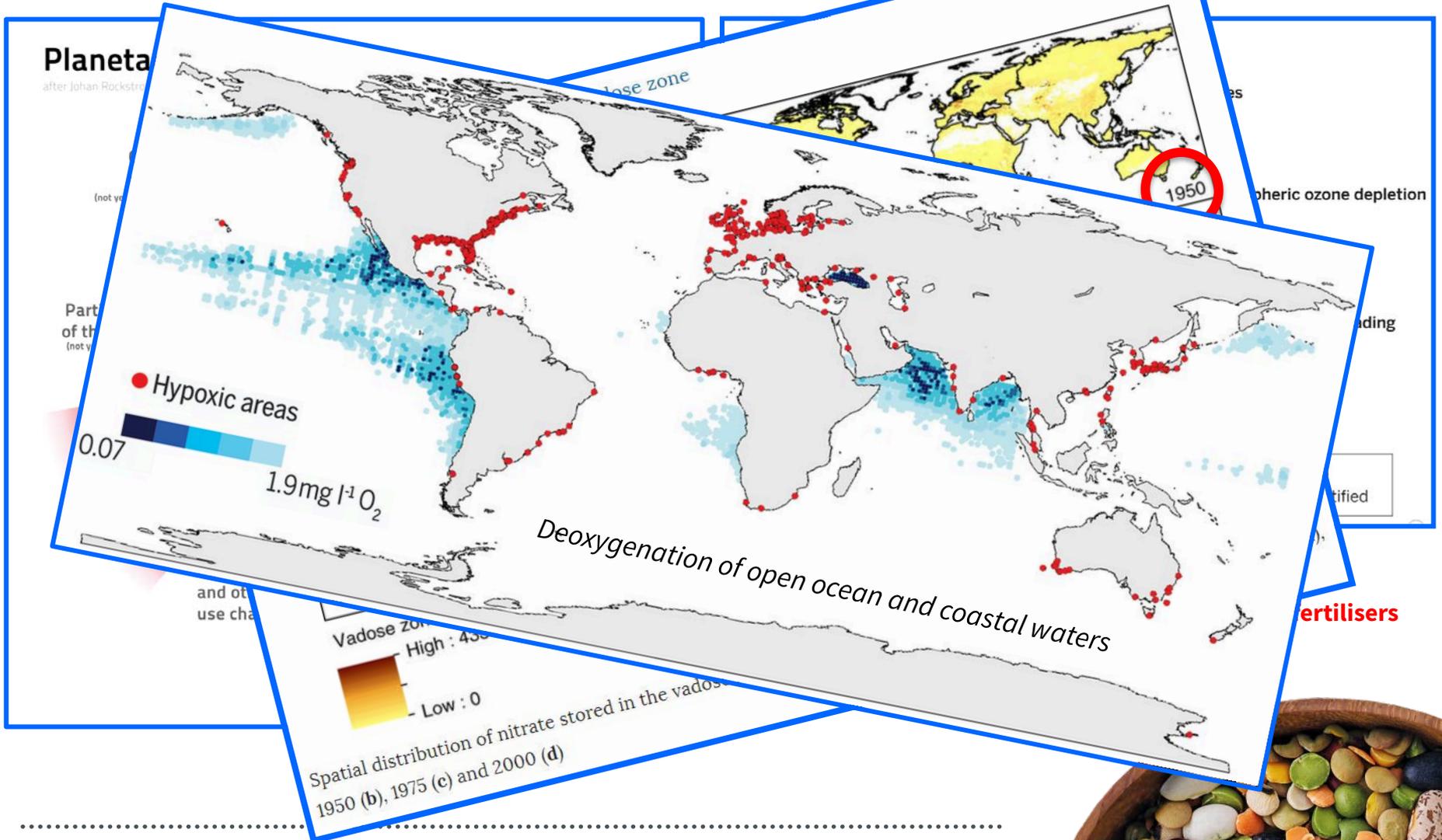
Q: Might regionalised legume-based value chains help resolve this puzzle?



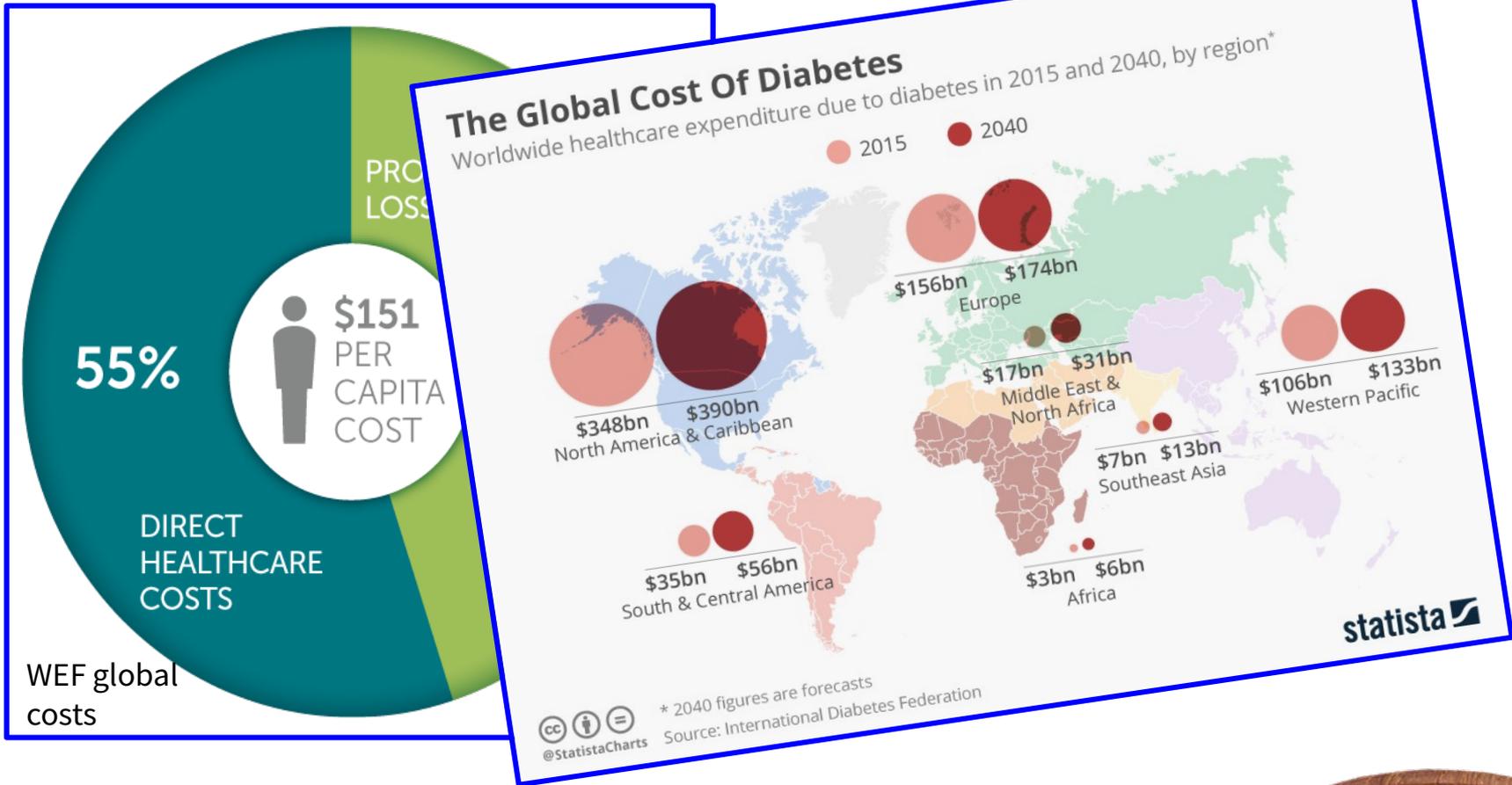
[Westhoek et al., 2011. The Protein Puzzle.](#)



Why is there a lack of reaction to reactive-nitrogen?



Environmental health issues are allied to human (and animal) health issues



Q - What policy-design and -implementation mechanisms might resolve solve all challenges simultaneously?



Legumes and sustainable economic development



- ‘The Three Pillars of Sustainability’ are not harmonised
- **Sustainable development (SD) indicators** monitor United Nations’ **SD Goals**



The Three Pillars of Sustainability, René Passet (1979). *L'économie et le vivant [The economic and the living] 23*, Payot.

[Purvis et al., \(2018\) Three pillars of sustainability: in search of conceptual origins. *Sustainability Science*](#)

- Can development of legume-focused system indicators help ?



The Sustainable Development Goals & Indicators



- 17 Sustainable Development Goals, and
- 167 Sustainable Development Indicators
 - *Not specifically targeted to manage agri-food and -feed value-chains*
 - *Tend to operate at national level or higher (not regional or local)*

“The cultivation and consumption of legumes produced locally needs accommodated as a cornerstone approach to realise sustainable food systems”





A strategic array of push-, pull- and enabling -capacities are required to achieve legume-supported agrifood systems locally

Common Agricultural Policies & Good Governance*

Independent extension services

Food-sector programmes (i.e. plant protein)

Mandatory soil testing

Support producer & processor associations

Subsidise development of supply chain capacities (small scale)

PUSHING

economic incentives and raising legal requirements

Research & Innovation

‘Upscale’ legume breeding

Food & processing technology

Protein market observatory

Develop agri-food policy & law

Methods for ‘full-cost accounting’

Impact indicators for consumption on environment

ENABLING
new norms

Business & Education

Food literacy
Sustainable agri-food system awareness

School & public education

Green food service procurement

Knowledge portals (national)

Develop sustainable-business logics

Support ‘food Transparency’

PULLING

Increasing demand for more-sustainable products

CURRENT FOUNDATION IS UNSTABLE

Confused policies, Rising (food) inequality, CSR (Corporate Social Responsibility) not enshrined in law

Image adapted from Vasconcelos et al.,(2020) *World Review of Nutrition and Dietetics* **121**, doi:10.1159/000507498

*****Good-governance ensures the creation, protection and fair-distribution of wealth****





Join the ‘Legume Innovation Network’ (LIN)?

- The TRUE-Project will come to an end in Sept 30th 2021.
- A legacy LIN will be formally launched in April’21.
- The LIN is currently gathering Europe-wide, even international, membership.
 - Register on the Digital Innovation Hub.
 - Register for the members only LinkedIn LIN group.
 - Watch-out for the LIN website/resource centre.
- The structure and success of the LIN will be determined by its membership.
- It is to be led by “innovators” of all kinds.
- For more information on signing-up for the legacy LIN see

<https://www.true-project.eu/legume-innovation-network/>





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