

Healthy People, Healthy Planet: Building a More Sustainable, Resilient, Equitable, and Nourishing Food System

Introduction

SESSION 3: Transformation of the Food System

Food Forum Virtual Workshop

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Disclosures

Employment

- On faculty of Tufts University since 2010

Research Funding

- USDA National Institute of Food and Agriculture, AFRI Competitive Grant Program
- USDA Economic Research Service, Cooperative Agreement
- W.K. Kellogg Foundation

Invited talks (last 12 months)

- Danone Institute North America
- National Dairy Council

Vision for the workshop

1. **Vulnerabilities** of the Food System
2. **Resilience** of the Food System
3. **Transformation** of the Food System



Expectations of the food system

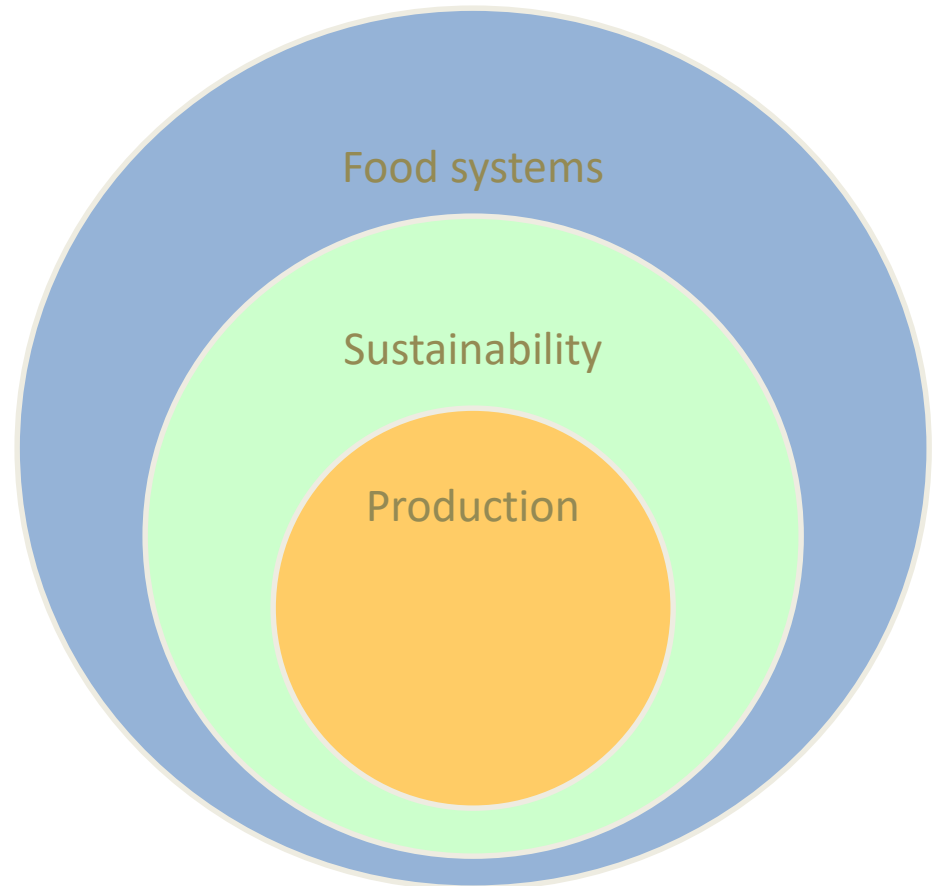
Historical expectations:

Food, feed, and fiber

New expectations:

All of the above, plus

- Improved human health
- Reduced ecological footprint
- C source to C sink



Agricultural paradigms from Welch, R.M. and Graham, R.D.. 1999. A new paradigm for world agriculture: meeting human needs. *Field Crops Research* 60: 1-10.

Vulnerabilities

Ecological

Planetary boundaries and food security

Socio-economic

Need to better account for these vulnerabilities
in interdisciplinary analysis

Mindset

Proposed agroecological frame for the food
system

Resilience

Complex dynamic systems

Relative efficiency v. absolute impact, linear v. circular systems

In current food systems

Examples of resilience from farms, conservation programs, and regenerative agriculture

In future food systems

Examples from aquatic systems, particularly aquaculture

A wide-angle photograph of a rural landscape. In the foreground, a grassy field is partially enclosed by a wire fence supported by wooden posts. The middle ground shows a line of trees and a few small buildings. In the background, rolling hills are visible under a clear blue sky.

What are we trying to achieve?

TRANSFORMATION

The Brundtland Report

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:

1. the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
2. the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.

The Sustainable Development Goals



Sustainable Development Targets

GOAL 2: End Hunger

- 2.1 By 2030, end hunger and ensure access by all people.
- 2.2 By 2030, end all forms of malnutrition.
- 2.3 By 2030, double the agricultural productivity and incomes of small-scale food producers.
- 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production.
- 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species.

Agriculture & Food Systems

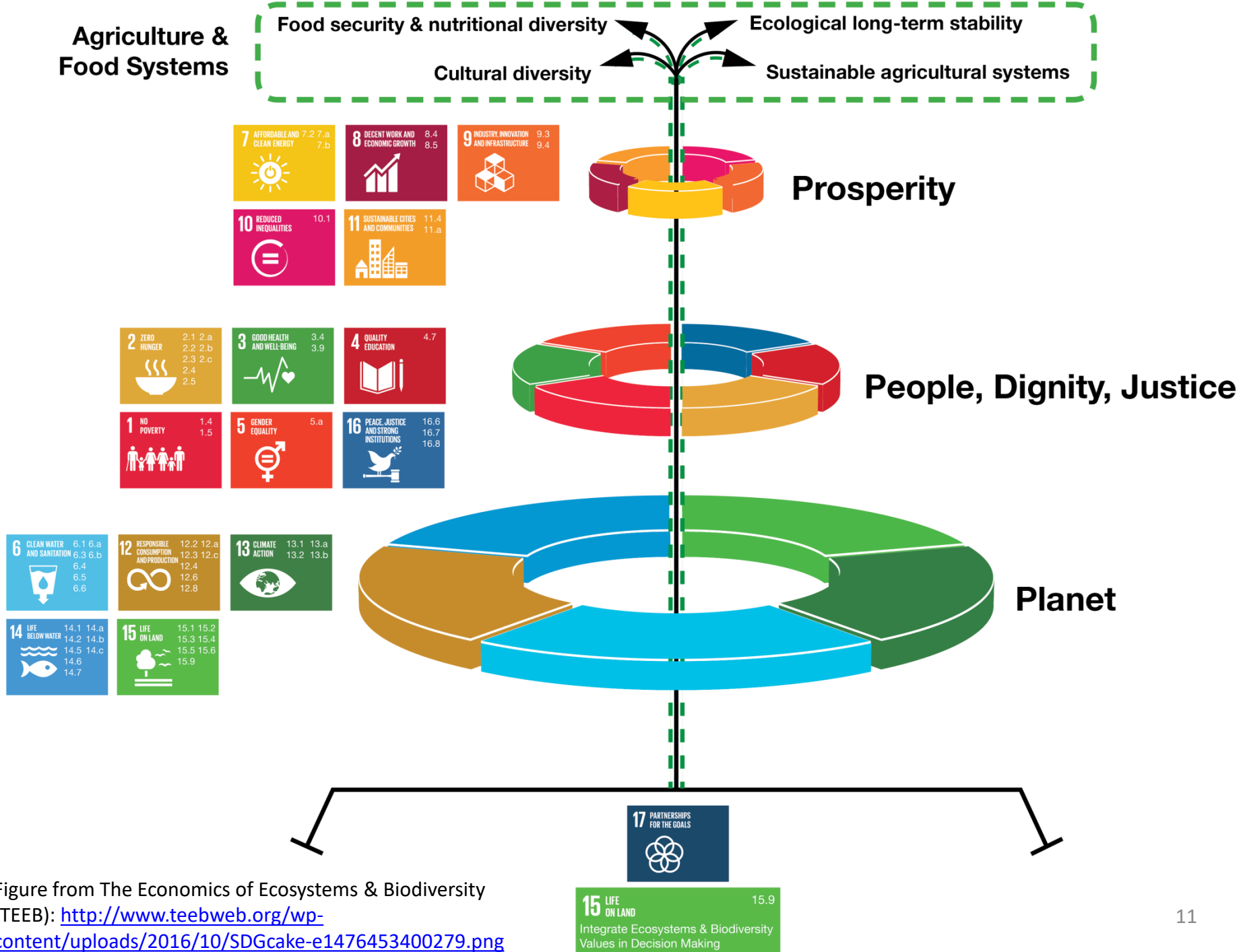


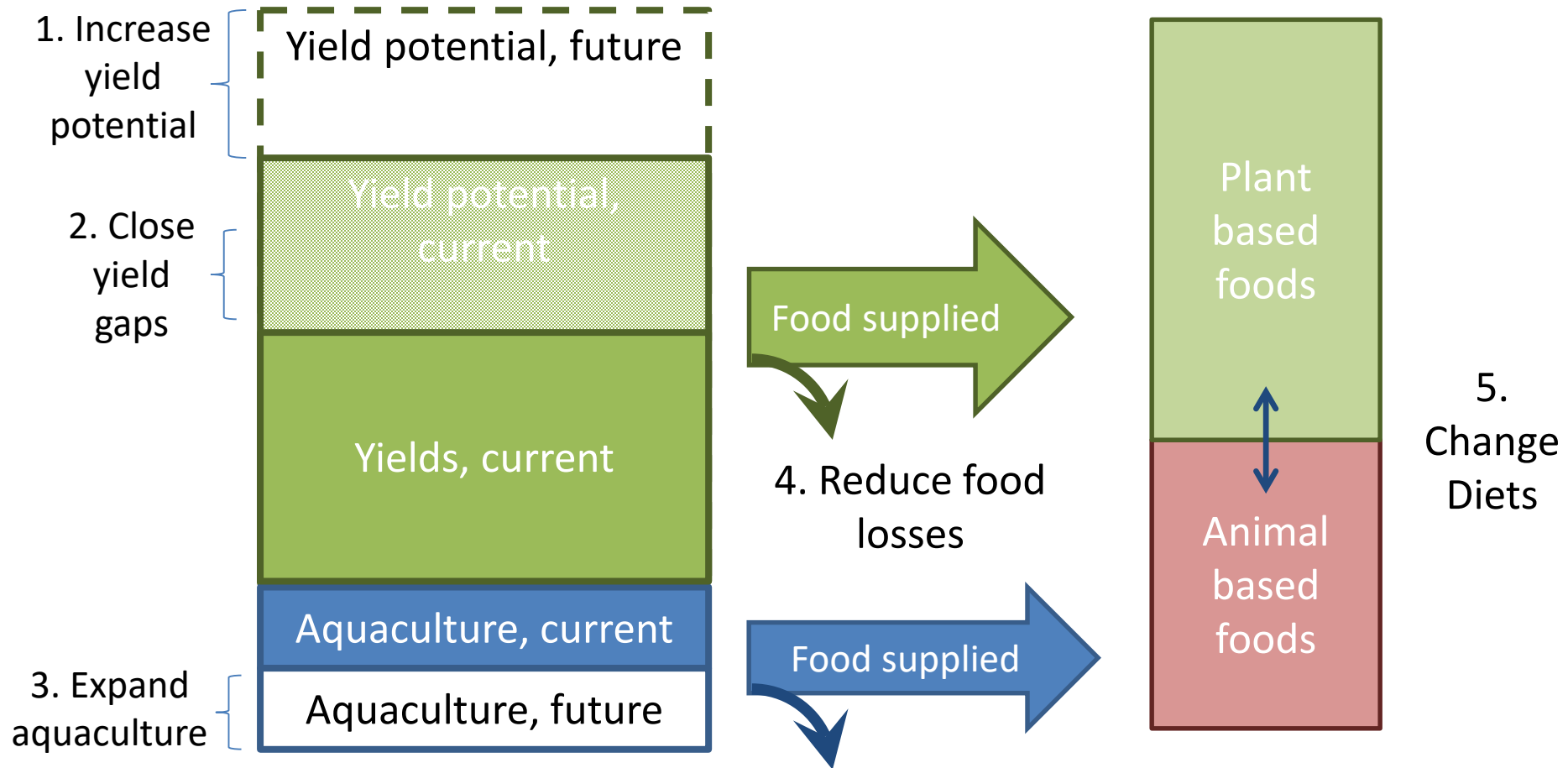
Figure from The Economics of Ecosystems & Biodiversity (TEEB): <http://www.teebweb.org/wp-content/uploads/2016/10/SDGcake-e1476453400279.png>



How do we create such a food system?

TRANSFORMATION

Possible strategies for food security



What is a food system?

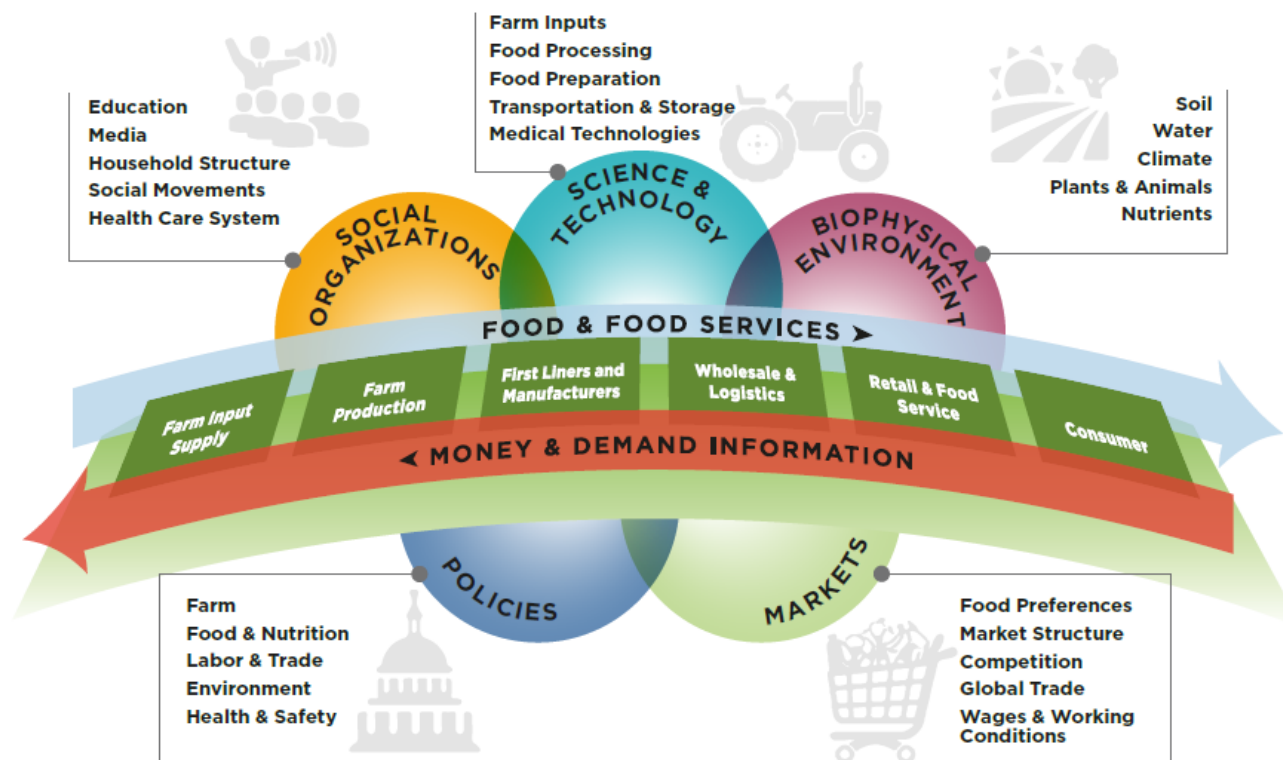


FIGURE 1 Links between the food supply chain and the larger biophysical and social/institutional context.

SOURCE: IOM (Institute of Medicine) and NRC (National Research Council). 2015. *A framework for assessing effects of the food system*. Washington, DC: The National Academies Press.

Working at multiple scales

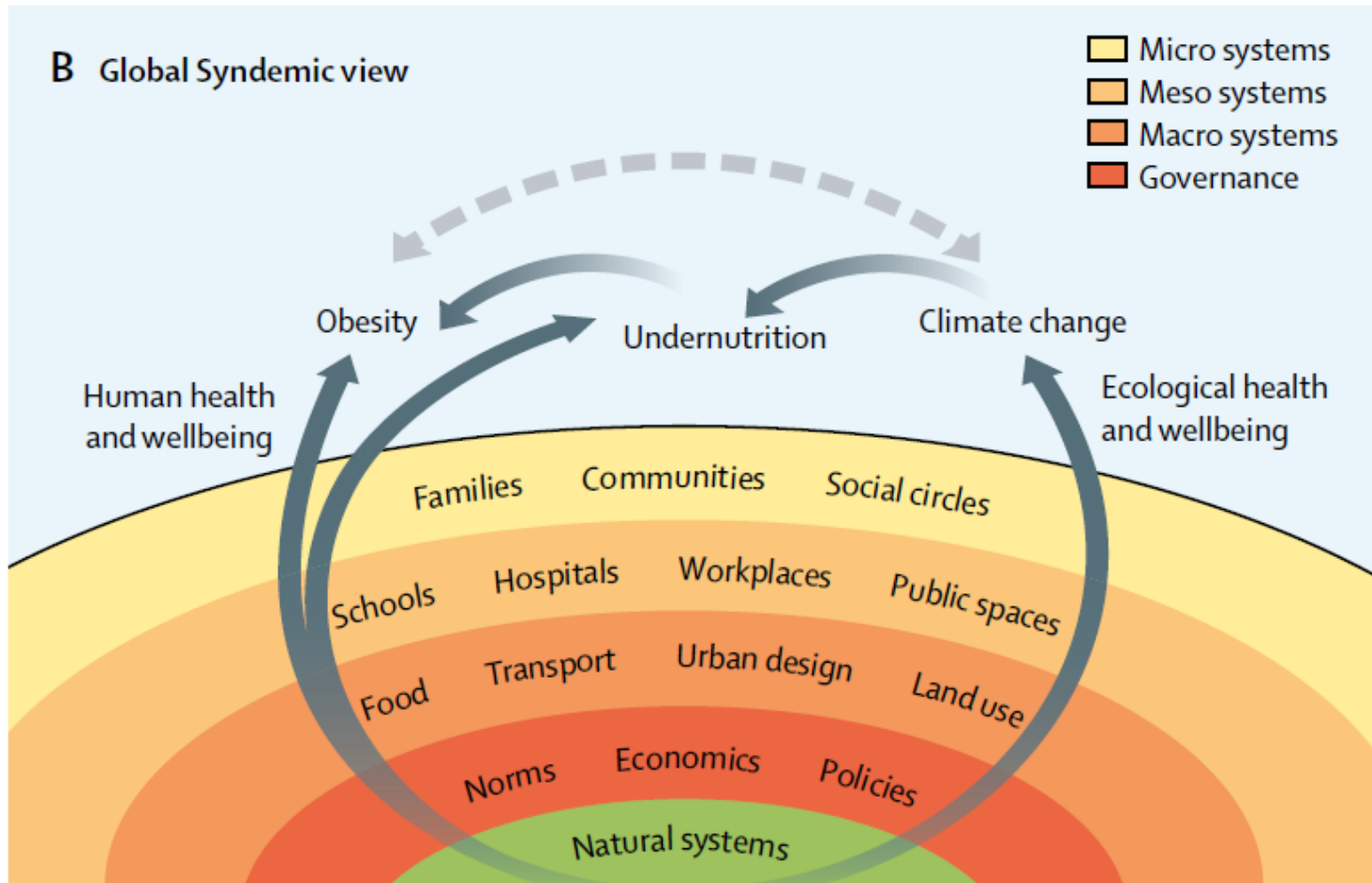


Figure 2 from Swinburn et al. 2019. The Global Syndemic of Obesity, Undernutrition, and Climate Change: *The Lancet* Commission Report. *Lancet* 393: 791-846. [http://dx.doi.org/10.1016/S0140-6736\(18\)32822-8](http://dx.doi.org/10.1016/S0140-6736(18)32822-8)

Today's Agenda

- 10:25 Incentivizing Food Systems Transformation
- 10:50 Consumption-Oriented Strategies: Considering the Whole Value Chain
- 11:15 Beyond Resilience: Design Strategies for our Preferred Food Futures
- 11:40 Policy Approaches to Enable Multiple Pathways to Change
- 12:05 Panel discussion

Questions?

