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APD | DIÁLOGO AGROPOLÍTICO BRASIL · ALEMANHA
AGRARPOLITISCHER DIALOG BRASILIEN · DEUTSCHLAND

Crises and Challenges in Global Food Systems

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Distinguished Professor at Bonn University,

Chairman of the Scientific Group of the Food Systems Summit in 2021.

Brasilia, September 28, 2022

Crises and Challenges in Global Food Systems

Overview

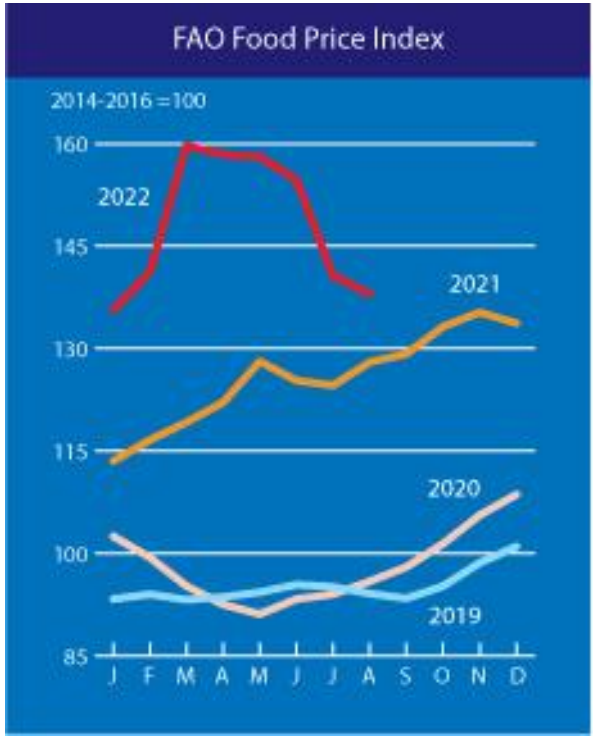
1. **Crises causes & Consequences**

2. Solutions and way forward

*What **Brazil** does in food, agriculture, and environment matters for the world*

*What happens to **world food**, agriculture and environment matters for Brazil*

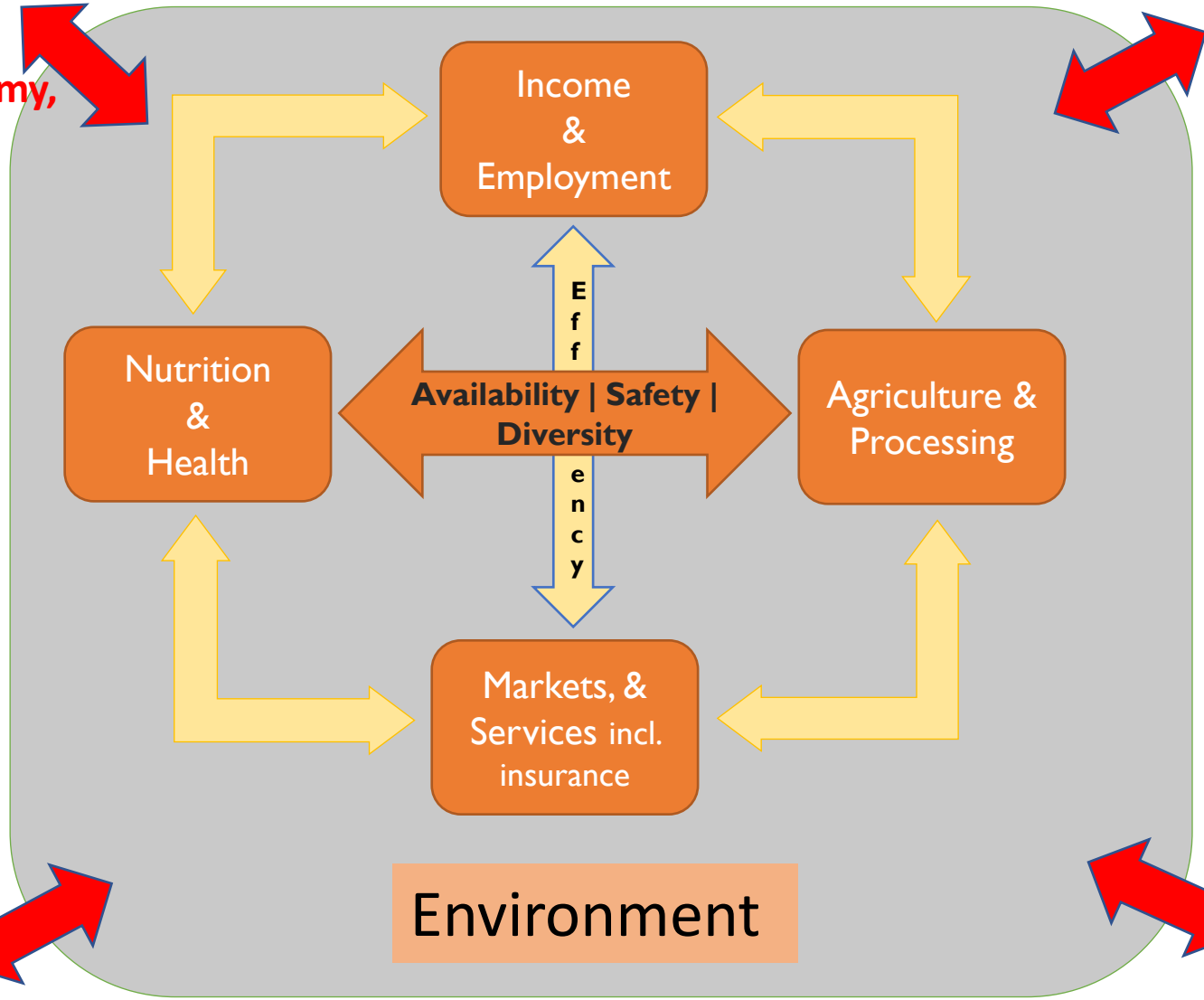
The multi-dimensional crisis



1. **Covid19** disrupting food **value chains**
2. **Climate change** destroys food systems **resilience**
3. **Wars and super power conflicts** add uncertainty to **investment** and hinder **trade**
4. **Food price** inflation make **healthy diets unaffordable**
5. **High energy prices and fertilizer costs** constrain agriculture and food industries
6. **Accumulated debts** cut social protection and nutrition programs
7. **Destruction of nature** erodes biodiversity and food system

https://www.fao.org/worldfoodsituation/foodpricesindex/en/

Food System under Resilience Stress



Climate Change, Wars, Macro-Economy, Pandemic

Climate Change, Wars, Macro-Economy

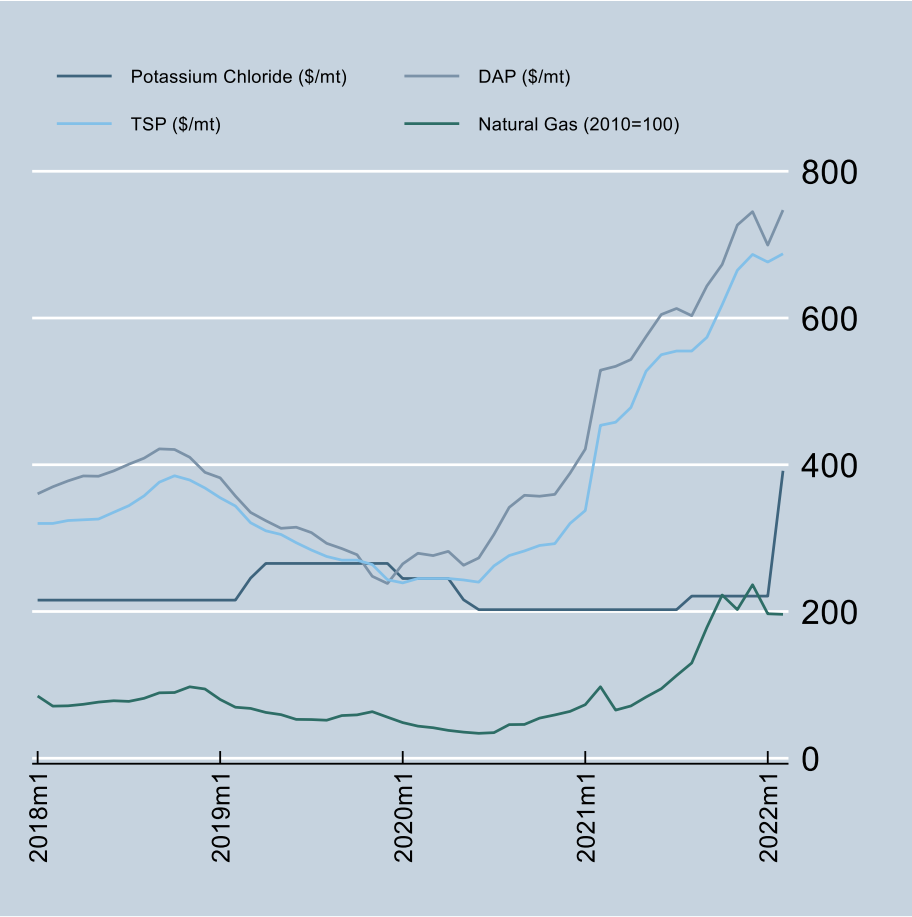
Climate Change, Wars, Macro-Economy, Pandemic

Climate Change, Wars, Macro-Economy

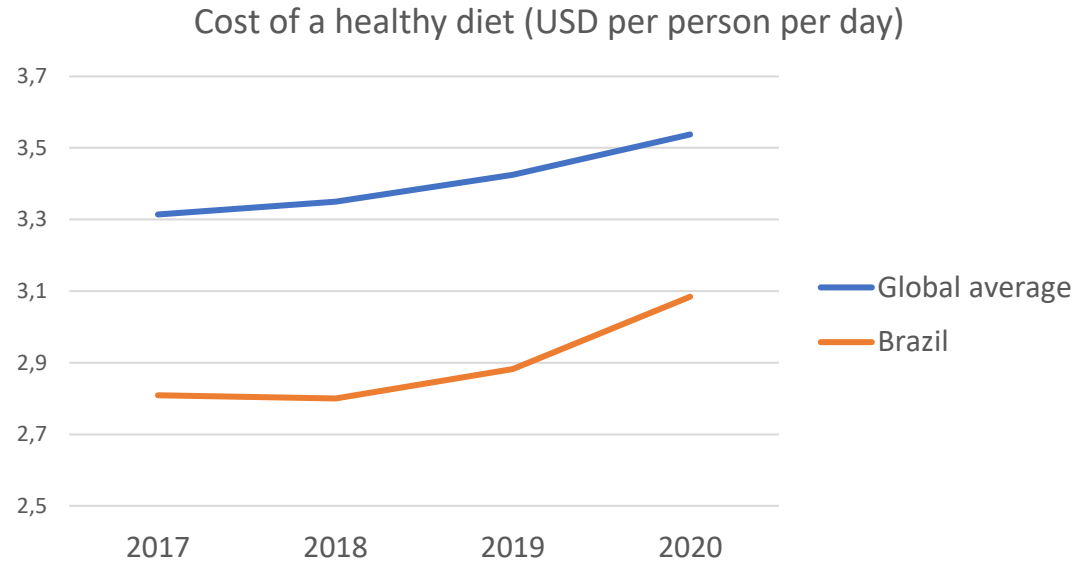
J von Braun, ZEF 28-9-2022

Source: adapted von Braun et.al. Nature Food 2021

High energy & fertilizer prices make food production expensive



Source: World Bank 2022 (pink sheet).

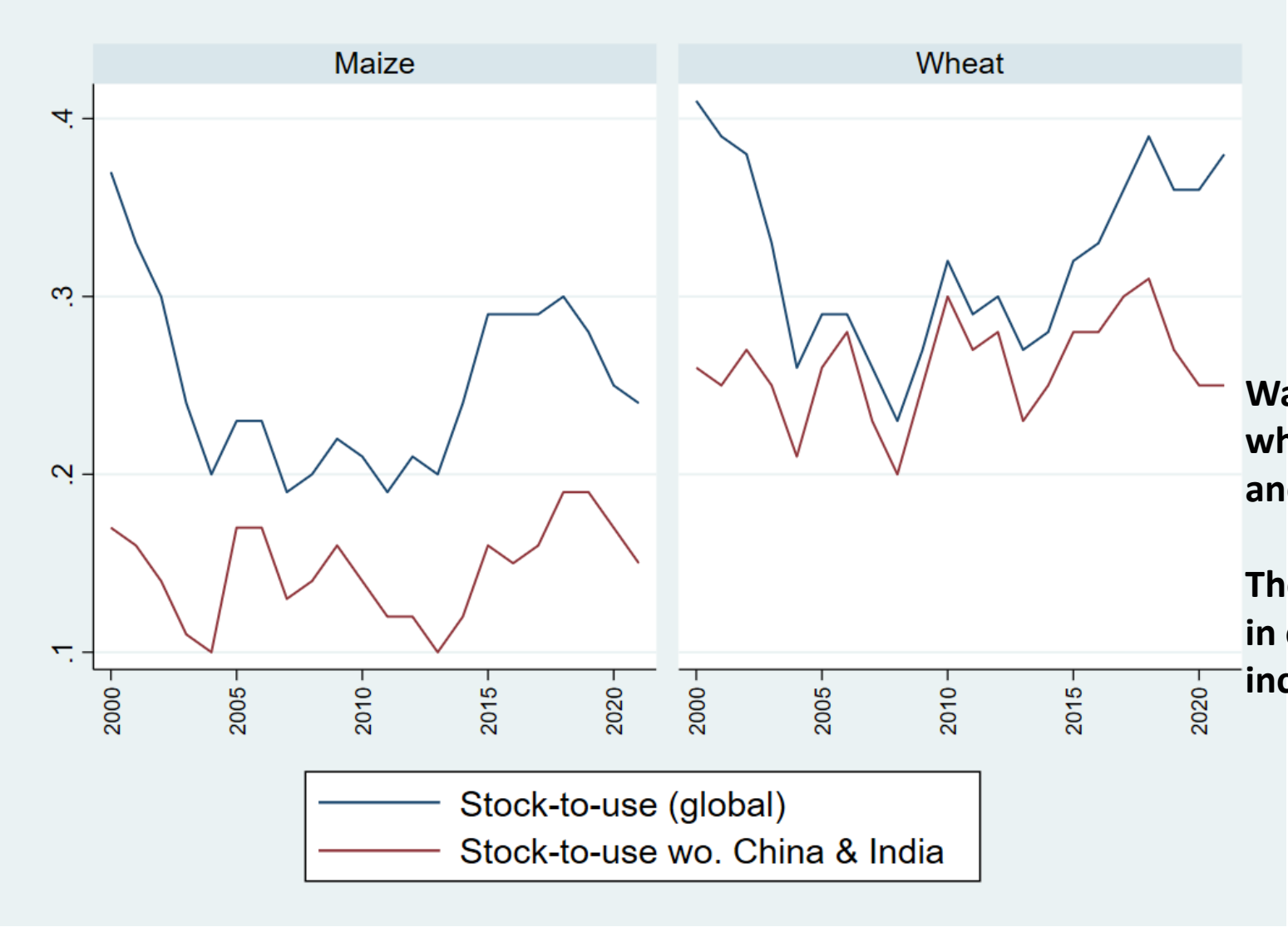


Source: FAO et al. (SOFI 2021).

Global food price inflation is mainly driven by cereal and vegetable oil prices.

Brazil Fertilizer Imports from Russia about 20%

New global dynamics of Cereal Stocks

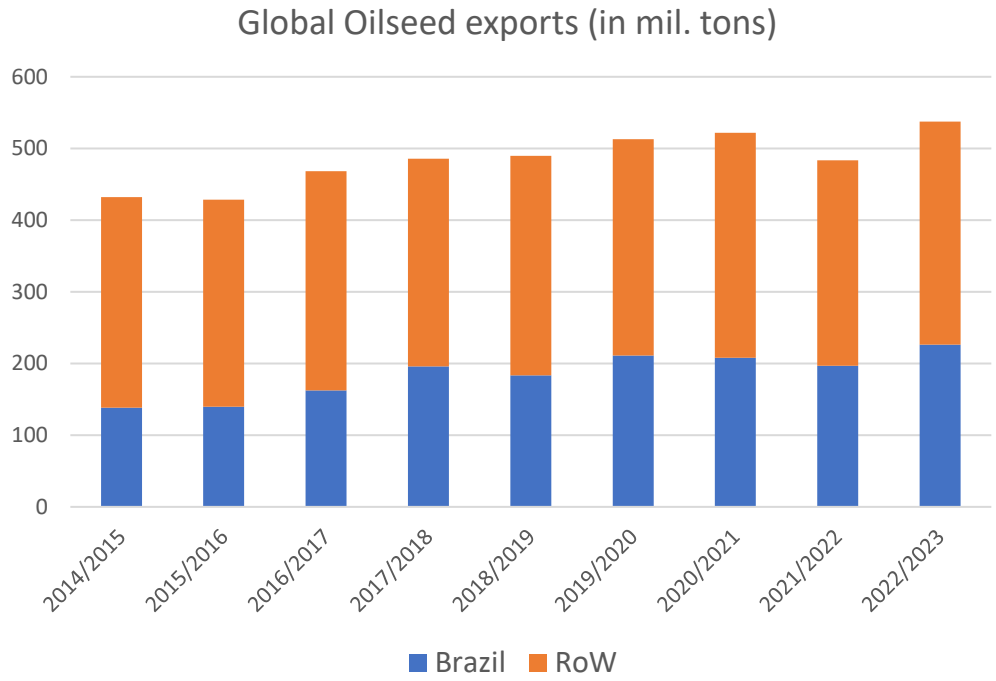


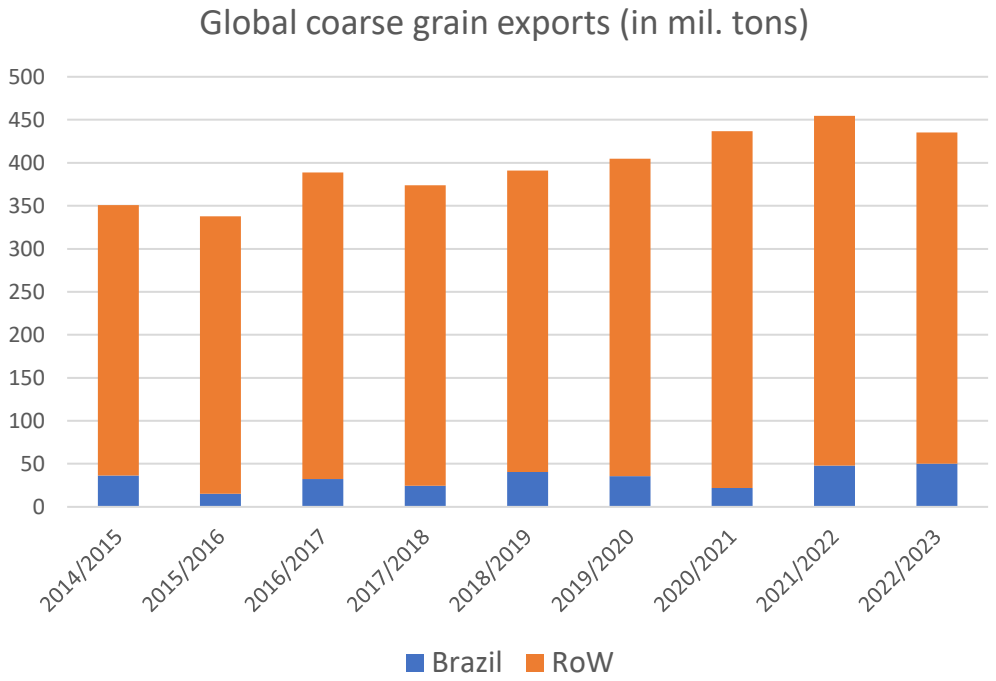
Watch speculative tendencies when stock to use ratios decline and price volatility increases .

The % non-commercial traders in commodity markets increased a lot in 2022

Source: AMIS 2022.

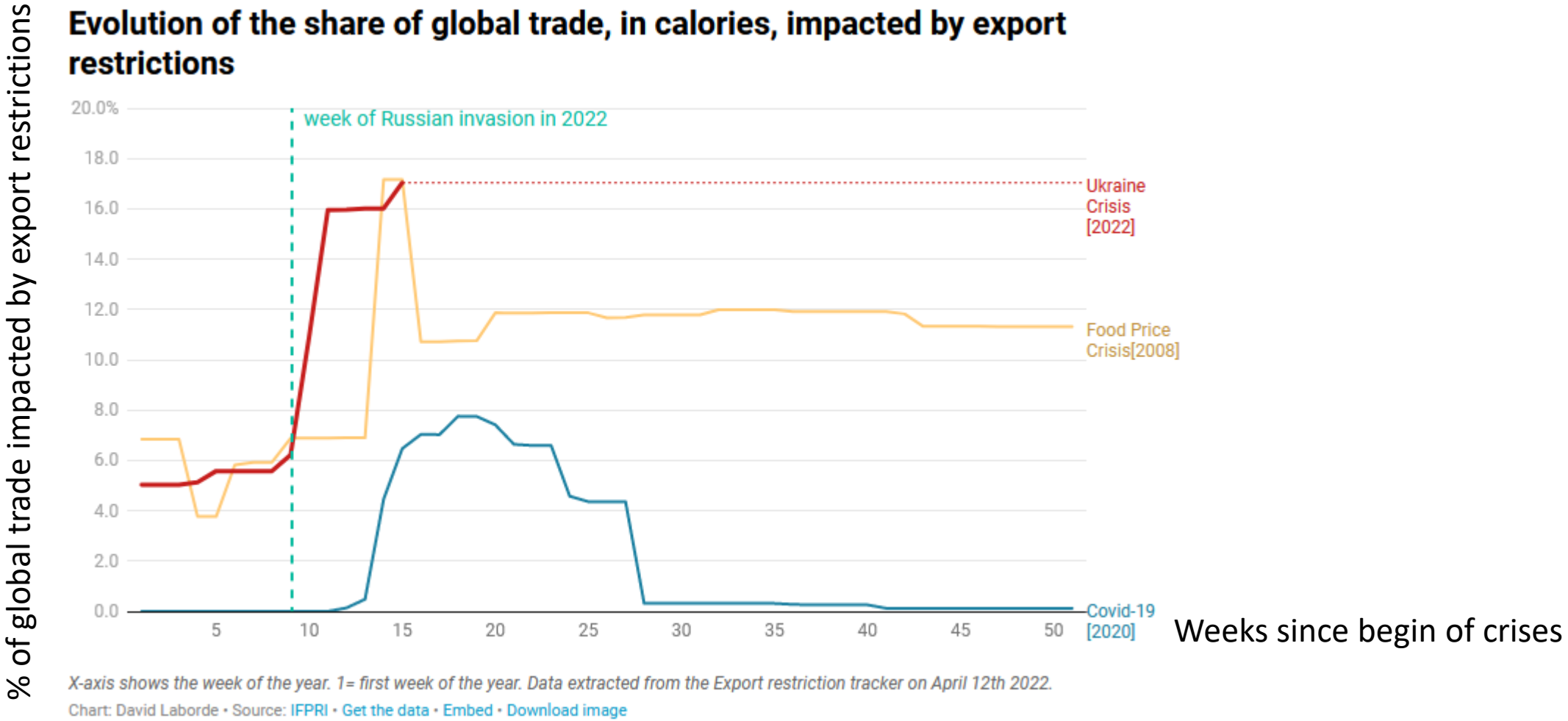
The War affects global food trade – Brazil is gaining importance



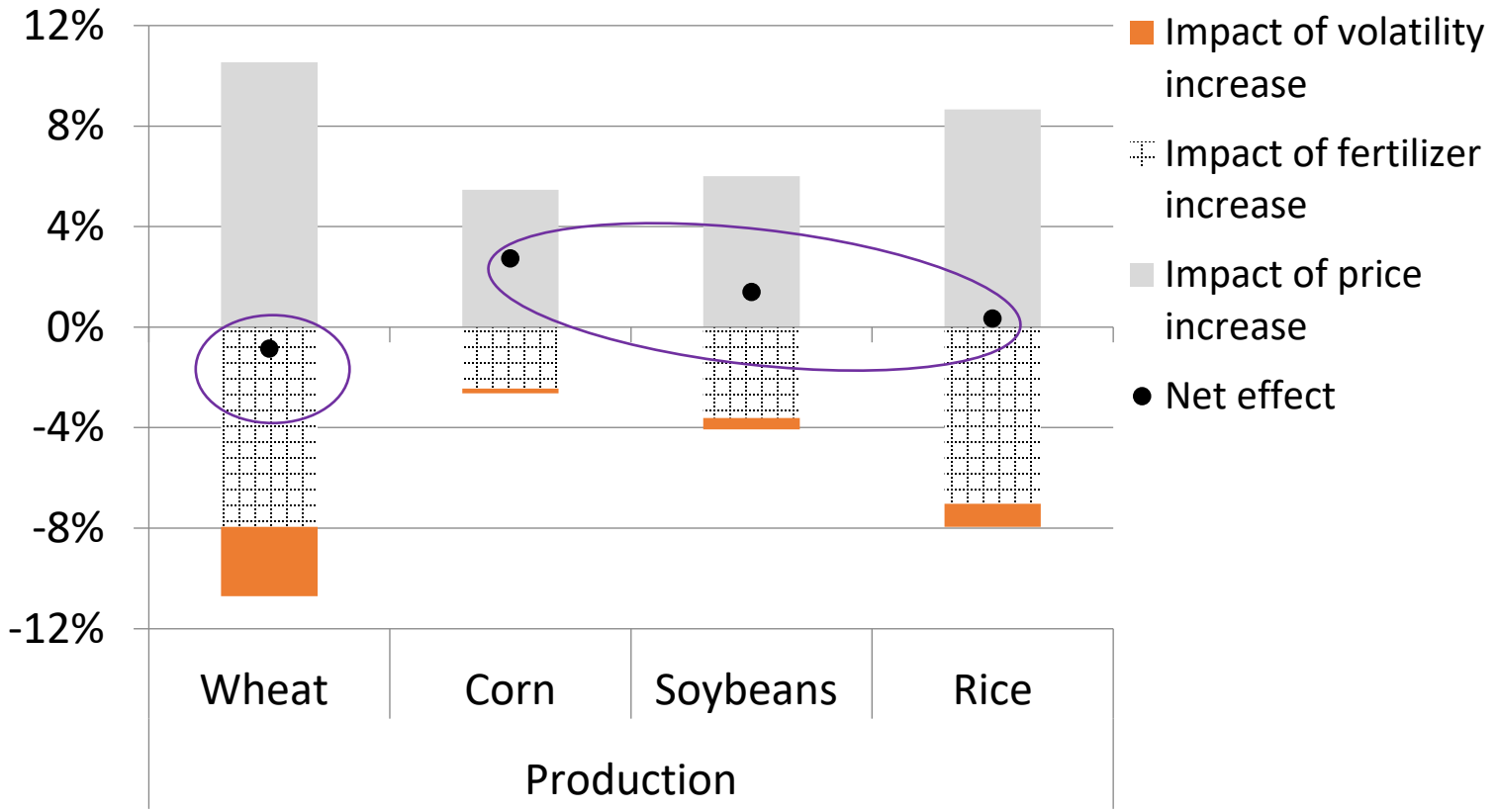


Source: USDA, PSE 2022.

Export Restrictions in Crises: increasing uncertainty



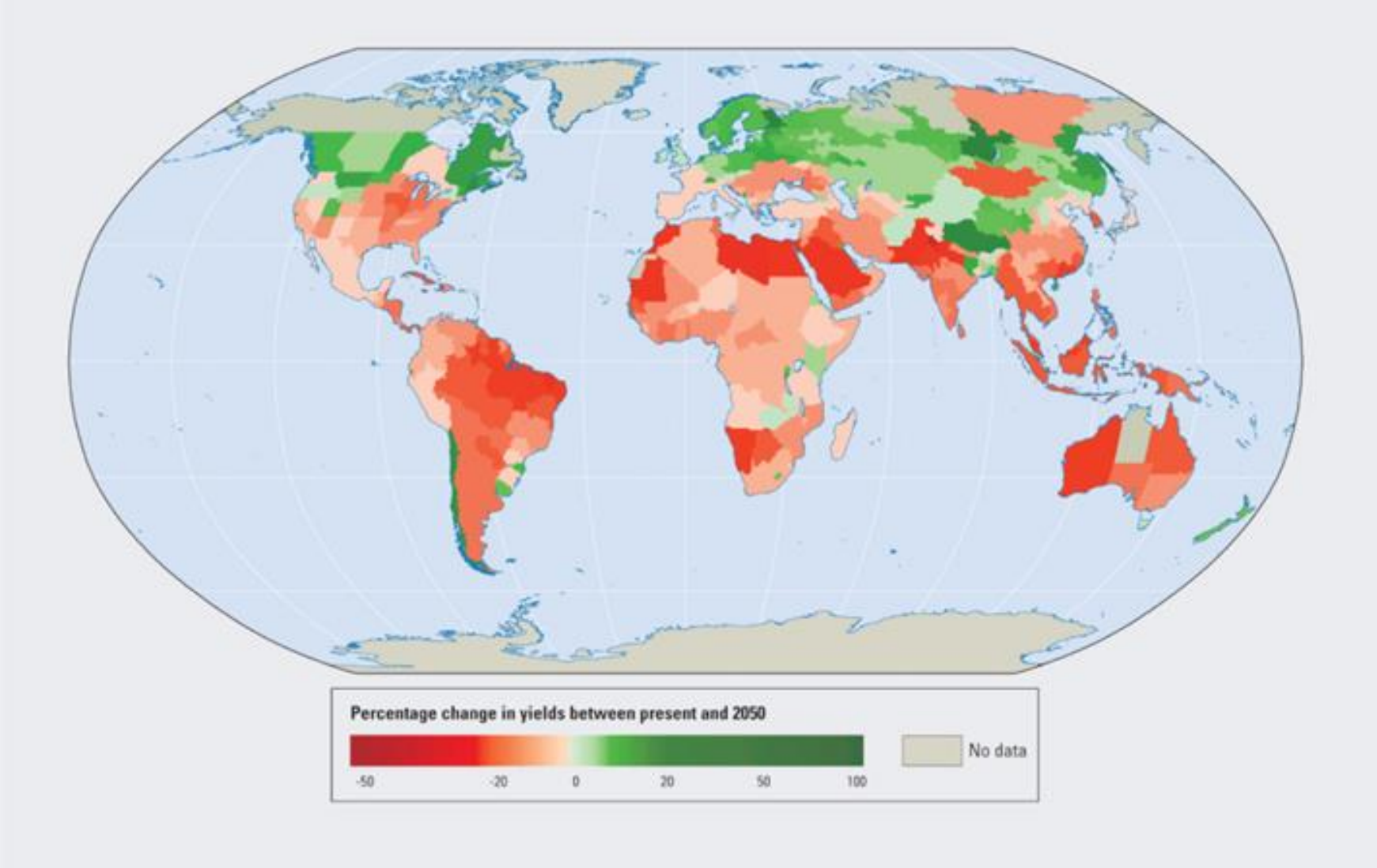
Volatile prices reduce supply response (Net-Impacts in the 2006–2010 Period)



The increase in **price volatility (and fertilizer prices)** during the 2006-2010 period significantly **weakened** the positive supply response towards higher **price levels**

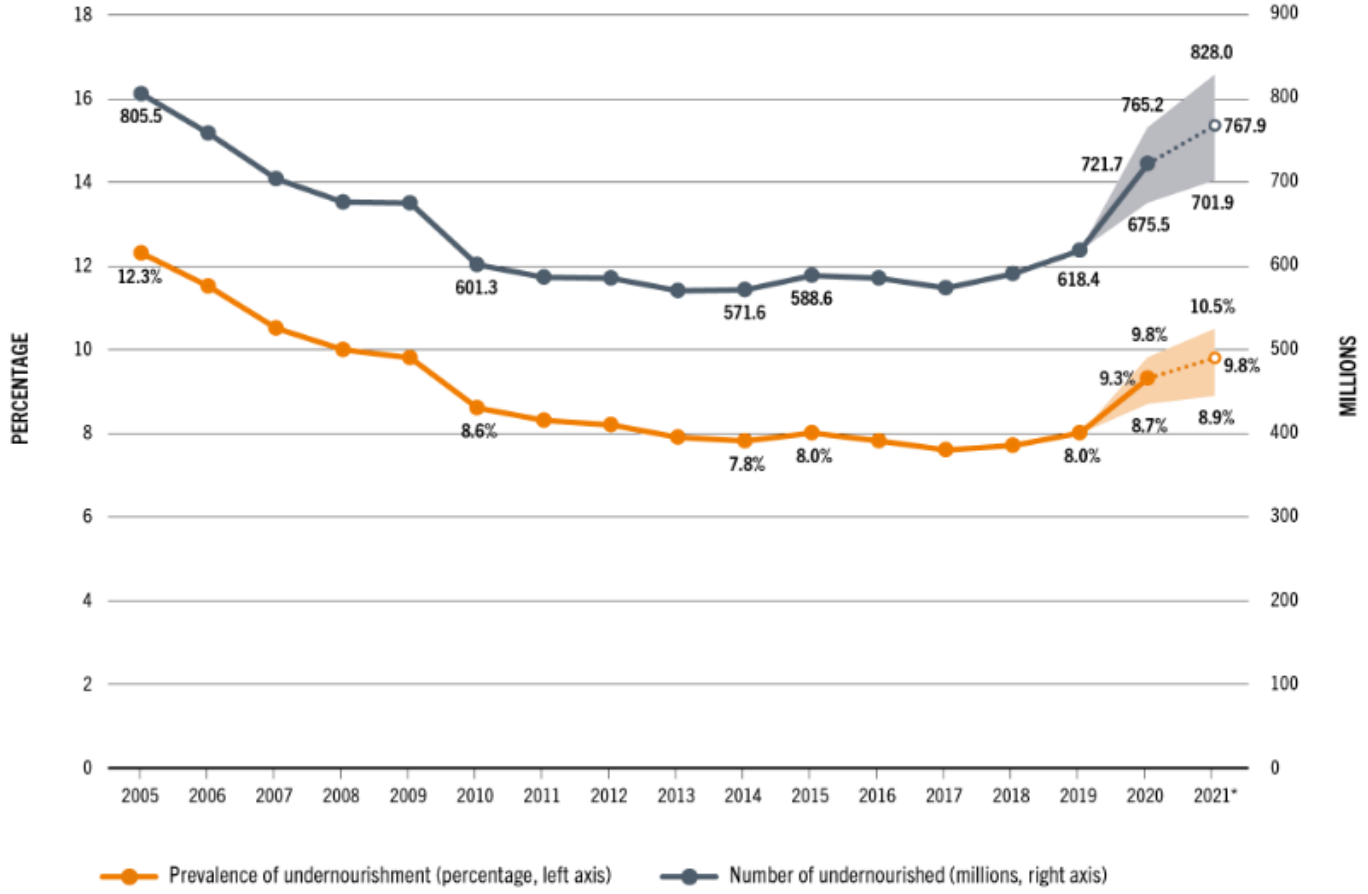
Haile, M., M. Kalkuhl, J. von Braun. 2015. Worldwide Acreage and Yield Response to International Price Change and Volatility: A Dynamic Panel Data Analysis for Wheat, Rice, Corn, and Soybeans. *American Journal of Agricultural Economics*. April, 2015 http://ajae.oxfordjournals.org/content/early/2015/04/15/ajae.aav013.full.pdf

Climate change and crop yields



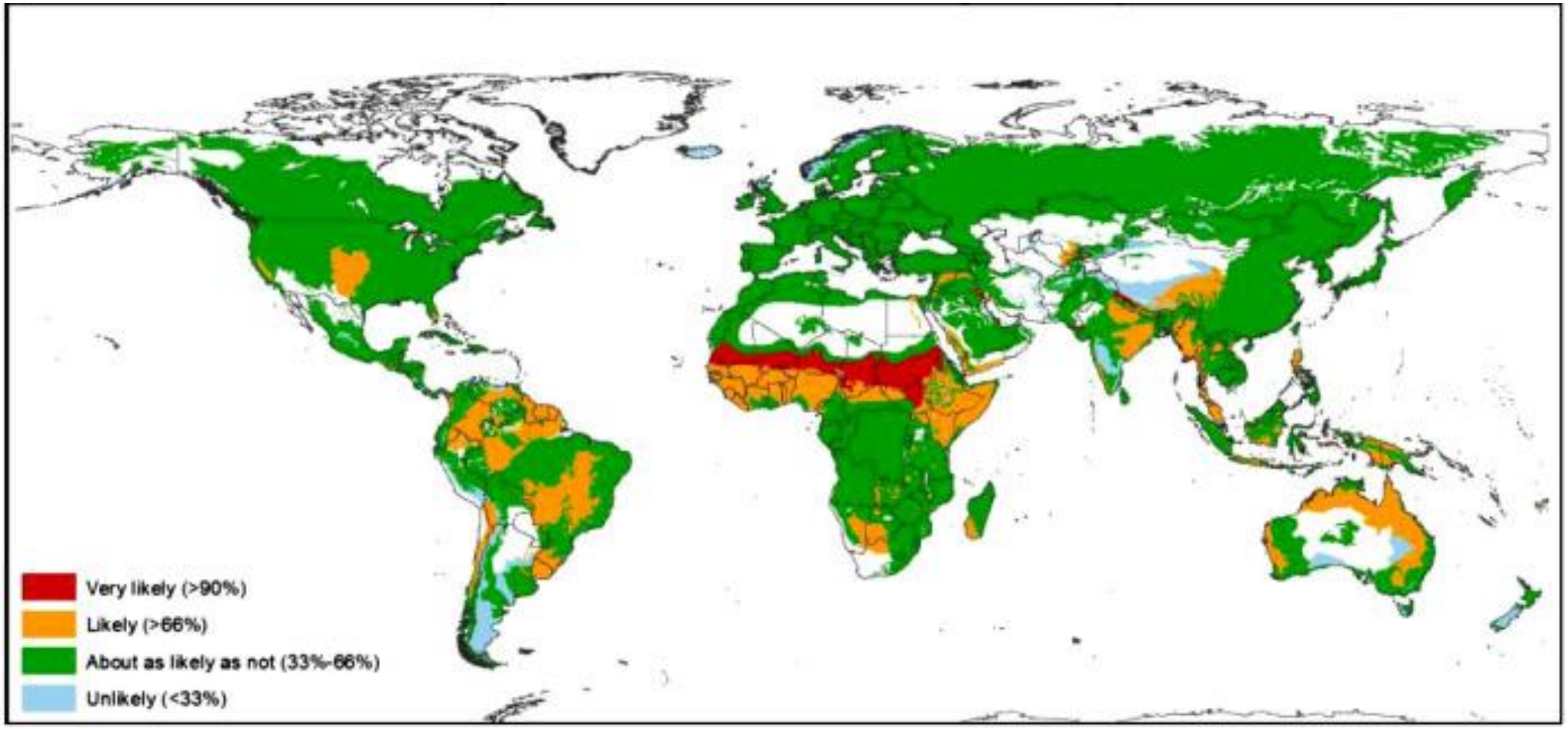
Source: World Bank Publishers, World Bank Development Report 2010, http://wdronline.worldbank.org/

Global hunger in times of Crises



Source: FAO (2022).

Climate change already had negative impact on biodiversity



Between 1981–2010

Source: Segan et al. (2016). *Global Ecology and Conservation; 5:12-21*

Increasing Debts

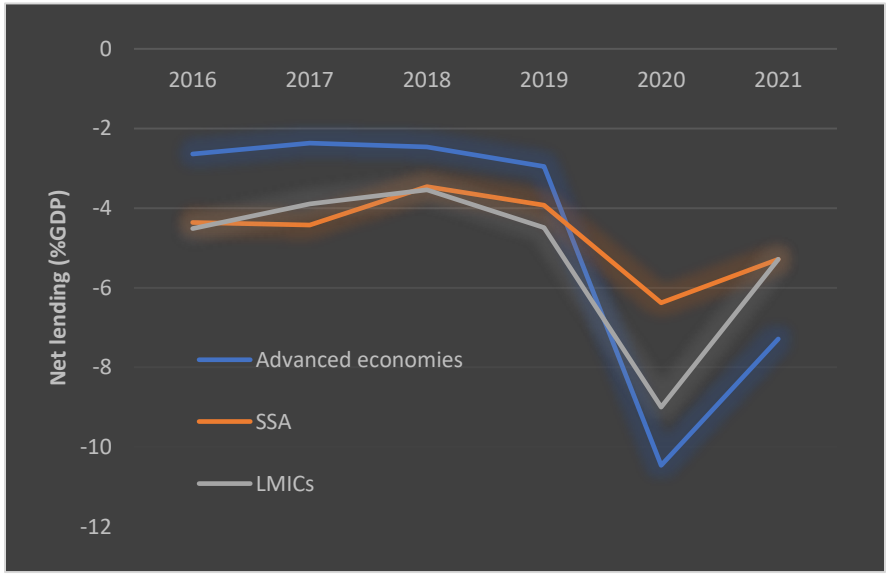
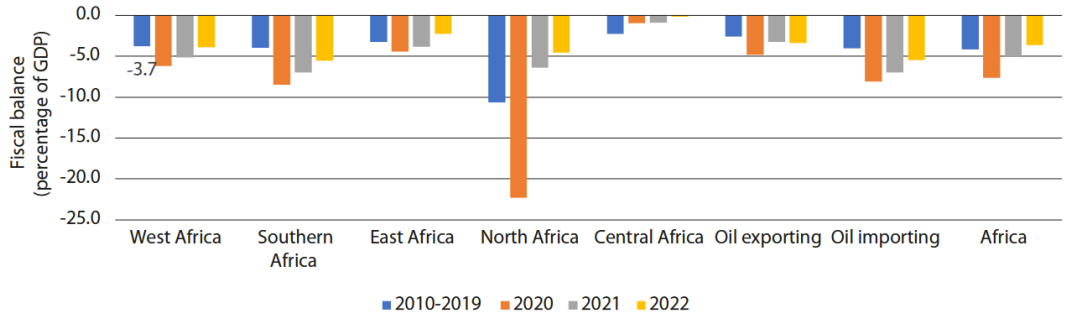


FIGURE 2: Average net lending to GDP ratio before and after the Covid-19 p
Data source: IMF (2022).

- From May 2020 to December 2021, the *Debt Service Suspension Initiative* suspended $12.9 billion in debt-service payments for 48 countries.
- **External debt stocks of developing countries grew by 8 per cent to US$11.1 trillion in 2021, with worsening risk profiles**

Figure II: Fiscal balance



Source: IMF (2021).
Note: Data obtained in July 2021.

Crises and Challenges in Global Food Systems

Overview

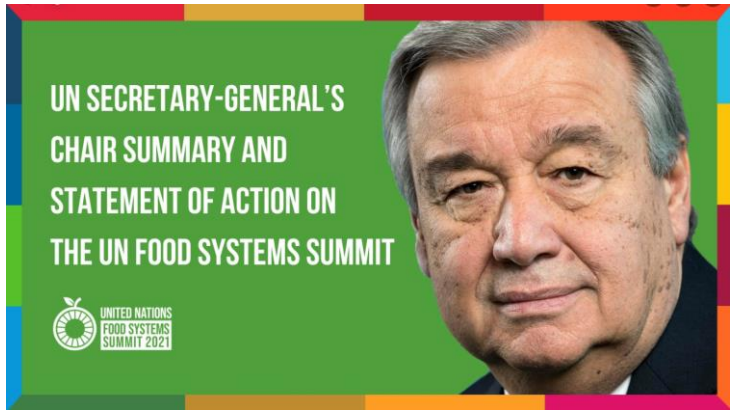
1. Crises causes & consequences

2. **Solutions & way forward**

Food System Transformation to What?

Vision:
the **Food System needed in LAC and globally** is productive, efficient, sustainable, resilient - serving peoples‘ nutrition, inclusion, and protects ecologies – embedded in a circular bioeconomy.

“The Food Systems Summit Made It Clear that Transformative Action in Food Systems is Fundamental to Achieving the SDGs…”



Action must be driven at country-level by governments in their local contexts. **Five action areas** to help inform the transitions needed to realize the vision of the 2030 Agenda:

(1) Nourish All People;

(2) Boost Nature-based Solutions;

(3) Advance Equitable Livelihoods, Decent Work and Empowered Communities;

(4) Build Resilience to Vulnerabilities, Shocks and Stresses; and

(5) Accelerating the Means of Implementation

163 Member State Statements (77 HoSG)

108 National Pathways Submitted

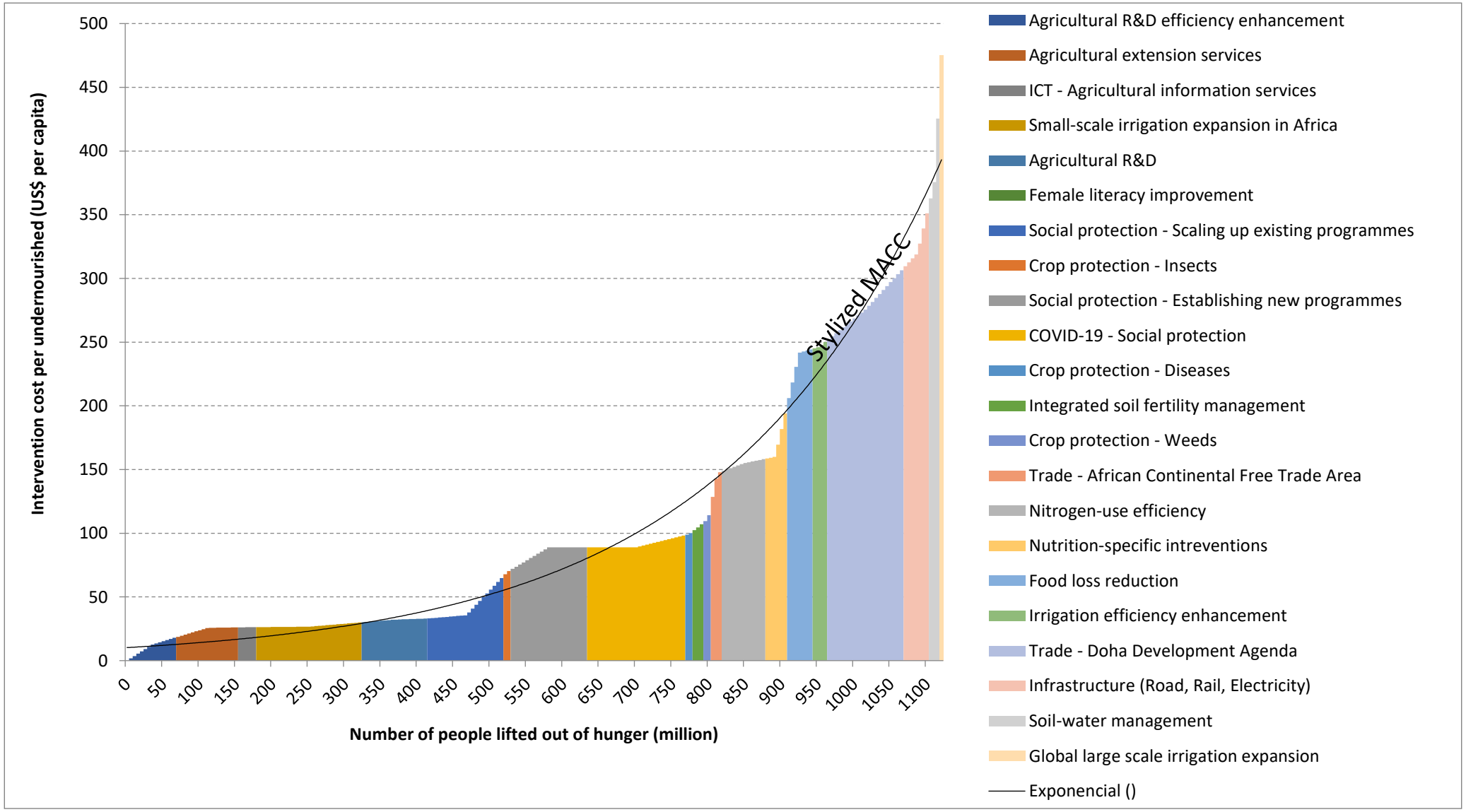
Scientific Group – Science Reader

A Science agenda for resilient food systems

1. A bundle of context specific policy and institutional **innovations to end hunger and increase availability and affordability of healthy diets** and nutritious foods
2. D**e-risk food systems** and strengthen resilience, in particular for climate-neutral, climate-positive, and climate-resilient food systems
3. Innovations for efficient and fair **land, credit, and labor arrangements**
4. **Bioscience innovations** for peoples' health, systems' productivity, and ecological wellbeing
5. Technology-based and policy innovations for productive **soils, land and water, and to protect the agricultural genetic base and biodiversity**
6. Innovations for sustainable **fisheries, aquaculture**, and protection of coastal areas and oceans
7. **Digital innovations** for efficiency and inclusiveness of food systems and rural communities

J von Braun, K Afsana, L Fresco and M Hassan. 2021. Food systems: seven priorities to end hunger and protect the planet. *Nature* **597**, 28-30 (2021) *https://doi.org/10.1038/d41586-021-02331-x*

Estimation of the Incremental Costs of Hunger Reduction



Source: B. Chichaibelu, M. Bekchanov, J. von Braun, M. Torero. In Food Policy (Oct, 2021).
https://www.sciencedirect.com/science/article/pii/S0306919221001299?via%3Dihub

Understanding TRUE COSTs OF FOOD

Market prices do not take into account…

- benefits of affordable or healthy food

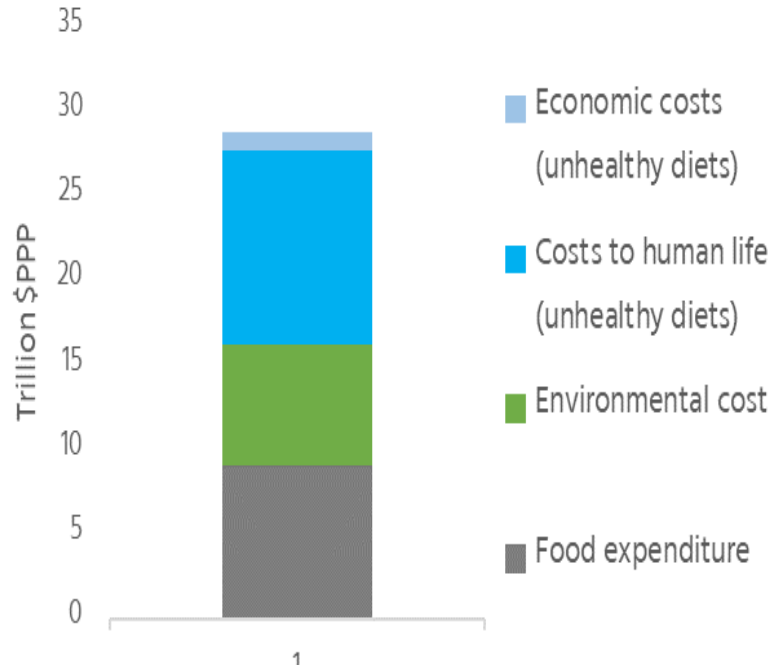
- costs of unhealthy or unsustainable food

Business' profits not reflect value created/reduced for society

GDP of food system does not reflect contribution to welfare

> Sustainable & healthy food is expensive

> Unsustainable& unhealthy food is too cheap



US$ 9 trillion in market

28 trillion True Costs per annum

S. Hendriks et.al. 2021. The True Cost and True Price of Food. A Brief for the Scientific Group UN FSS

Social safety nets and financing

- During the pandemic, 209 countries adopted 1600 social safety measures (ILO)
- Domestic resource mobilization will not be enough. International support needed, incl. debt relief for LIC
- Needed improved quality of safety nets with nutrition, health, school feeding components

Structural economic policy issues higher on agenda

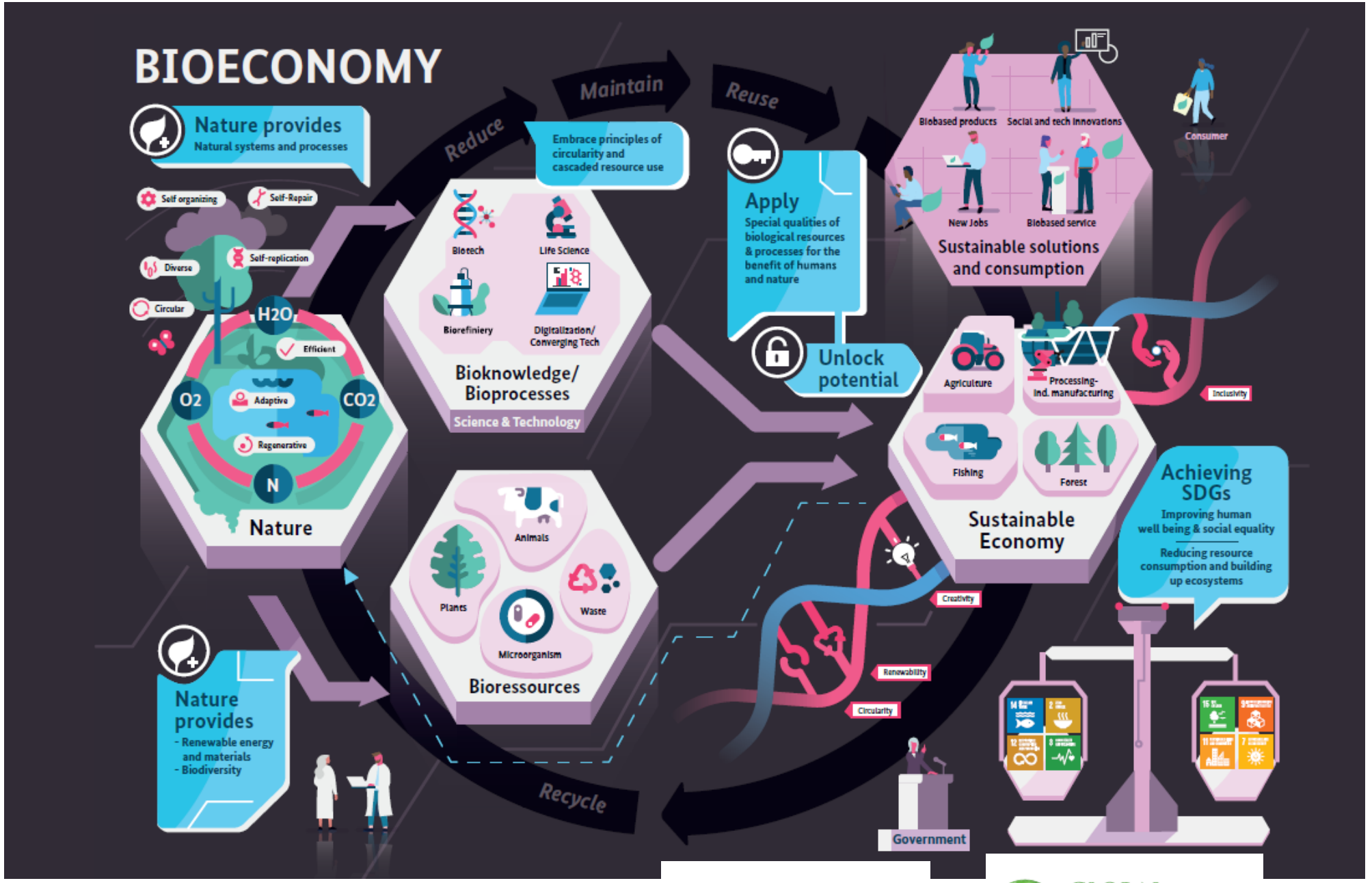
1. Strengthen policy implementation capacities for policies related to

- innovation,
- environment,
- social,
- land use & rights

2. Facilitate global and local involvement in food systems policies by

- smallholders and
- traditional population groups

Making Bioeconomy Reality to Overcome Crises



International Advisory Council on Global Bioeconomy

GLOBAL BIOECONOMY SUMMIT 2020

What: Policy actions to address the global food crisis

Short term:

1. Keep food and fertilizer markets open, avoid restrictive trade policies
2. Grain stock management by EU, USA, India, China, LAC…
3. Short-term changes in food production – reduce grain-based bioenergy and feed
4. Social protection and nutrition actions and support for affordable input prices

Long-term:

1. Further investment in food systems infrastructures to increase resilience
2. Massive increase in R&D for agricultural productivity

Kornher and von Braun. HIGHER AND MORE VOLATILE FOOD PRICES – COMPLEX IMPLICATIONS OF THE UKRAINE WAR AND THE COVID-19-PANDEMIC. ZEF POLICY BRIEF NO 38 March 2022. https://www.zef.de/fileadmin/webfiles/downloads/zef_policybrief/ZEF_Policy_Brief_38_eng.pdf

How: Address governance challenges to prepare for complex global food crises

- UN: follow up to Food Systems Summit
- G7: Alliance for Food Security (with UN & G20)
- Regional and national food systems actions

- Private sector: address investment risks
- Science: build science – policy interface

Kornher, Baumüller, von Braun. G7 Development Assistance for Food Systems to Lift 500 Million People out of Hunger by 2030 Policy Brief, March 2022.
https://www.zef.de/fileadmin/user_upload/ZEF_Policy_Brief_39.pdf