



How may food systems evolve: looking ahead in an uncertain world

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Research Director | Emerging risks

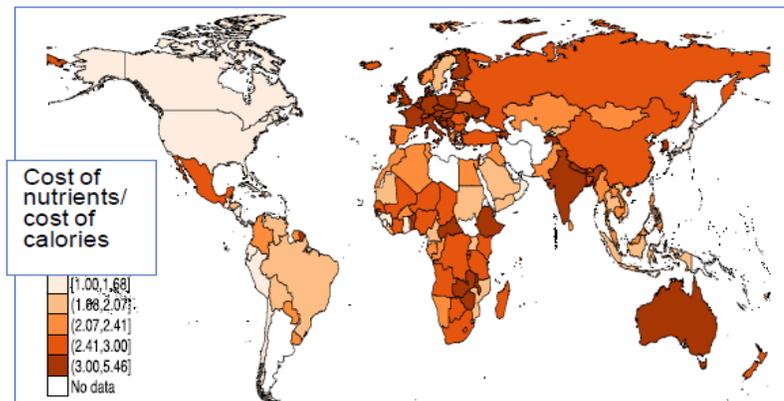
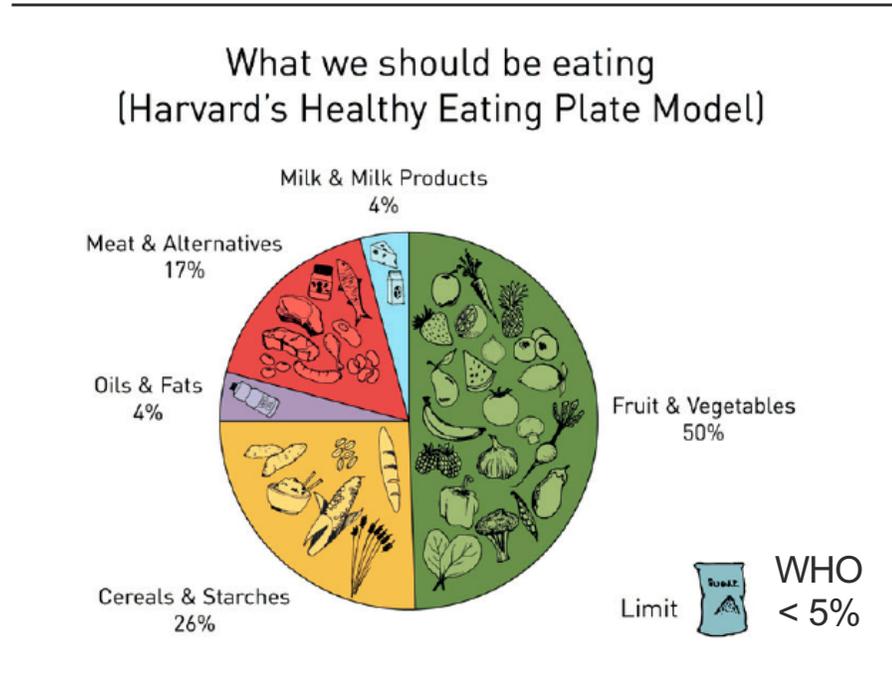
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We can't discuss “plans for the future of genebanks for agriculture” without discussing what will shape the world ahead

1. Food Systems: BAU is not an option

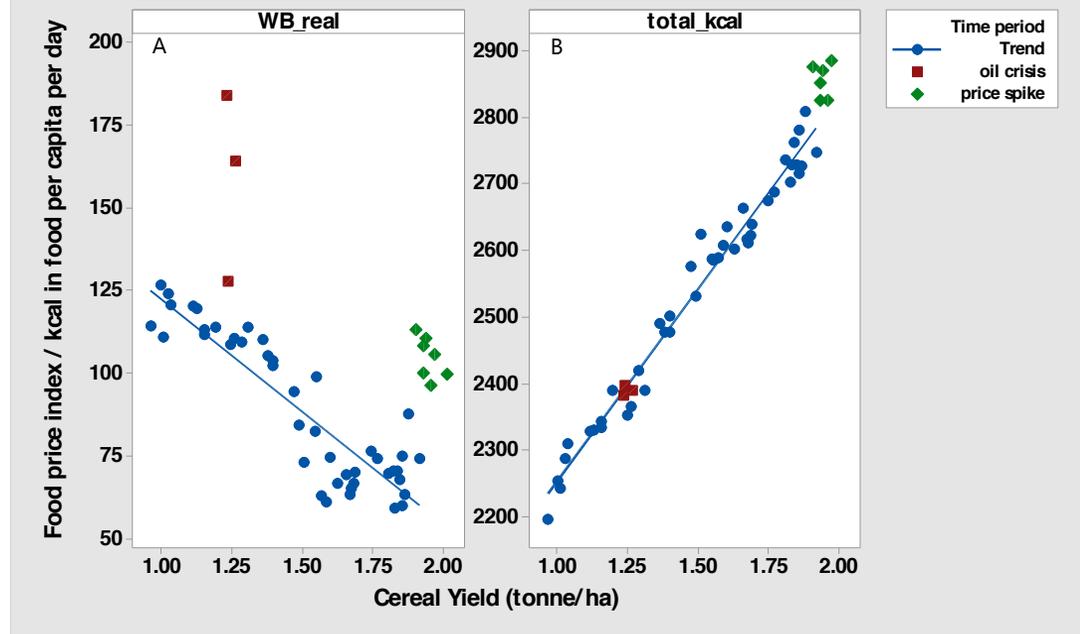
We are not feeding the world nutritiously



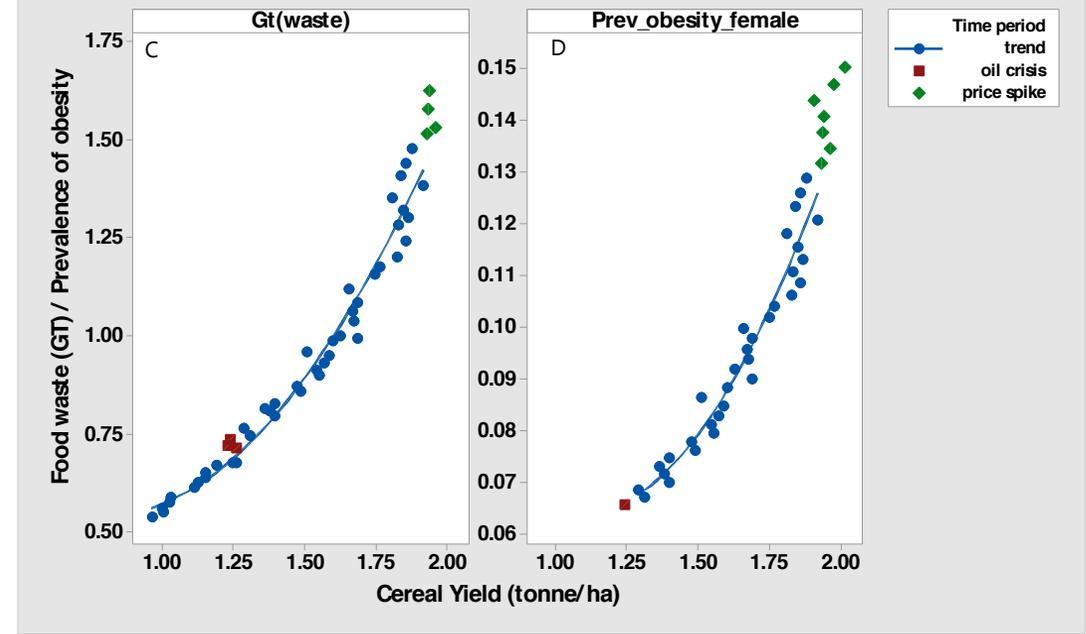
Citation: KC KB, Dias GM, Veeramani A, Swanton CJ, Fraser D, Steinke D, et al. (2018) When too much isn't enough: Does current food production meet global nutritional needs? PLoS ONE 13(10): e0205683. <https://doi.org/10.1371/journal.pone.0205683>

Increasing yield is not “the answer”

Lower food prices and greater availability of food are associated with larger yields



Food waste and obesity are associated with larger cereal yields



2. Events and drivers that will shape the world



What are the key “mega-trends that will shape the future?”

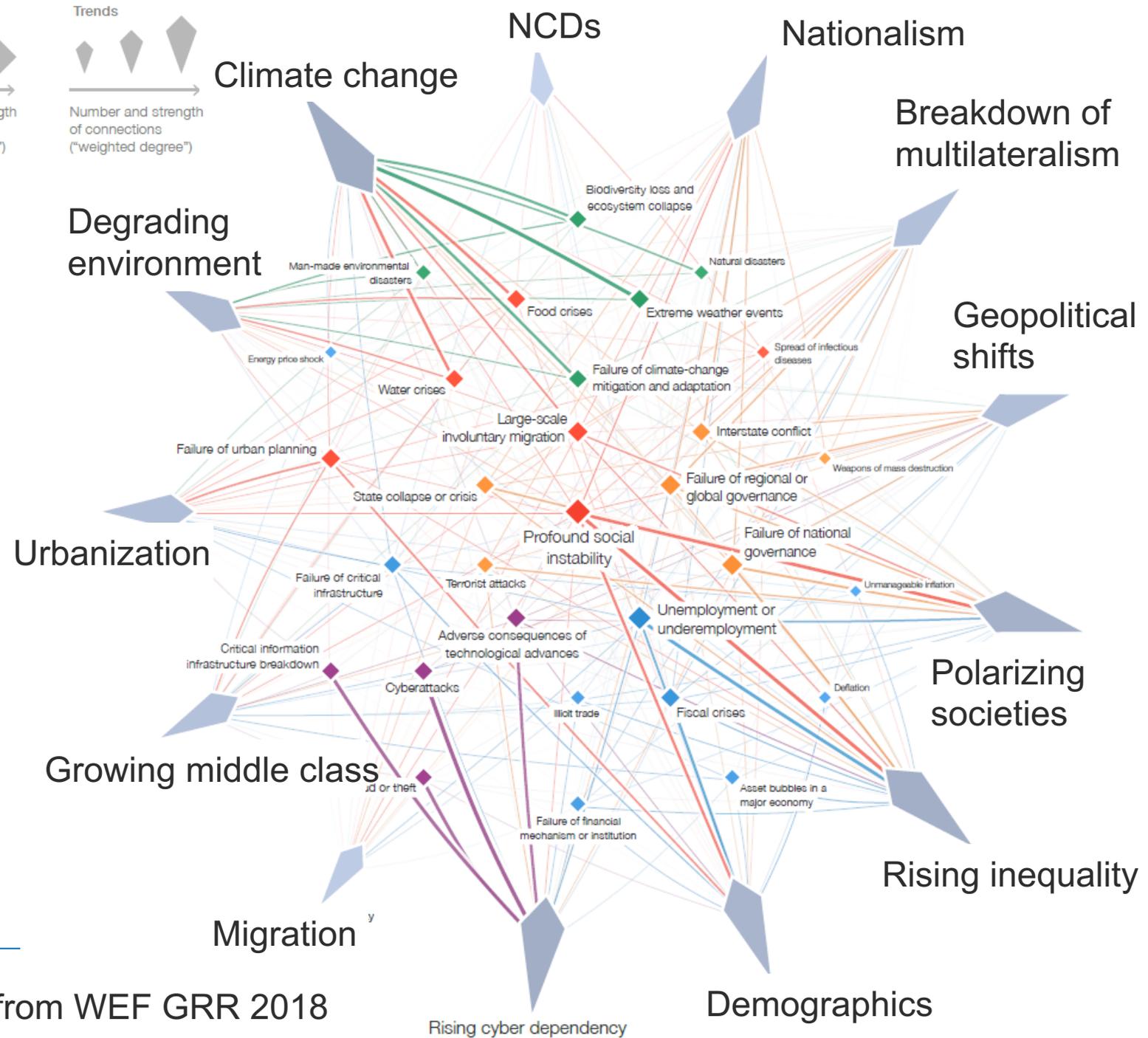


Fig from WEF GRR 2018

Many emerging drivers of systemic change...

The world is increasingly

Turbulent

Uncertain

Novel

Ambiguous

TUNA



Move away from international rules-based cooperation

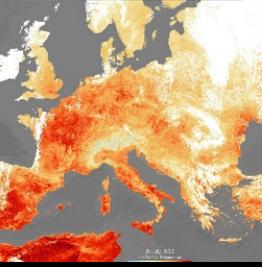
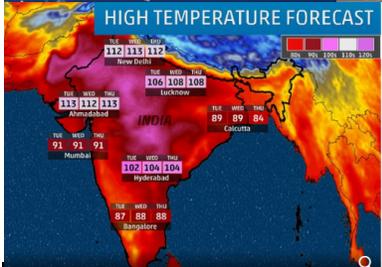
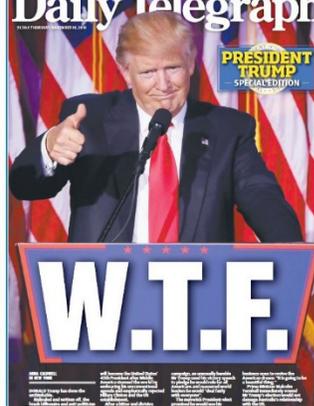
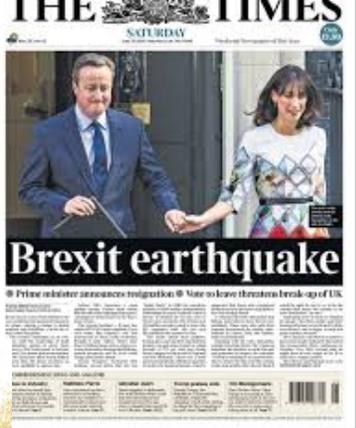
Inequality as driver of social change

Climate change and environmental degradation, and increasing climate shocks

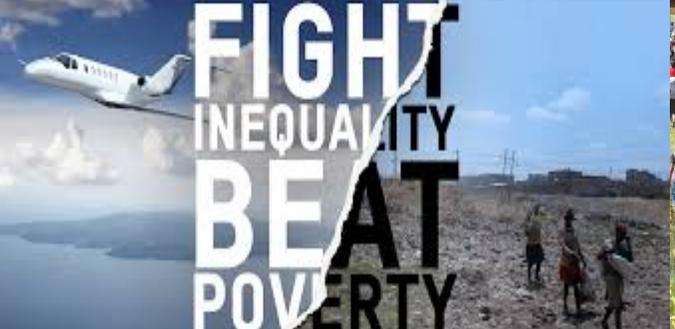
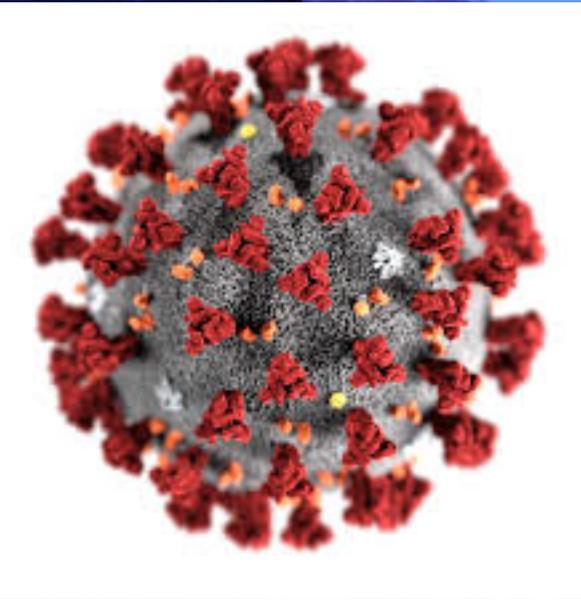
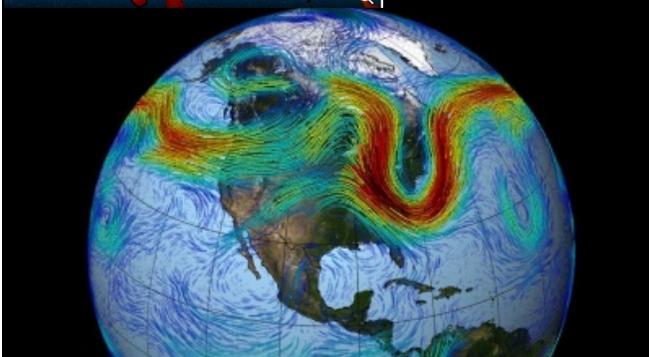
Increasing fragility of globally interconnected systems

Need to adopt preventative health care as curative becoming too expensive...

“deglocalisation”



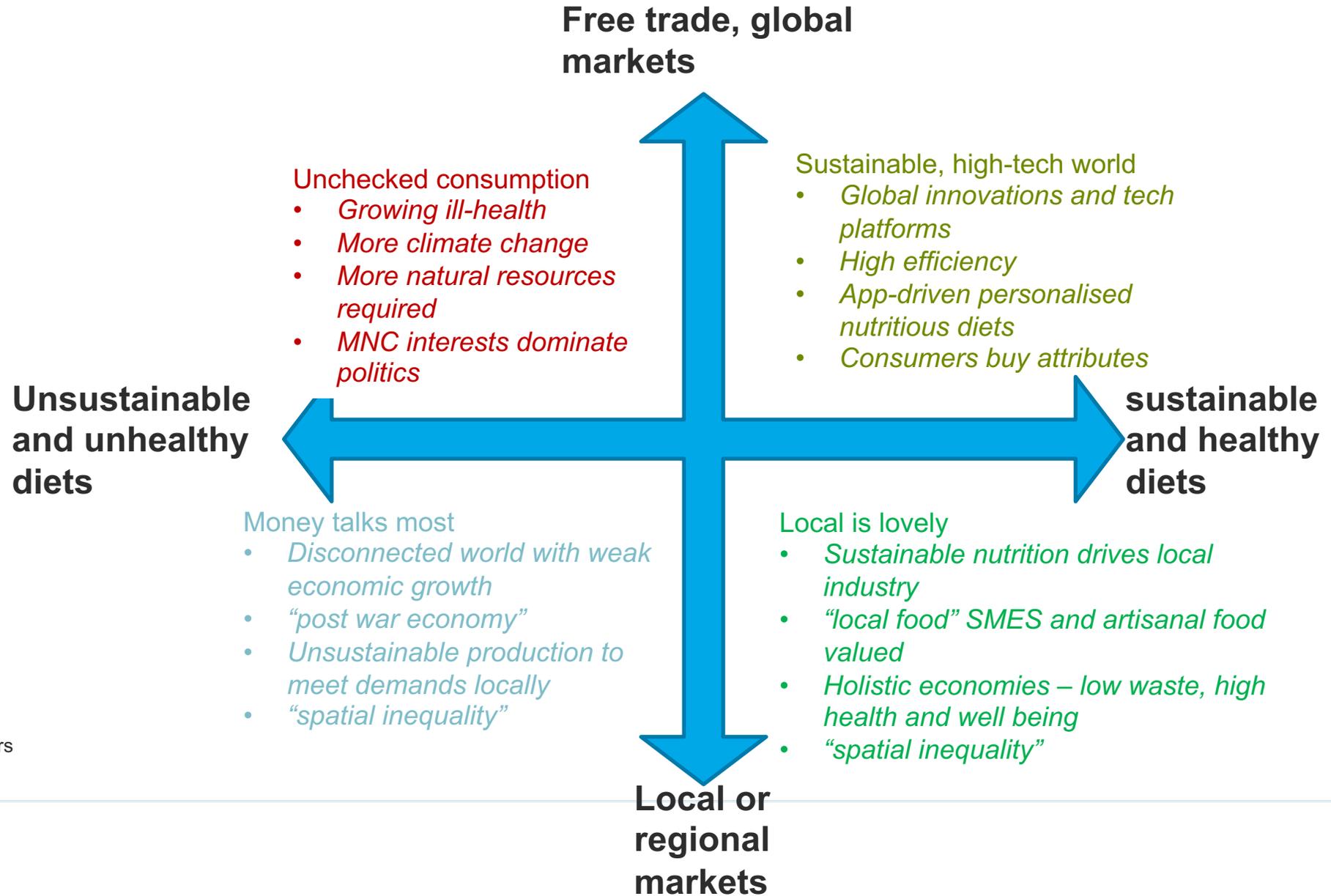
Events happen that can reshape the world



What are scenarios and what are they for?

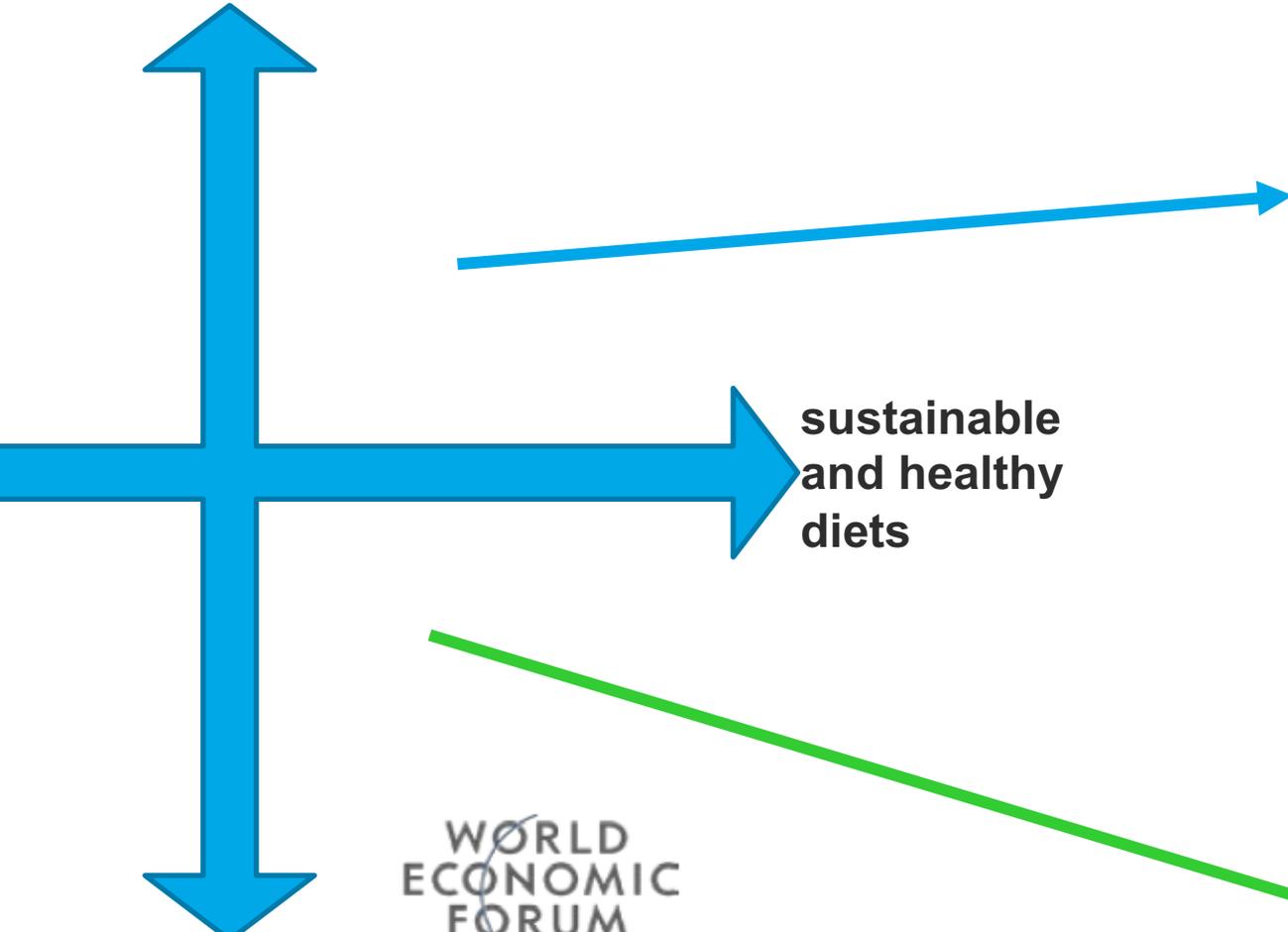
- Assumptions about the future are **always** wrong, though we often don't question them
 - The future is highly uncertain: **scenarios** force thinking about alternative but plausible futures
 - Provide and challenge leaders to think in new ways
 - Scenarios unblock “business as usual” thinking
 - Scenarios help decision making under uncertainty
 - Stimulate “do no harm” and “positive pathway” decision making
-

Scenario: a set of plausible assumptions about the way the world works in future; typically presented as rich, dialogue-driven narratives



Research and innovation agenda

Free trade, global markets



Commodity crops, large scale
Biotechnology and biofortification
Ultra-processed foods
Long supply chains
Lots of robotics



sustainable and healthy diets

More varied diets to provide nutrients
More varied farming systems, smaller scale
Less agricultural efficiency and more system efficiency
Low waste
Whole foods, cooked at home
Short supply chains



COMMITTED TO IMPROVING THE STATE OF THE WORLD

<https://www.weforum.org/whitepapers/shaping-the-future-of-global-food-systems-a-scenarios-analysis>



Global Panel
on Agriculture and Food Systems for Nutrition

So, given the world is changing...

...how might the changes – in demand, markets, trade, stability, multilaterality, climate – affect what is grown, where and how?

...how might agriculture be in future? Will it be small-holder-led, or consolidated? What will be grown, for what markets?

...how fast will agriculture change?

...what will be the need for genetic conservation?

Thank you!

