

Food Systems & Sustainability

Food Forum 30th Anniversary Symposium

National Academy of Sciences Building
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Agricultural Research Service
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Disclosures

Improving Vitality, Sustainability, and Value-Added Processing by Animal Food Systems in the New England States in a manner that Enhances Nutrition and Public Health

- Project Number: 8090-44530-001-000-D
- Project Type: In-House Appropriated

Increasing Small-Farm Viability, Sustainable Production and Human Nutrition in Plant-Based Food Systems of the New England States

- Project Number: 8090-44000-001-000-D
- Project Type: In-House Appropriated

1. The concept of food systems

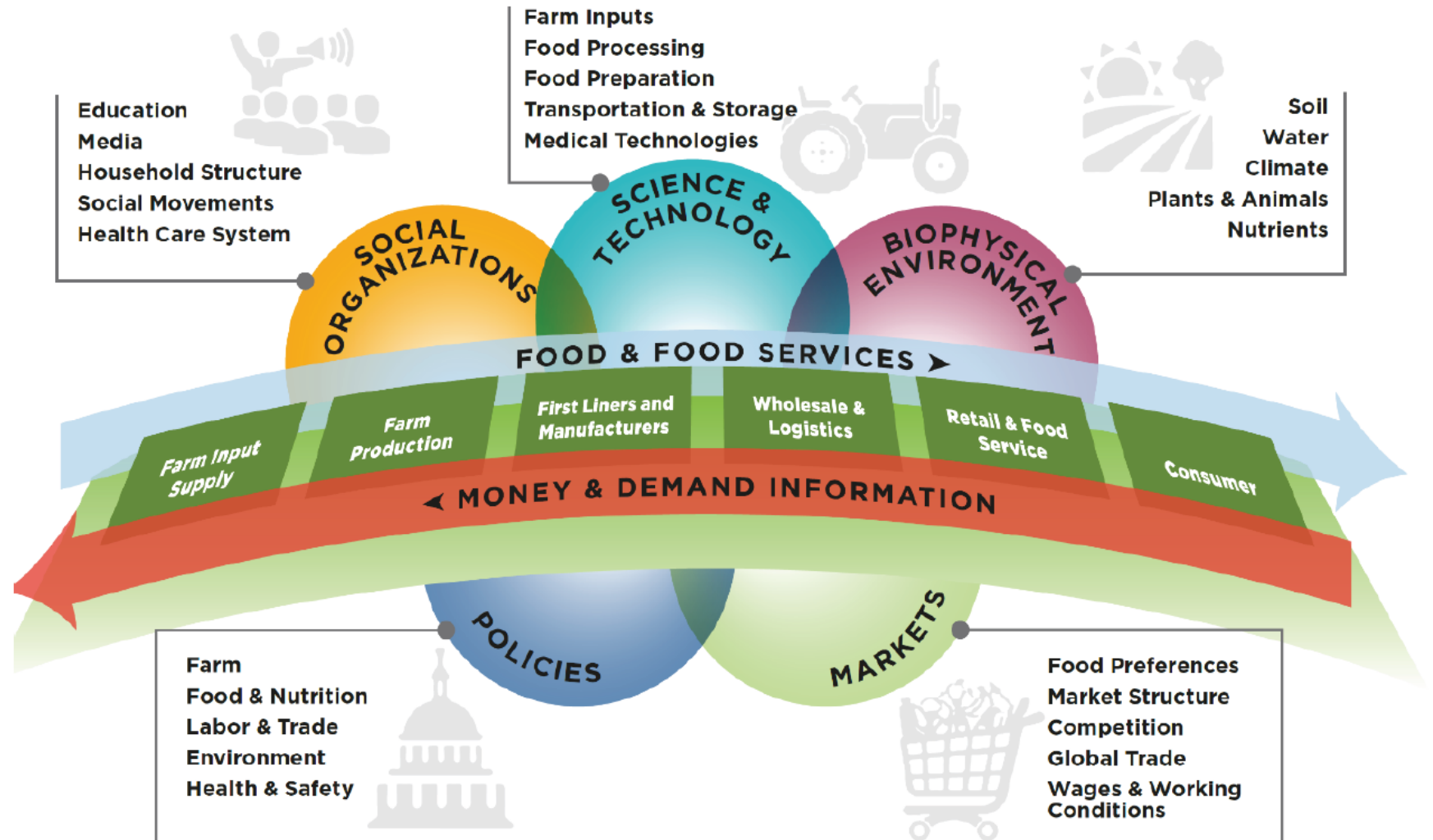
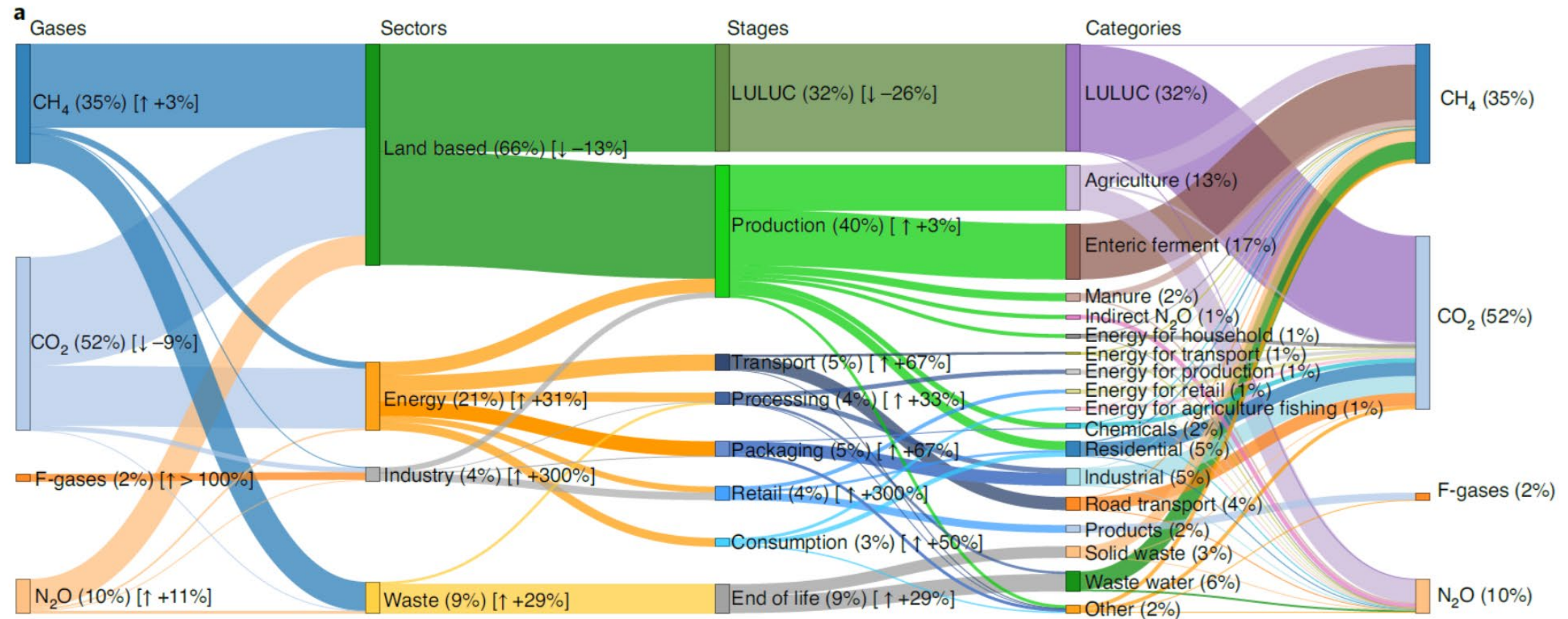


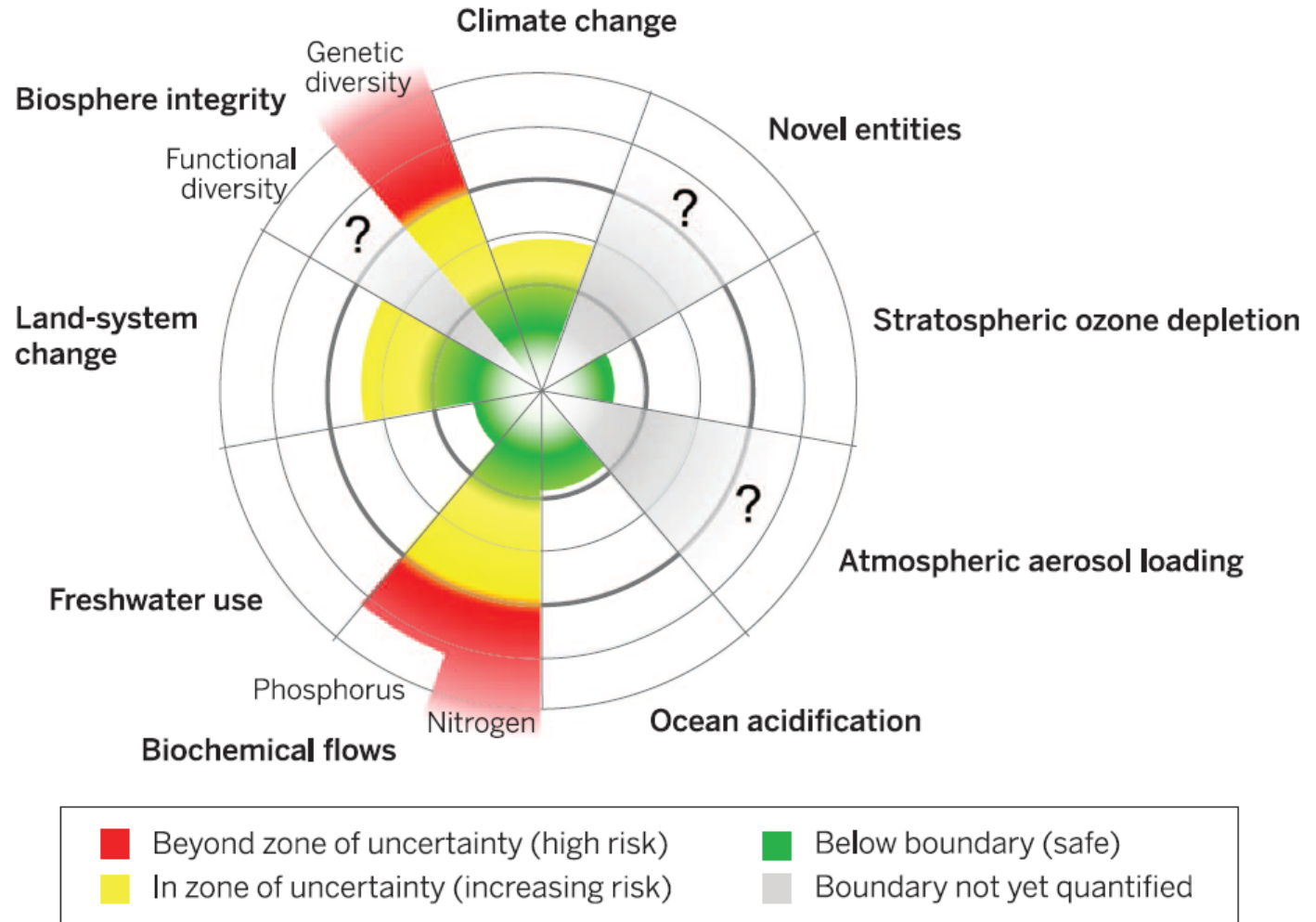
Fig. 2-8. Links between the food supply chain and the larger biophysical and social/institutional context.
In National Research Council 2015. A Framework for Assessing Effects of the Food System.
<https://doi.org/10.17226/18846>.

2. Measuring key indicators



From Fig. 3. Sankey diagram for GHG emissions from the food system in 2015 in Crippa *et al.* 2021. Food systems are responsible for a third of global anthropogenic GHG emissions. *Nature Food*. <https://doi.org/10.1038/s43016-021-00225-9>

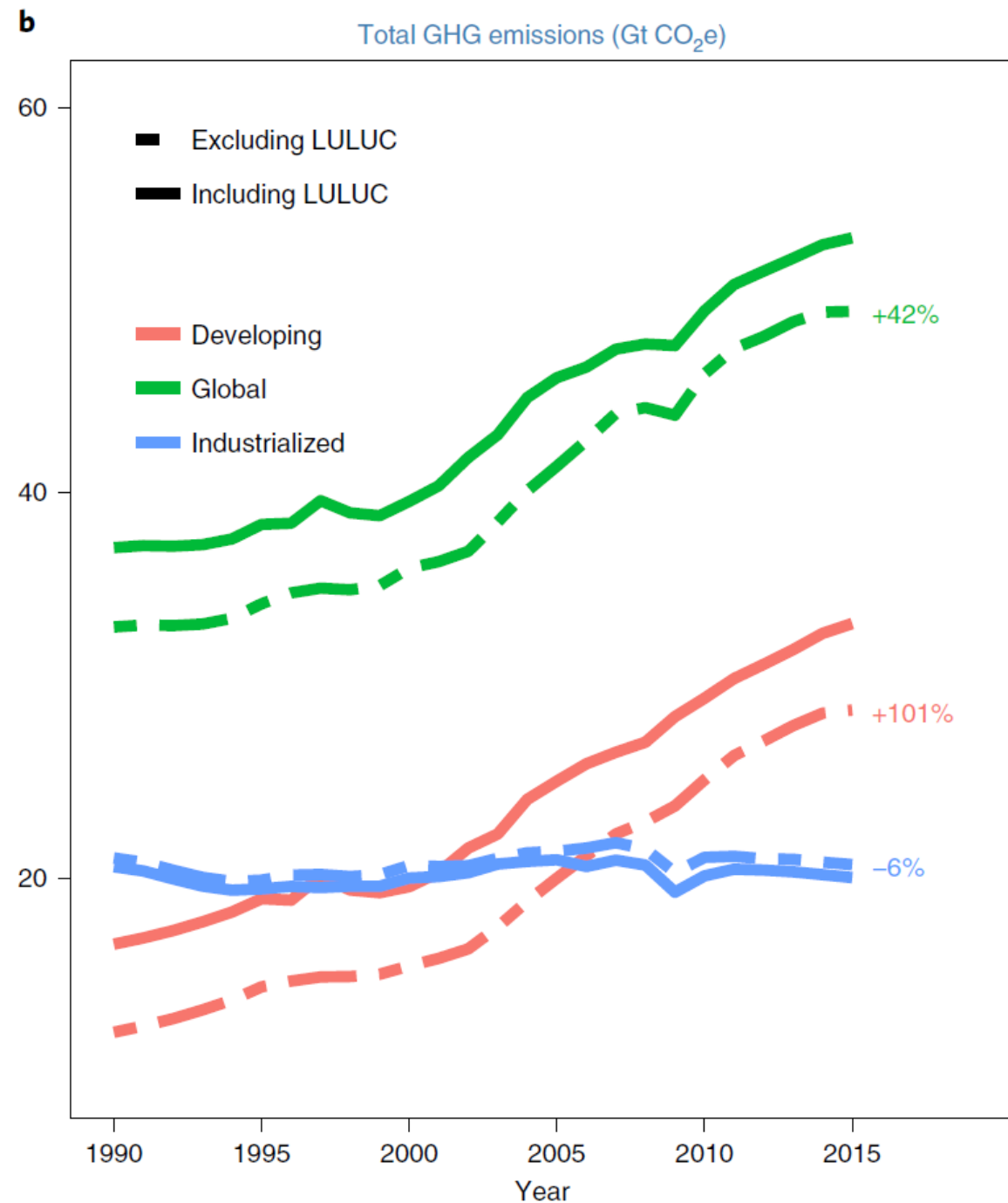
3. Putting indicators in context



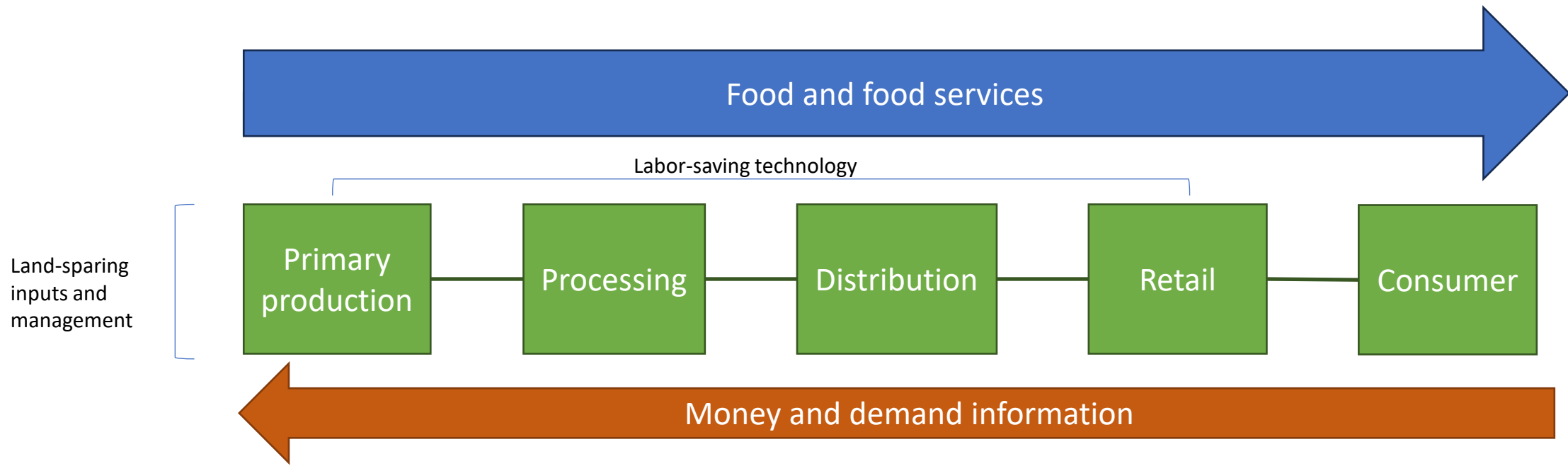
Steffen et al. 2015. Planetary boundaries: Guiding human development on a changing planet. *Science* **347** (6223). DOI: 10.1126/science.1259855

Are we making progress in increasing sustainability?

From Fig. 2. Total GHG emissions and food-system data globally, and in developing and industrialized countries, in Crippa *et al.* 2021. Food systems are responsible for a third of global anthropogenic GHG emissions. *Nature Food*.



Why aren't we doing better?



GOALS

Supply adequate amounts of food (productivity)
Make food more affordable (efficiency)

+

Stay within ecological boundaries (ecological sustainability)
Support balanced nutrition (improved human health)
Provide livelihoods (economic development)

Leverage points in systems

1. Transcending paradigms
2. Paradigms – The mind-set out of which the system arises
3. Goals – The purpose or function of the system

Three propositions for building consensus through applied research

- Ask compelling questions with broad appeal
- Pursue these questions collaboratively
- When in doubt, return to first principles