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Disclaimer: personal
analysis amplifying some
of the report's messages

The challenges for food: international implications

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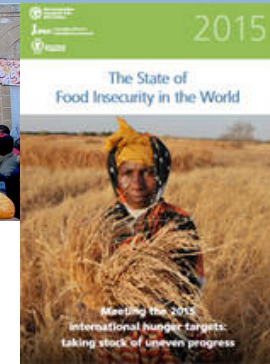
Session P_680 Friday 13th, 08:45 Salles Guillaumet 2

Food security occurs when all people at all times have access to sufficient, safe and nutritious food that meets their dietary needs and preferences for an active and healthy life

What is “food security”?

... the only barrier between us and anarchy is the last nine meals we've had. It may be taken as axiomatic that a starving man is never a good citizen.

AH Lewis, 17 October 1896, Denver Post, “Further Facts in the Case of Mark Hanna,” pg. 6, cols. 6-7



“9 meals from anarchy” & “hunger challenge” food security: is the short term supply of food assured to allow people to eat when they are hungry?

“market-led” food security: can the market supply the sorts of food people like to eat, cheaply? The cheap-food focus ignores the costs externalised to the environment and health systems.

“Sustainable” food security: can the market supply food that people like and want, and that underpins a healthy diet, and is supplied sustainably (i.e. costs are not levied on health and environment)?





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Global analysis

***“GLOBAL FOOD SYSTEMS TODAY ARE UNSUSTAINABLE
FOR BOTH PEOPLE AND THE PLANET.”***



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IMPROVING THE STATE
OF THE WORLD



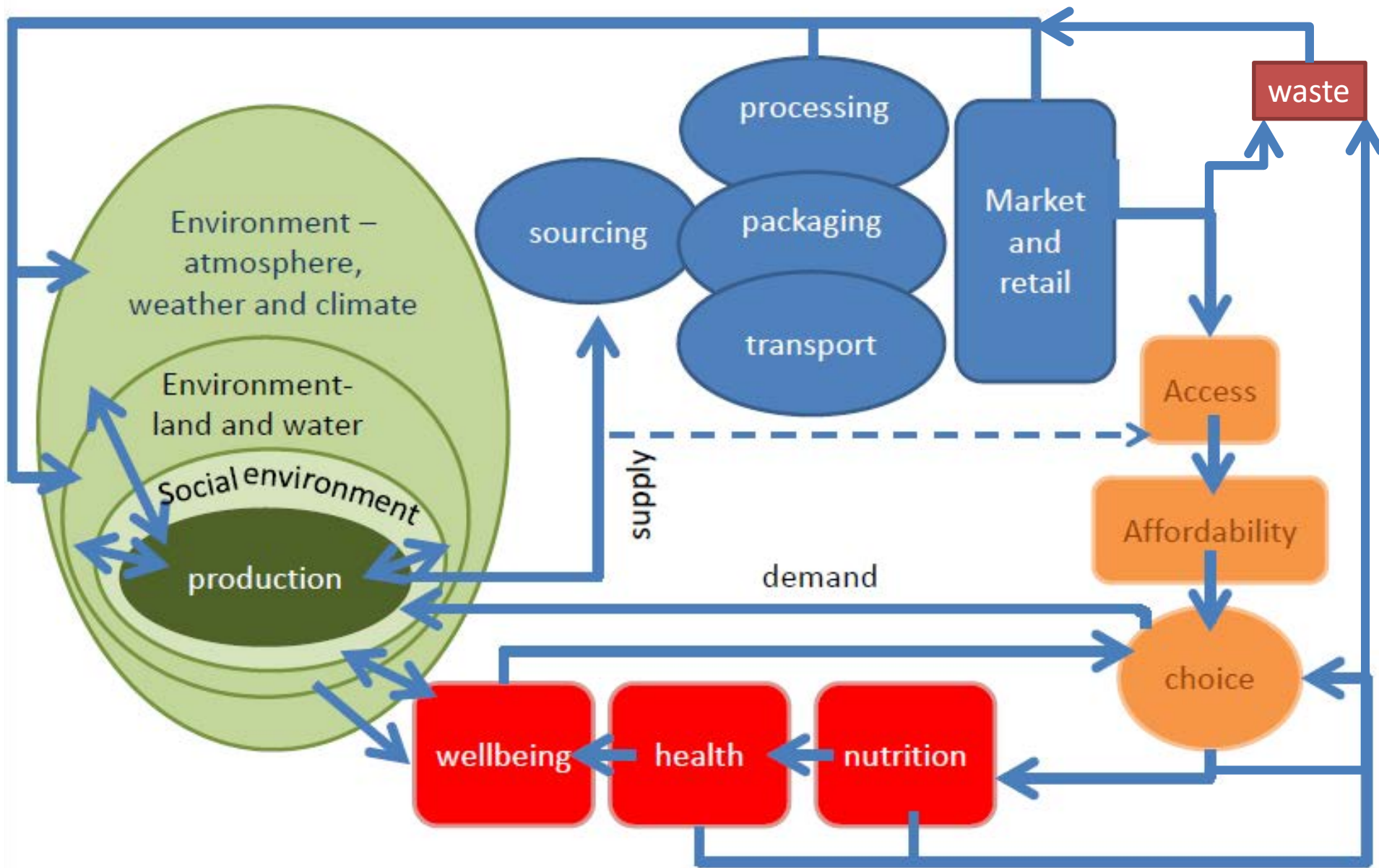
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The food system





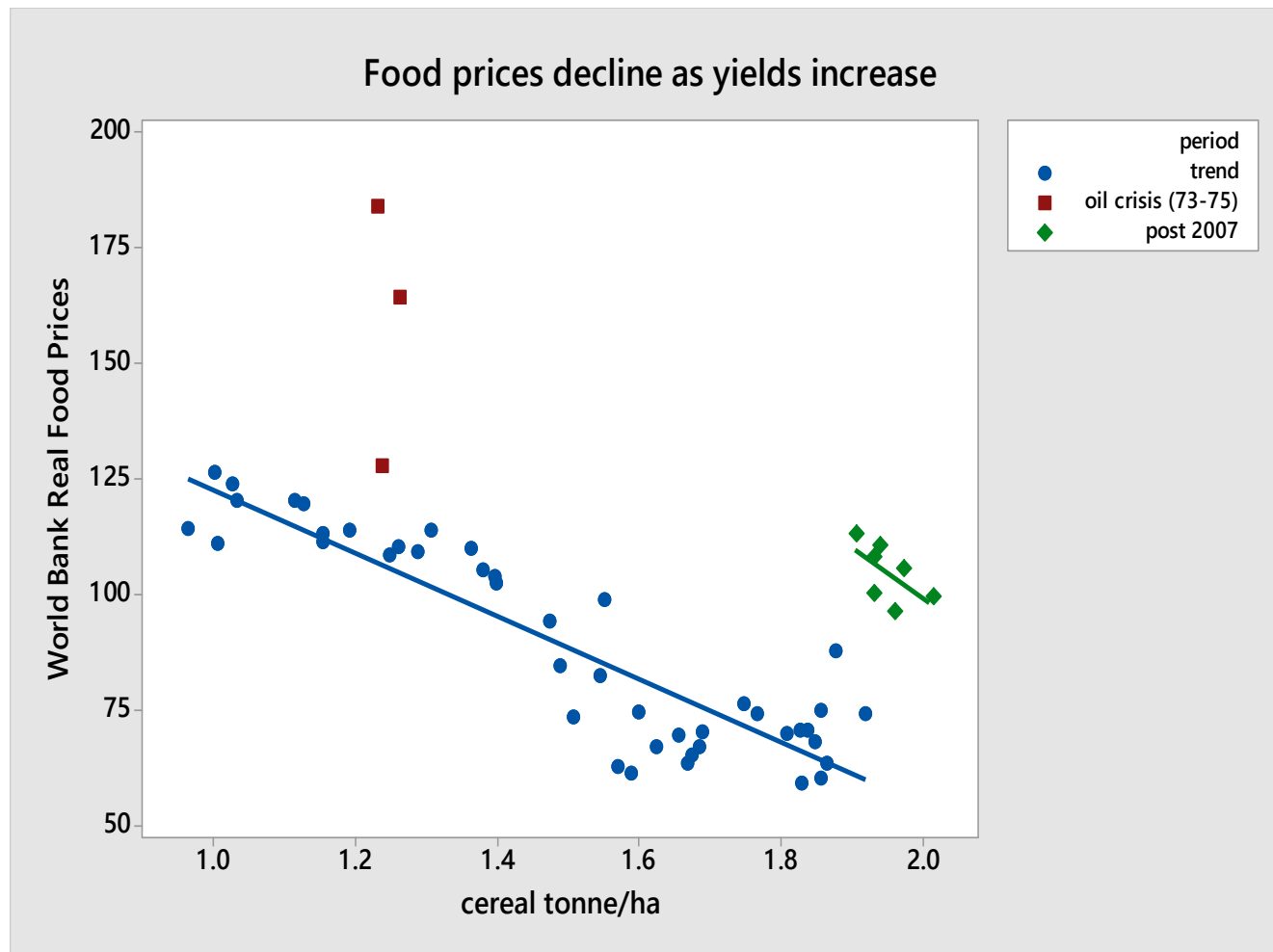
Focus on lowering price has consequences



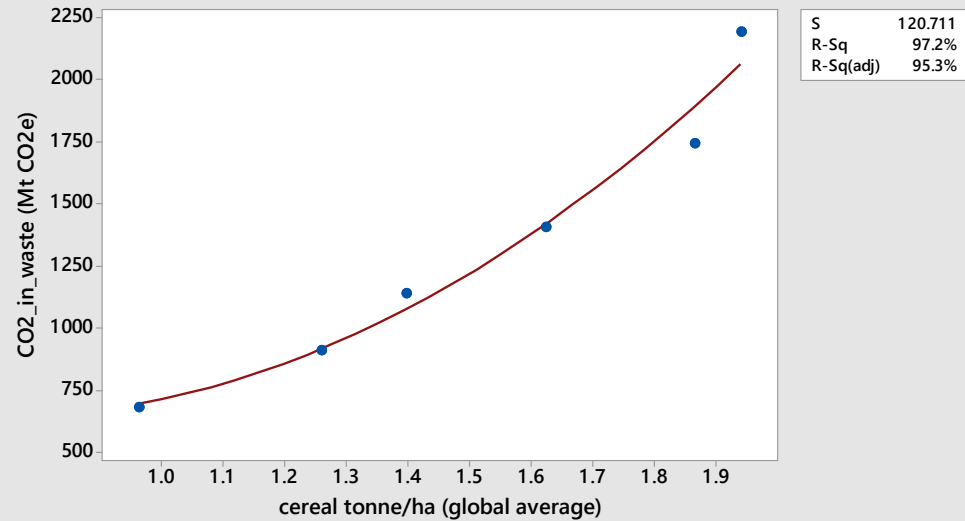
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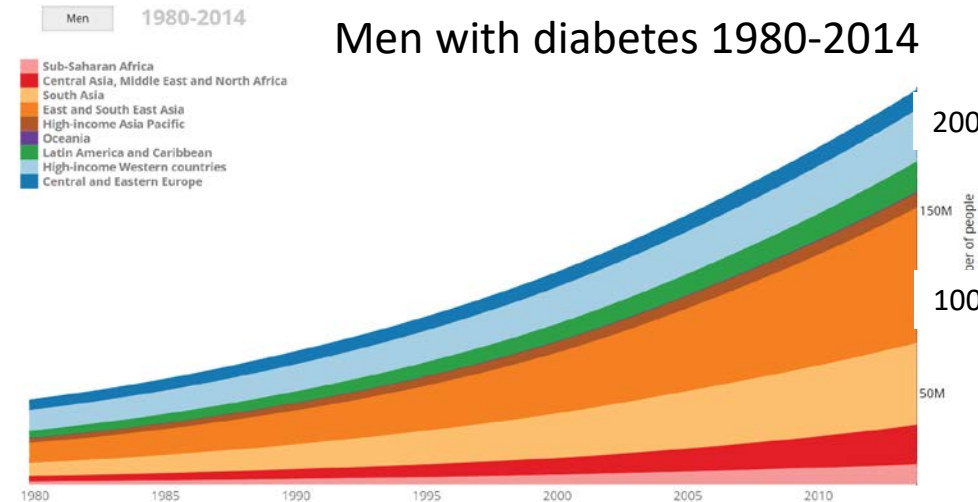
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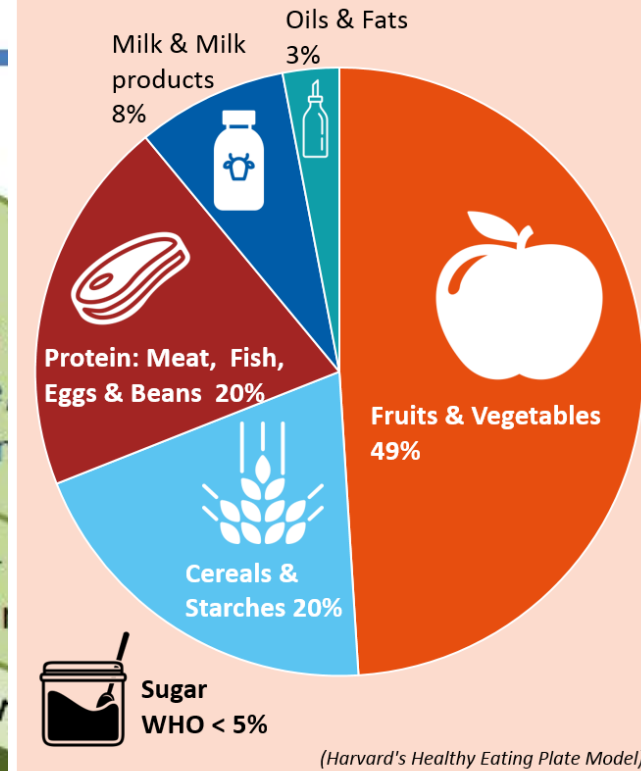
As yields increase, waste increases faster



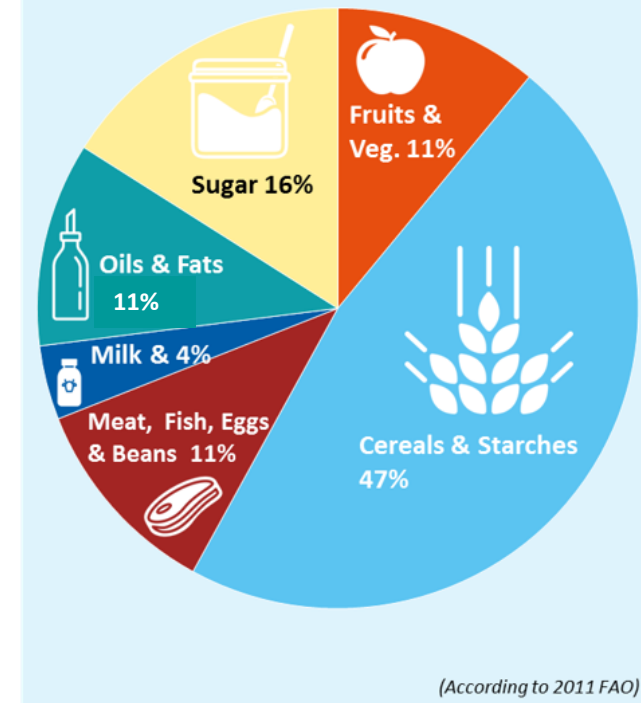
Men with diabetes 1980-2014



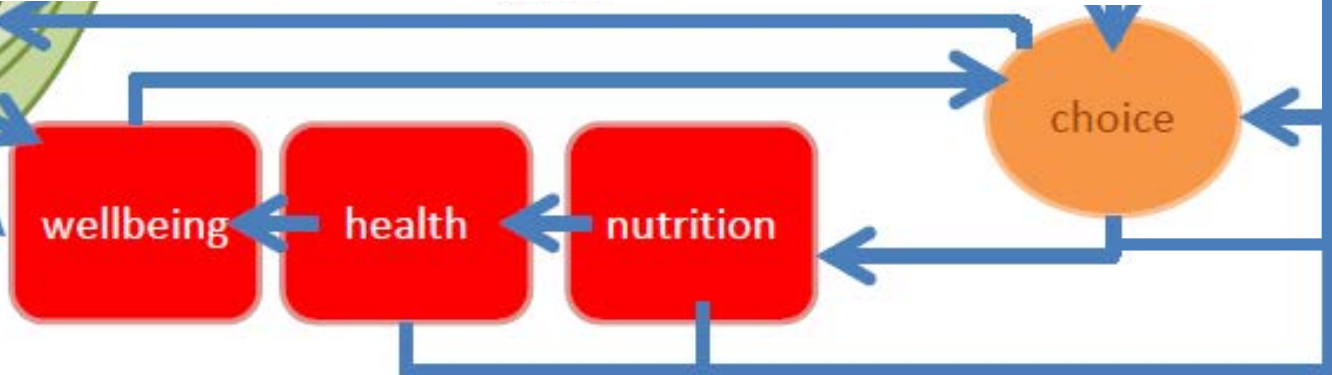
What we should be eating



What we are actually producing

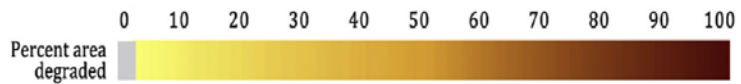
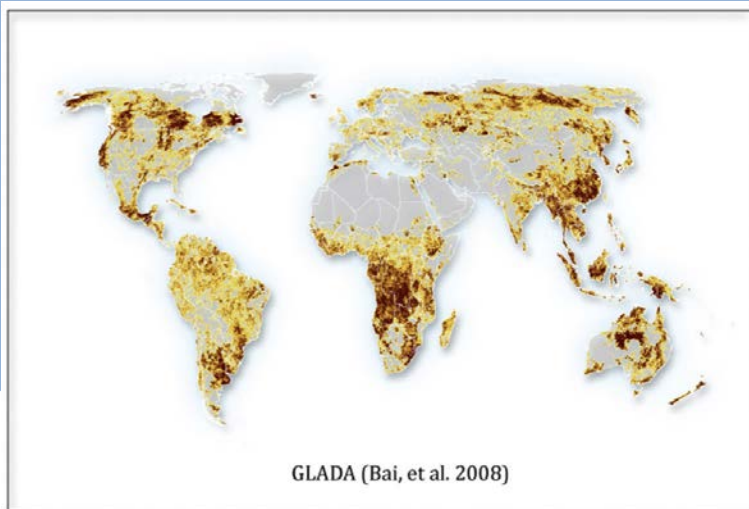


Sources: Evan Fraser, Guelph, FBS analysis, 2015





Per capita footprint of intensification



<http://dx.doi.org/10.1016/j.apgeog.2014.11.024>

- 0.7-0.85 ha land
- 776 m³ water
- 15.3 kg N
- 299 kg CO₂eq
- **9 g** antimicrobials
- **284 g** of pesticide active ingredient
- 3.33 poultry+0.54 cattle/sheep



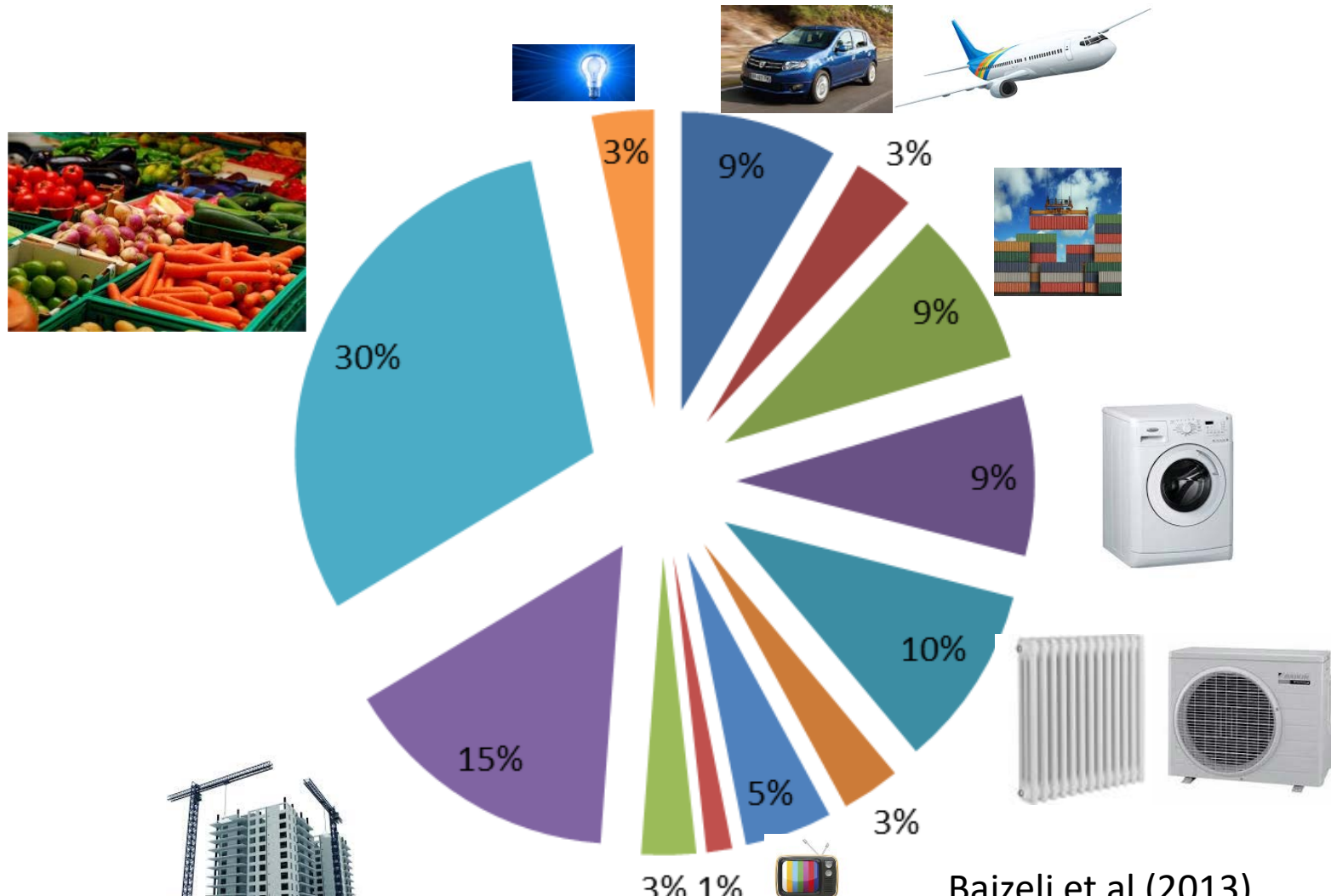
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GHG emissions by service (50.6 Gt CO₂e total)

- personal travel
- commuting
- freight
- washing
- thermal comfort
- lighting
- communications
- textiles
- industrial equip.
- construction
- agri-food
- waste



Baizeli et al (2013)



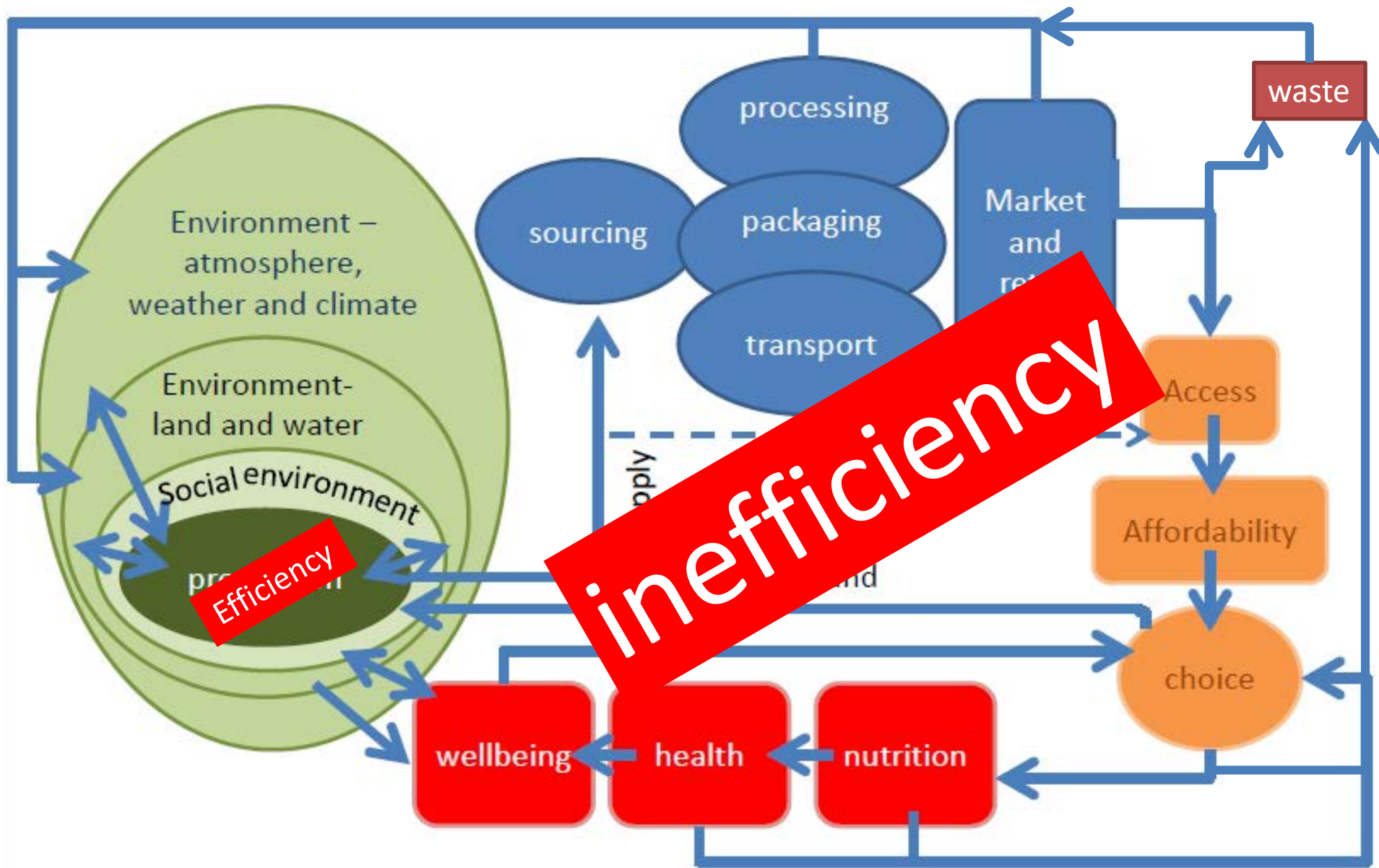
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By concentrating only on agricultural outputs and their efficiency we have created a food system that is highly inefficient

The food system

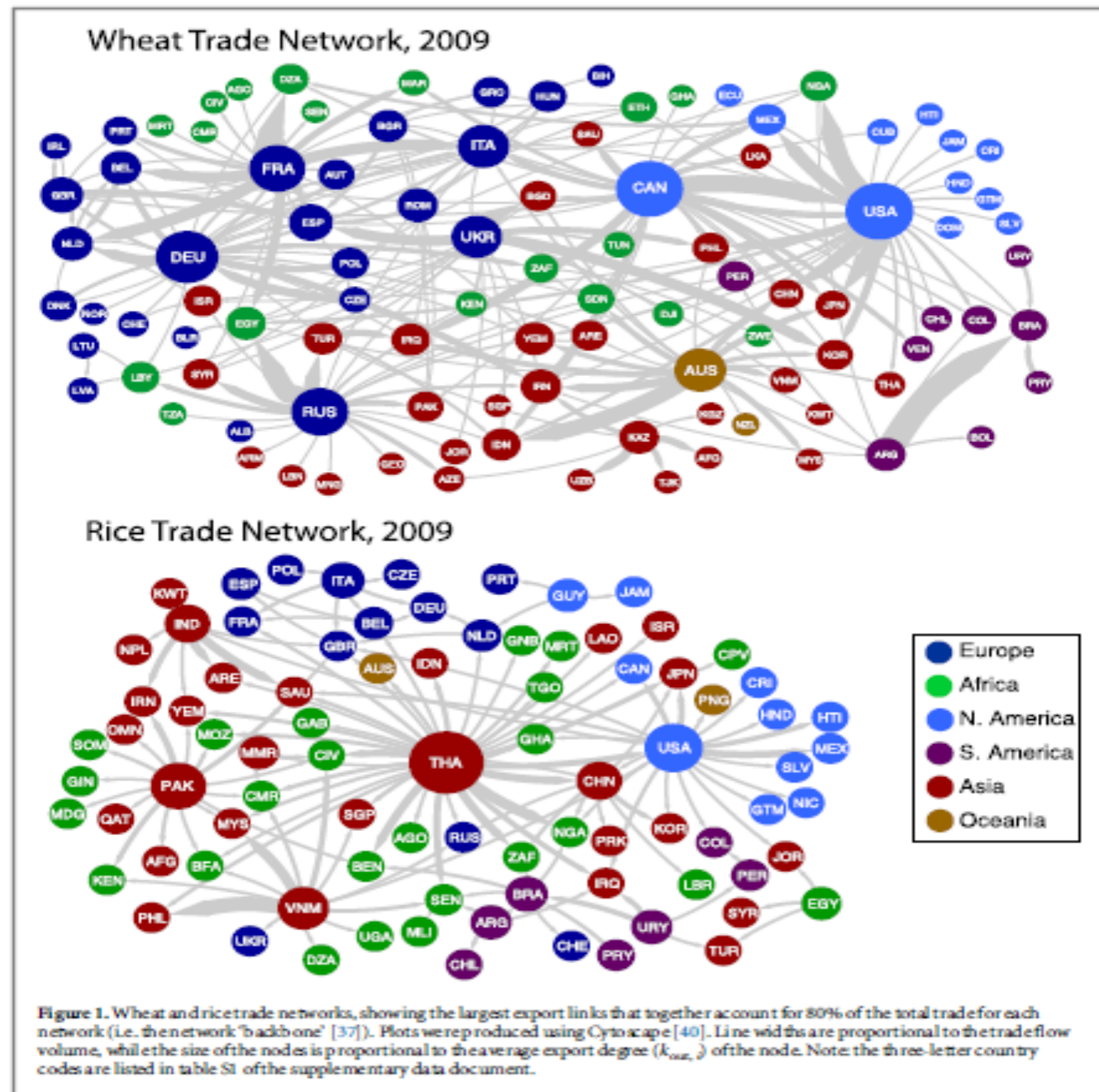




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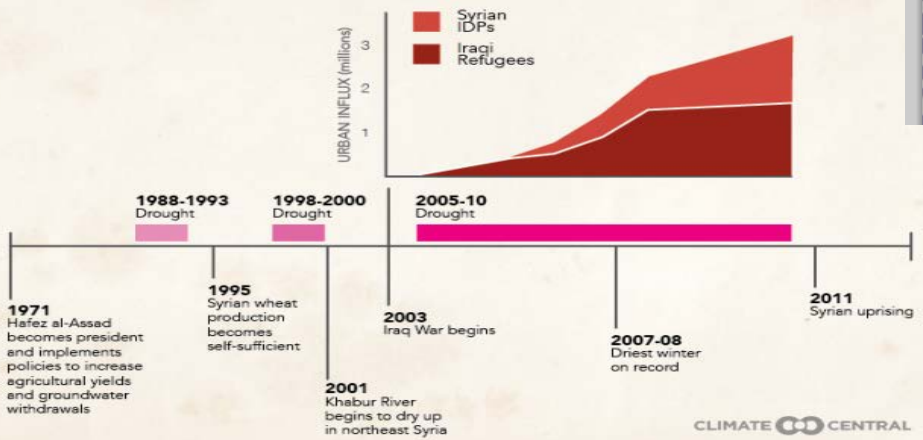
Global connectivity through trade: there are risks in both movements of goods and price connectivity





A Syria Timeline: Policy, Drought and Conflict:

A series of social and climate factors became confounding elements that contributed to the uprising in Syria.



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Climate change in the Fertile Crescent and implications of the recent Syrian drought

Colin P. Kelley^{a,1}, Shahrzad Mohtadi^b, Mark A. Cane^c, Richard Seager^c, and Yochanan Kushnir^c

^aUniversity of California, Santa Barbara, CA 93106; ^bSchool of International and Public Affairs, Columbia University, New York, NY 10027; and ^cLamont-Doherty Earth Observatory, Columbia University, Palisades, NY 10964

Edited by Brian John Hoskins, Imperial College London, London, United Kingdom, and approved January 30, 2015 (received for review November 16, 2014)

Before the Syrian uprising that began in 2011, the greater Fertile Crescent experienced the most severe drought in the instrumental period. Syria's water security by exploiting limited land and water resources without regard for sustainability (10).

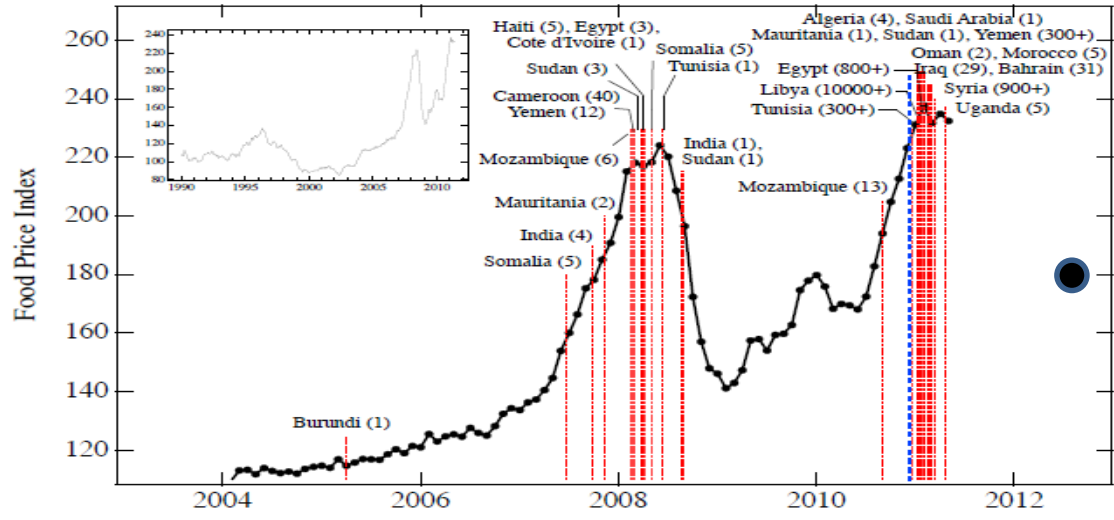
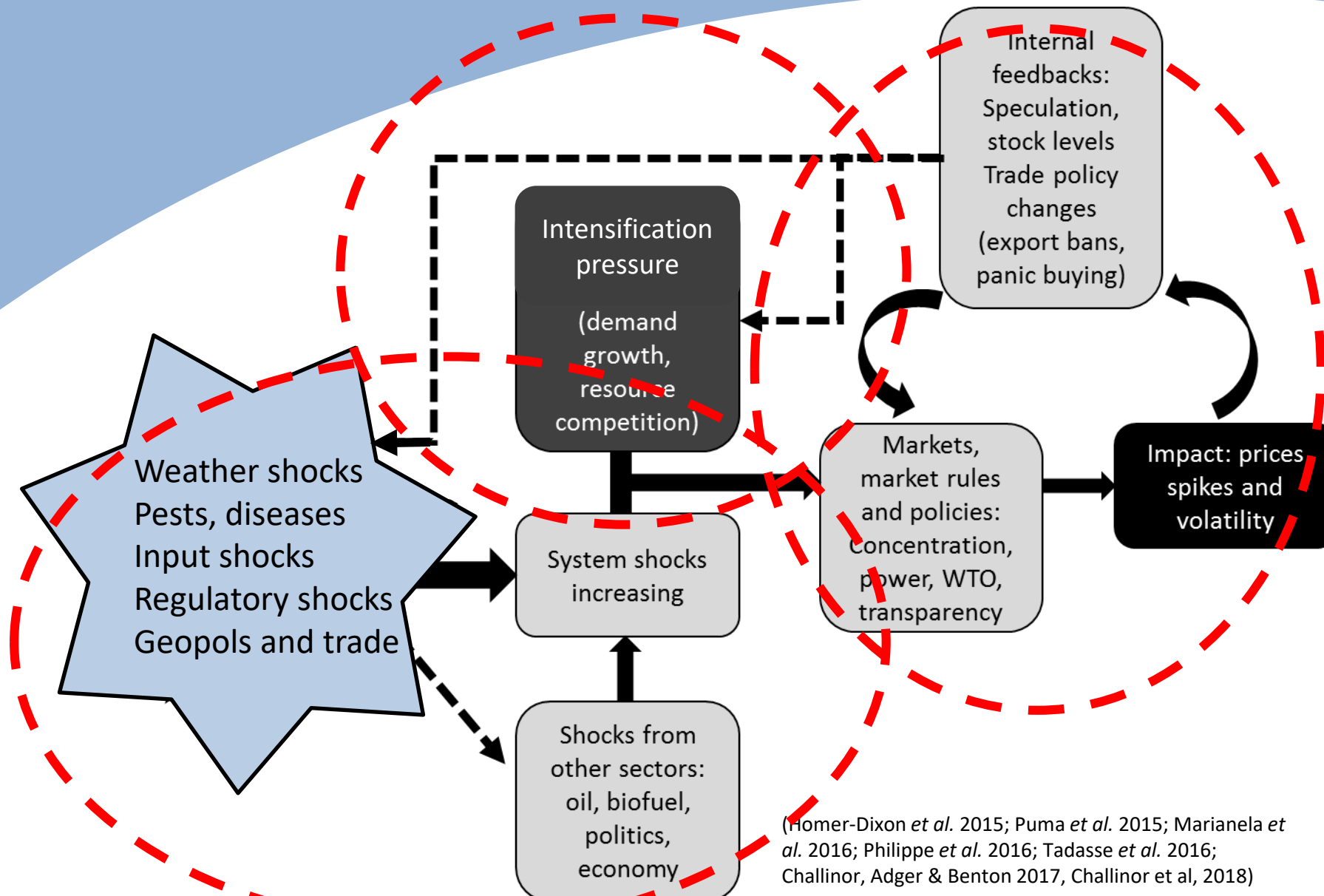


FIG. 1: Time dependence of FAO Food Price Index from January 2004 to May 2011. Red dashed vertical lines correspond to beginning dates of “food riots” and protests associated with the major recent unrest in North Africa and the Middle East. The overall death toll is reported in parentheses [26–55]. Blue vertical line indicates the date, December 13, 2010, on which we submitted a report to the U.S. government, warning of the link between food prices, social unrest and political instability [56]. Inset shows FAO Food Price Index from 1990 to 2011.



Food system resilience depends on many factors



(Homer-Dixon *et al.* 2015; Puma *et al.* 2015; Marianela *et al.* 2016; Philippe *et al.* 2016; Tadasse *et al.* 2016; Challinor, Adger & Benton 2017, Challinor *et al.*, 2018)



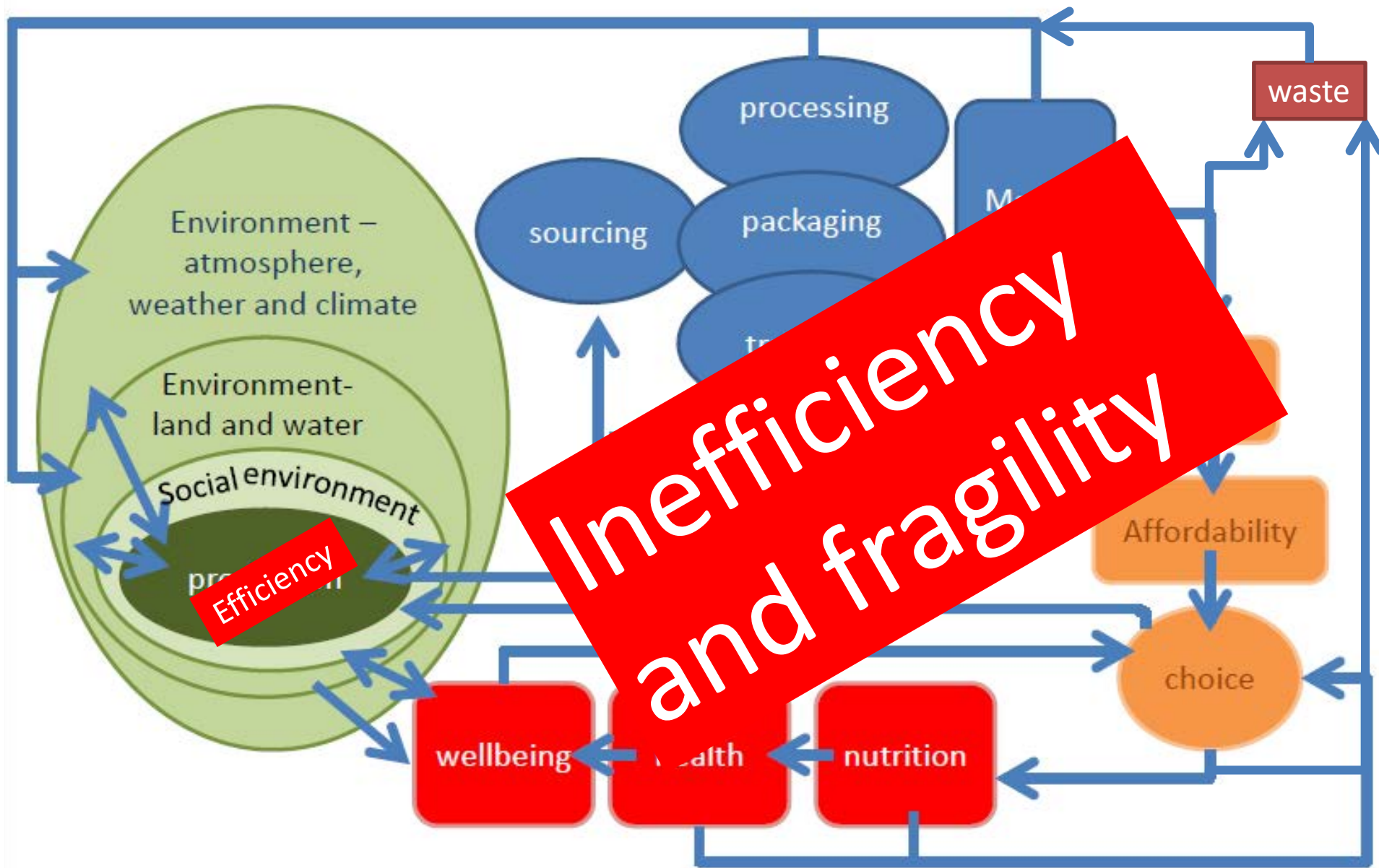
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By concentrating only on agricultural outputs and their efficiency we have created a food system that is highly inefficient

The food system





Virtuous circle

“Business as usual”

- Continued focus on productivity (“sustainable intensification”) as prime driver of agriculture
- More, cheaper, food; more waste and ill health
- Drives more climate change; greater impacts on yields
- Creates greater need for land for climate mitigation
- Intensifies competition for land, water, energy, inputs
- Less biodiversity, more uniformity, erosion of soils and natural capital
- Less resilience to perturbations (locally or through global markets)

“Business unusual”

- Greater focus on addressing the demand side: move towards system efficiency - healthy diets, sustainable (low waste) food systems
- Greater recognition of values associated with food, not just price, higher farm-gate prices; less but better consumption, better health
- Different diets driving more diversified agriculture; allowing more circular ag (e.g. mixed farms)
- More multi-functional landscapes (fewer monocultural landscapes)
- Efficient food system makes space for BECCS
- More rural employment
- More resilient landscapes and food systems



Vicious circle



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EUROPE'S ACTIONS - INTERNATIONAL DIMENSIONS



What can Europe do? Science, analysis & policy leadership



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Eric Holthaus @EricHolthaus · Jul 6

Yesterday was Africa's hottest reliably measured temperature in recorded history: 124.3°F (51.3°C) in Algeria

Africa has 16% of the world's population—and produces just 3.8% of all greenhouse gases.

Climate change is fundamentally a story of injustice.
wunderground.com/cat6/Africas-H...

108 4.0K 6.5K



- Food systems' approaches to systemic transformation (HorizonEurope)
 - How (S&T, social, economic)?
- Addressing the challenges of producing food sustainably to feed everyone healthily
 - Farming systems, crops, amount of livestock etc
- Policy coherence and alignment (Food2030)
 - Trade, Health, CAP and environment policy aligned
- Reducing incentives for consumptive-based lifestyles, valuing "less but better"
- Better trade policy
 - More and more cheaply is not better for society
 - Food system resilience and trade networks
- Aid: science and technology to build climate smartness for the developing world
- Aid: stronger climate leadership



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Thank you!

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Food and nutrition security and agriculture (FNSA)

Opening and introduction to IAP: Volker ter Meulen
Introduction to EASAC FNSA project: Robin Fears
Claudia Canales: Key findings
Aifric O'Sullivan: Food, nutrition and health
Tim Benton: International implications of EASAC's work



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