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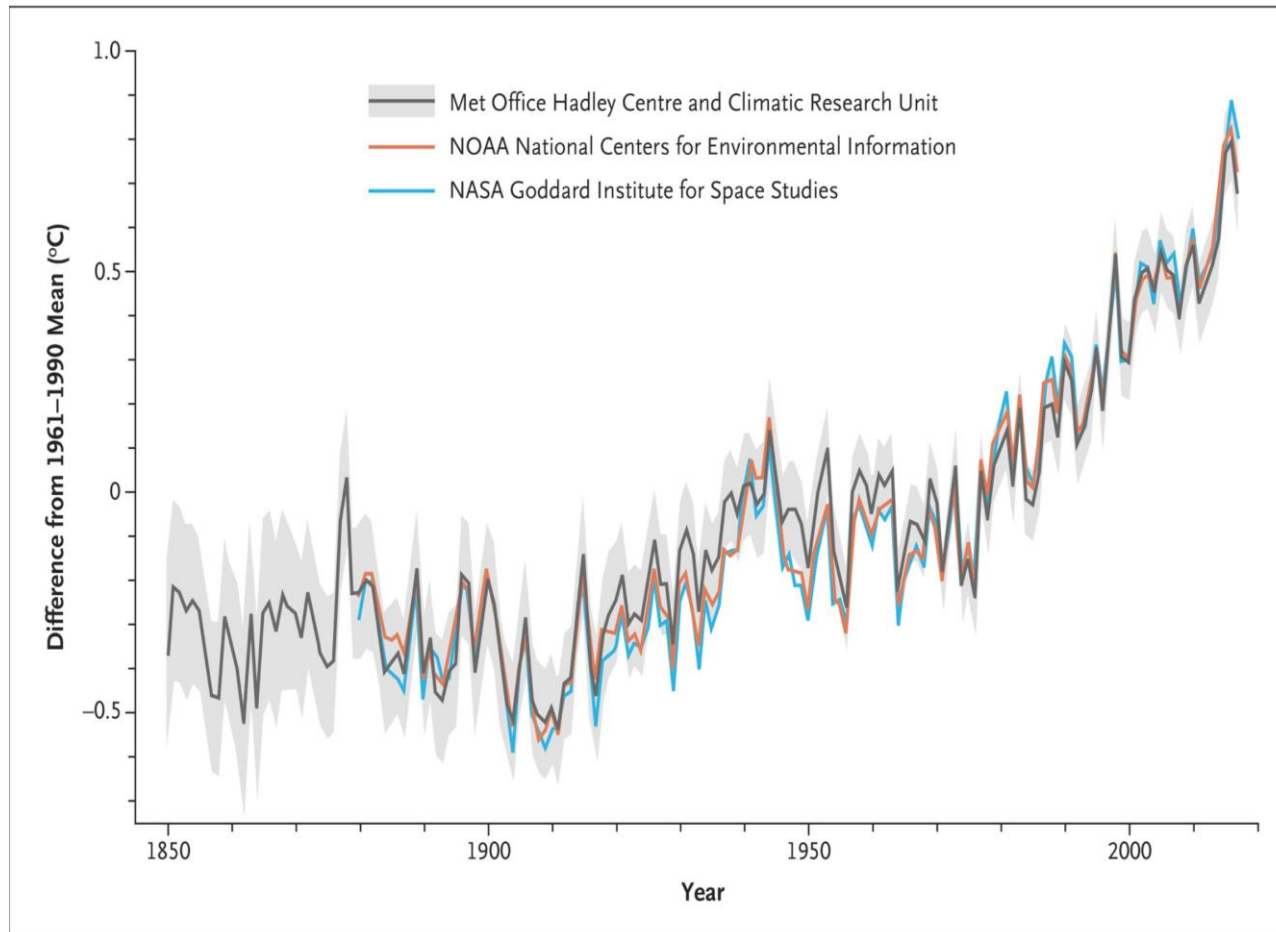
The Global Syndemic of Obesity, Undernutrition, and Climate Change in the Era of Covid-19

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THE GEORGE WASHINGTON UNIVERSITY

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Global Center for
Prevention & Wellness

Changes in Surface Temperature 1850-2017



Haines A, Ebi K. NEJM 2019; 380:263

GHG Generation

<u>Source</u>	<u>US</u>	<u>Global</u>
Food supply	10%	20-25%
Fossil fuels	30%	10%
Food waste	8%	8%

The Global Burden of Obesity, Diabetes, Undernutrition, and Climate Change

Obesity

2 billion people worldwide
\$2 Trillion/year

Stunting

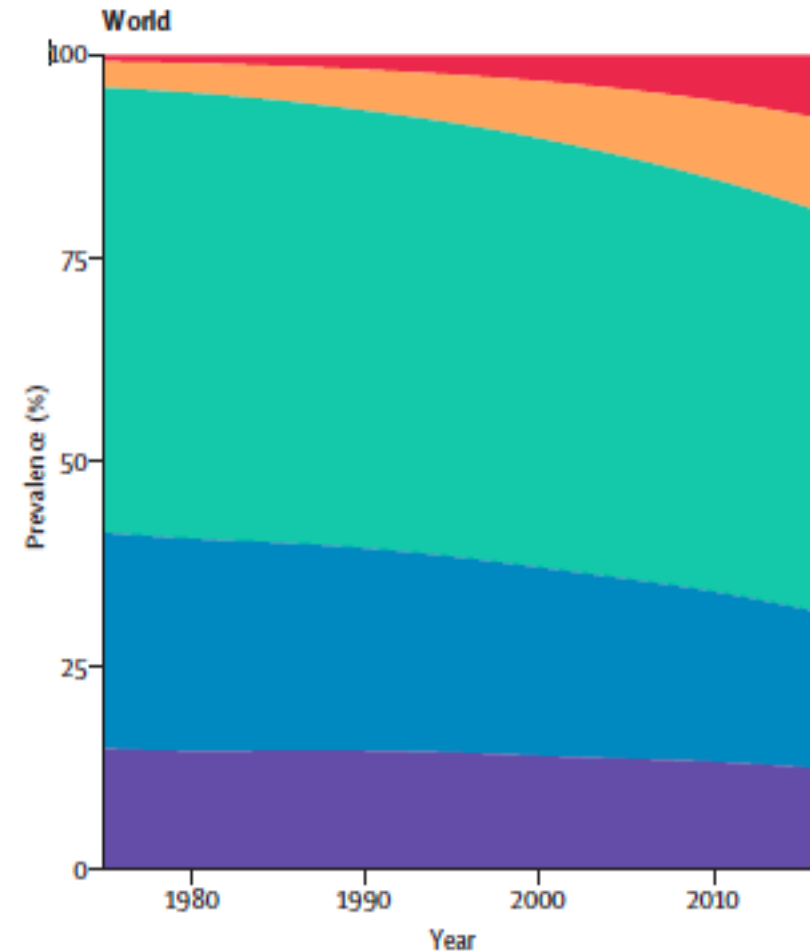
155 million children with stunting
815 million people with chronic undernutrition

Malnutrition in all its forms

\$3.5 Trillion/year

Climate change

5-10% world's GDP
Heat related deaths
Increased vector-borne infectious diseases

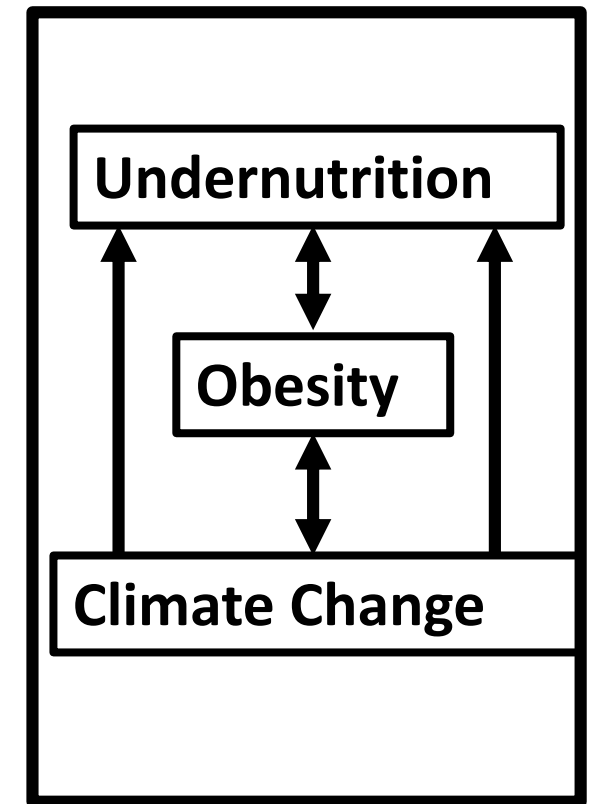


Syndemics

- **Clusters of diseases within a population**
- **Adverse disease-promoting interactions at both biological and biosocial levels**
- **Large scale social forces that precipitate disease clustering in the first place, often with a disparate impact on marginalized populations**

Mendenhall E and Singer M, Curr Opinion HIV and AIDS 2020; 15:213

The Global Syndemic of Obesity, Undernutrition, and Climate Change: Outcomes, Systems and Drivers



Outcomes

Swinburn B et al. Lancet 2019; 393:791

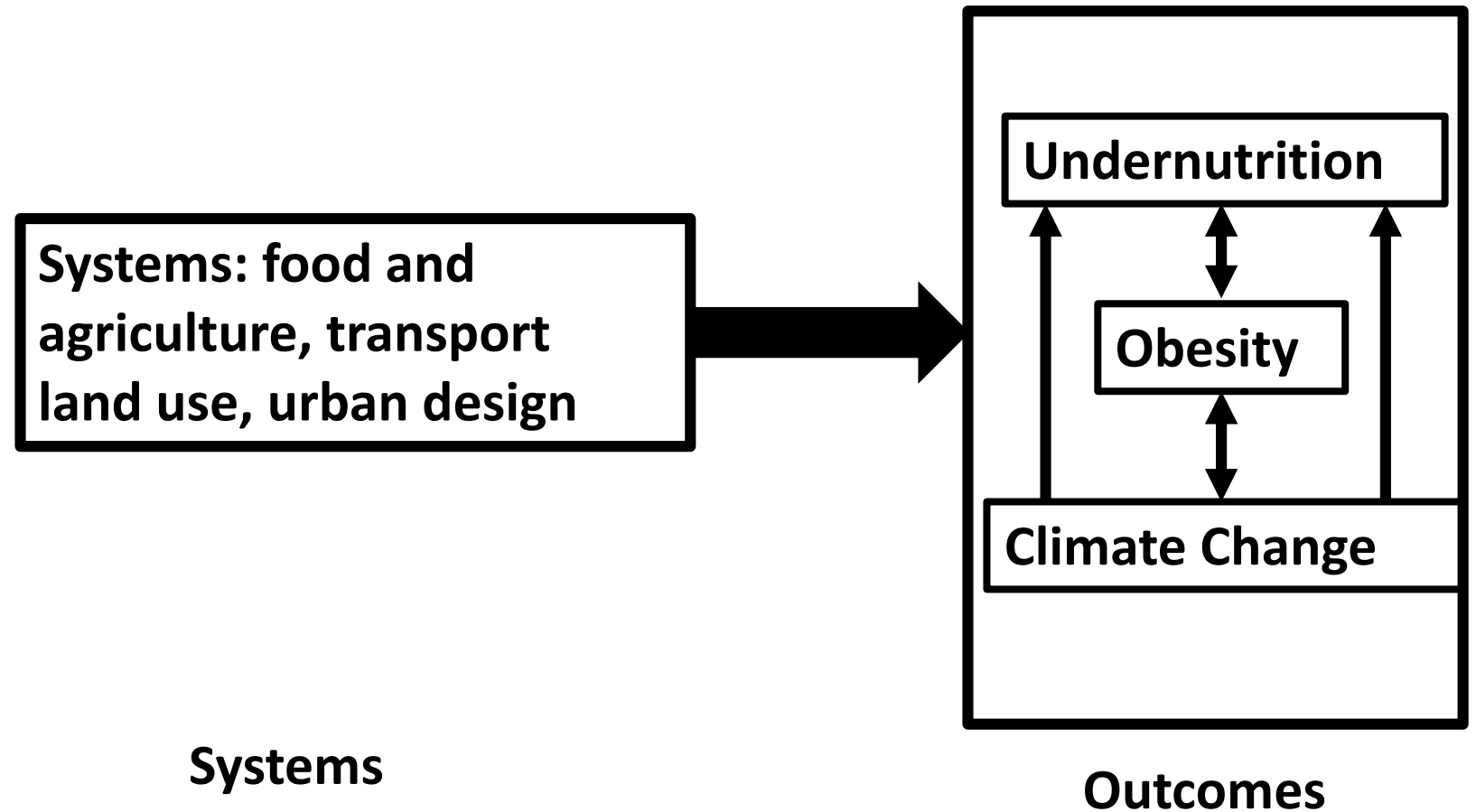
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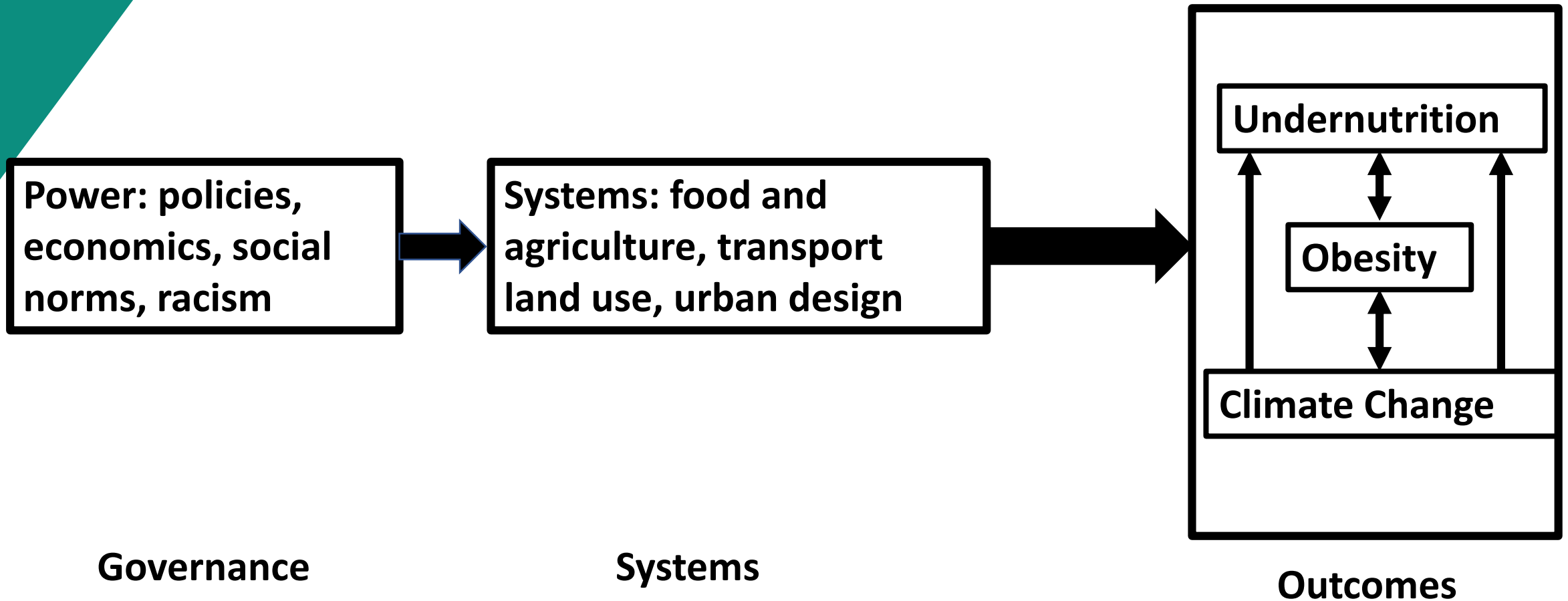
Examples of Interactions

- **Obesity, stunting, and food insecurity in the same children and same population in LMICs**
- **Car use, GHG emissions, inactivity, and obesity**
- **Cattle production, methane emissions, meat consumption and obesity, diabetes, colon cancer and cvd**
- **Increased GHGs from HICs reduce crop yields and micronutrient content of crops which contribute to food insecurity and undernutrition in LMICs**
- **COVID-19 pandemic's impact on people with obesity, BIPOC, the essential work force, and the food supply chain**

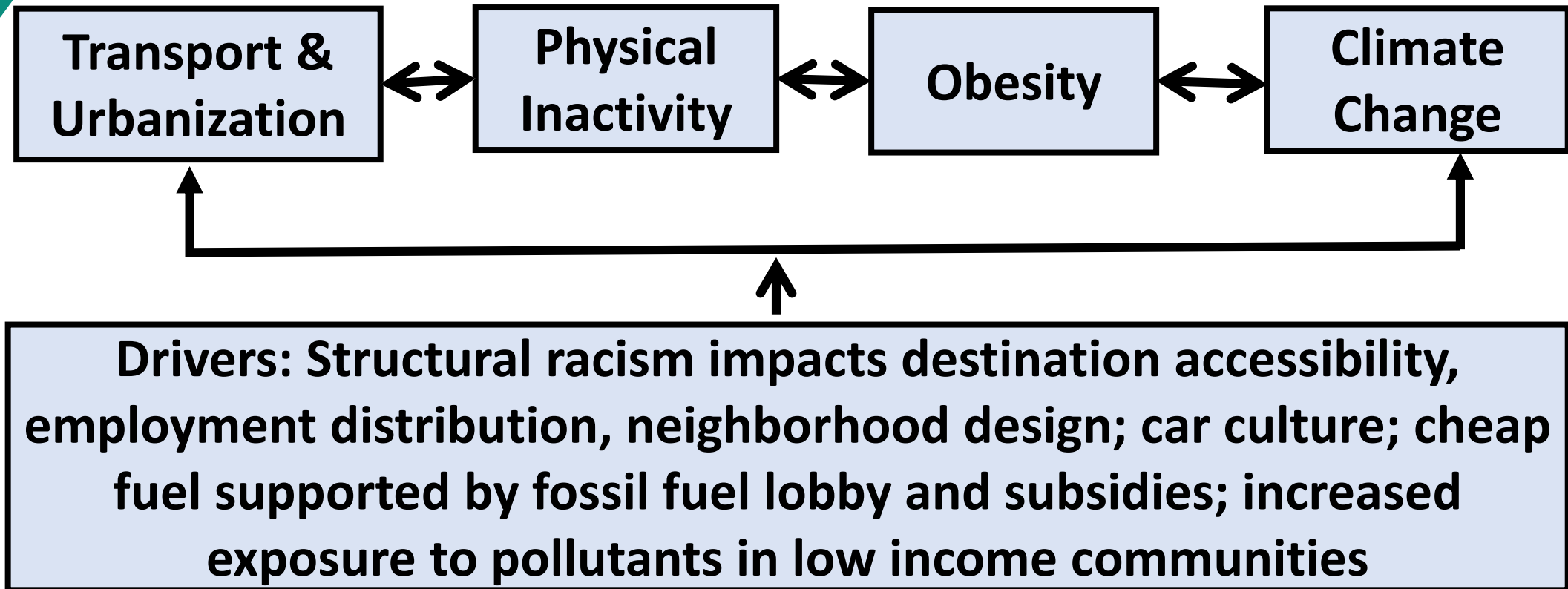
The Global Syndemic of Obesity, Undernutrition, and Climate Change: Outcomes, Systems and Drivers



The Global Syndemic of Obesity, Undernutrition, and Climate Change: Outcomes, Systems and Drivers

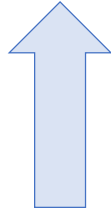


Contributions of Urban Design, Land Use and Transport Systems to the Global Syndemic



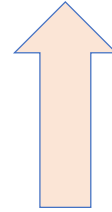
Obesity

Increased physical activity, less sedentary time



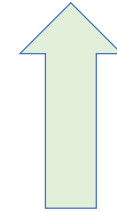
Undernutrition

Cheaper transport, access to healthy food and employment



Climate Change

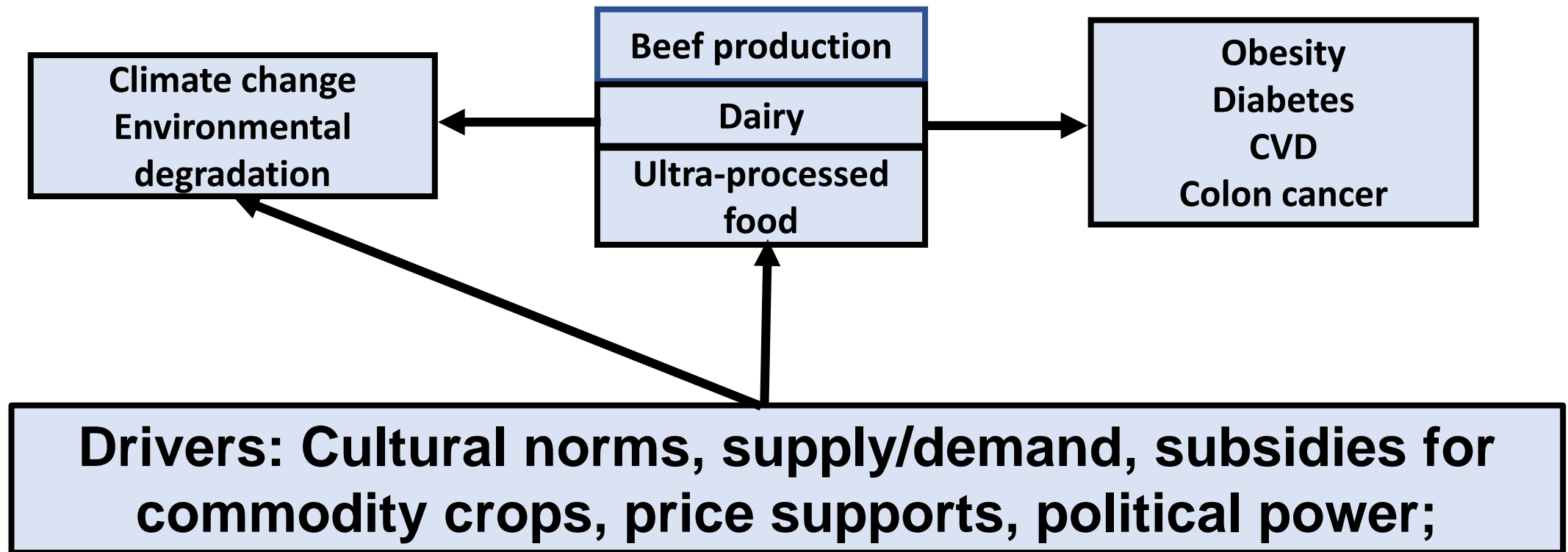
Lower GHGs from motorized transport



Triple Duty Action

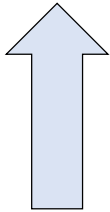
Modal shifts in transport: address structural racism – connect jobs to people; implement interconnected and mixed use neighborhoods; redesign infrastructure to support physical and public transport systems, eliminate subsidies for fossil fuel production, increase gasoline tax; build regional food systems

Contributions of the Agricultural and Food Processing Systems to the Global Syndemic



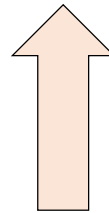
Obesity

Healthier diets for obesity, diabetes and cancer prevention



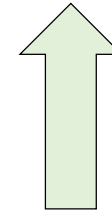
Undernutrition

Improved nutritional quality and food security



Climate Change

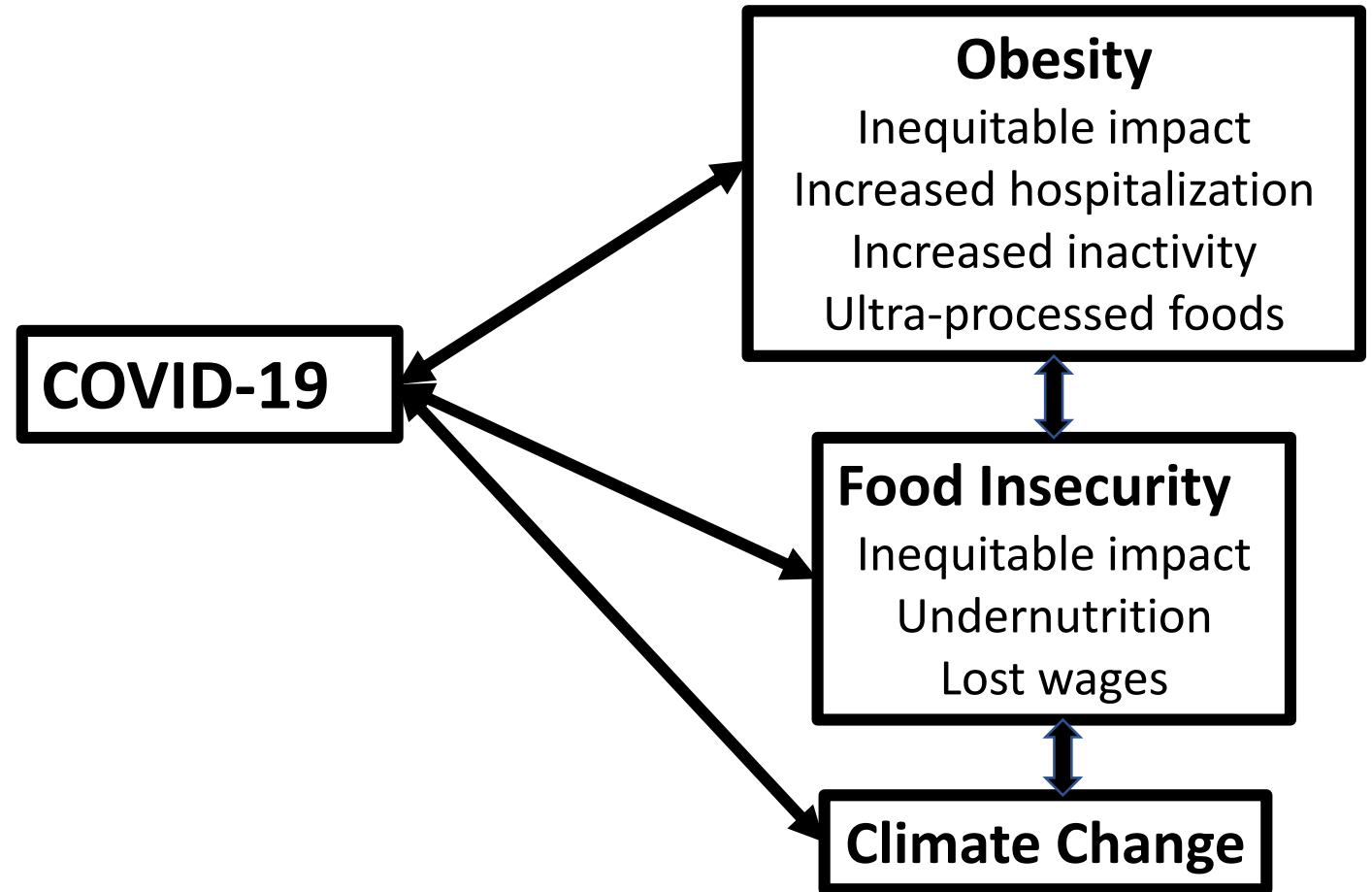
Lower GHGs from agriculture and cattle production



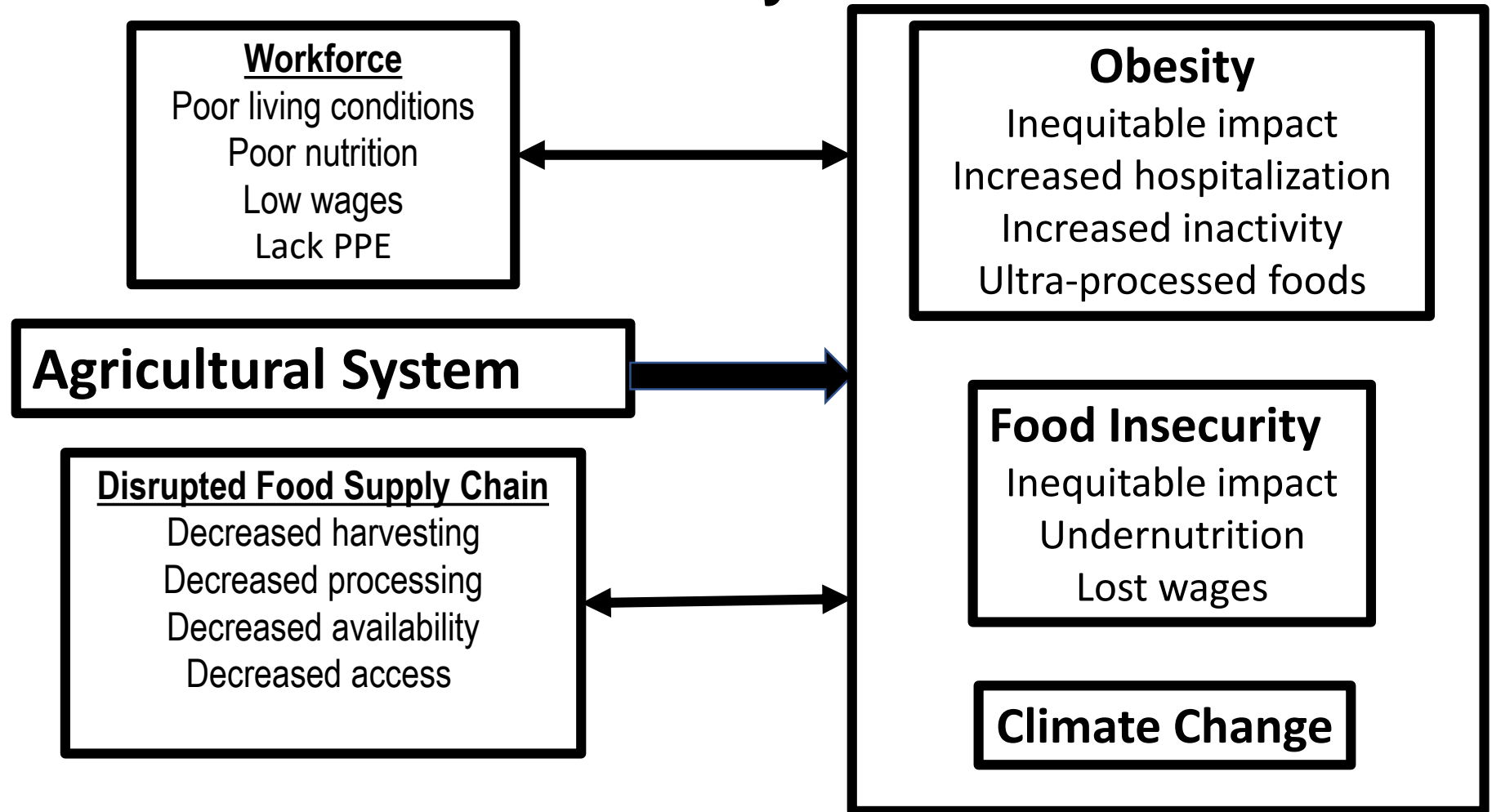
Triple Duty Action

Increase plant-based foods and reduce beef consumption:
include externalities in the costs of food; redirect subsidies for commodity crops; communication strategies to increase demand for alternatives; implement sustainable food labels and sustainable dietary guidelines;

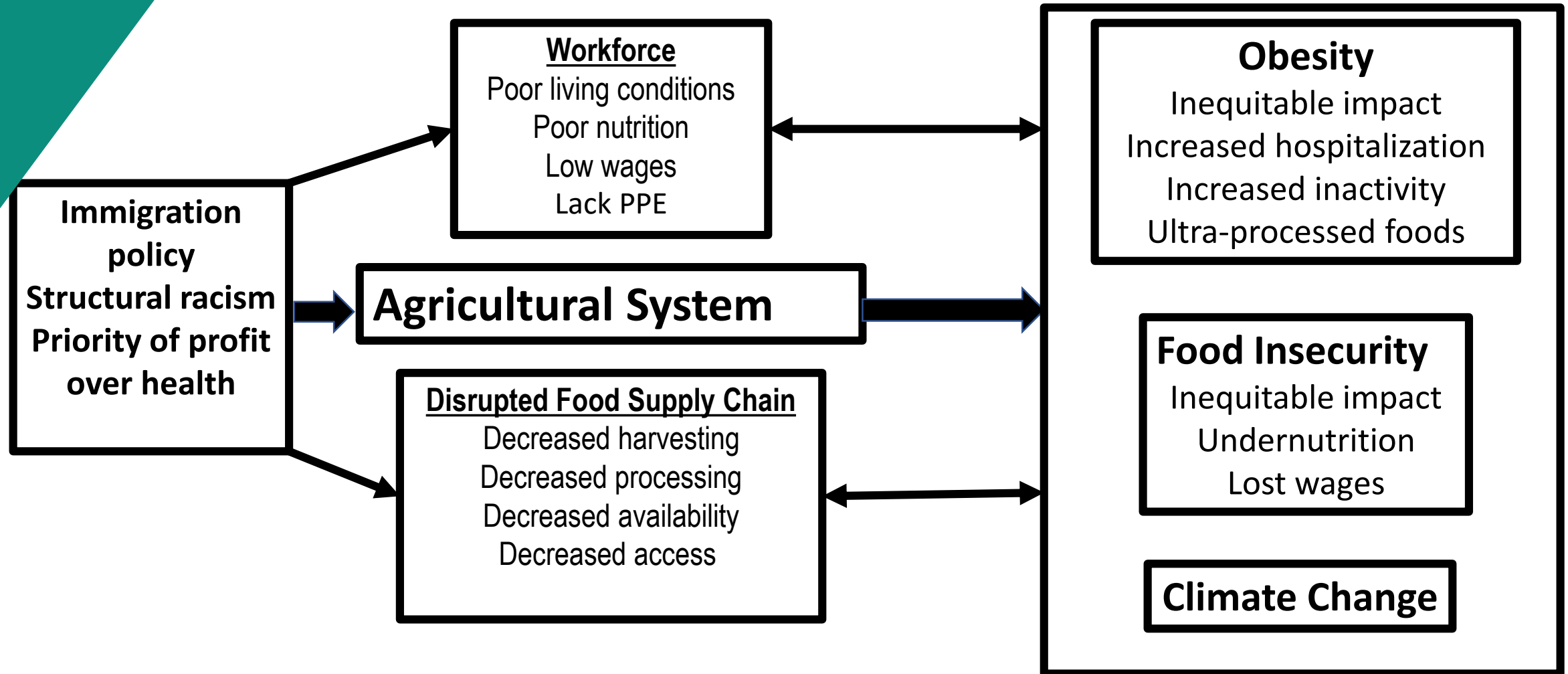
The Global Syndemic of Obesity, Undernutrition, and COVID-19: Interactions



The Global Syndemic of Obesity, Undernutrition, and COVID-19: Systems



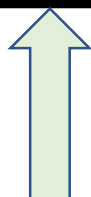
The Global Syndemic of Obesity, Undernutrition, and COVID-19: Drivers



Triple-duty Solutions for the Obesity, Undernutrition and COVID-19 Syndemic

Undernutrition

Improved health of food supply chain workforce;
Decreased COVID-19 infections



Obesity

Healthier diets for obesity & diabetes;
Decreased COVID-19 mortality



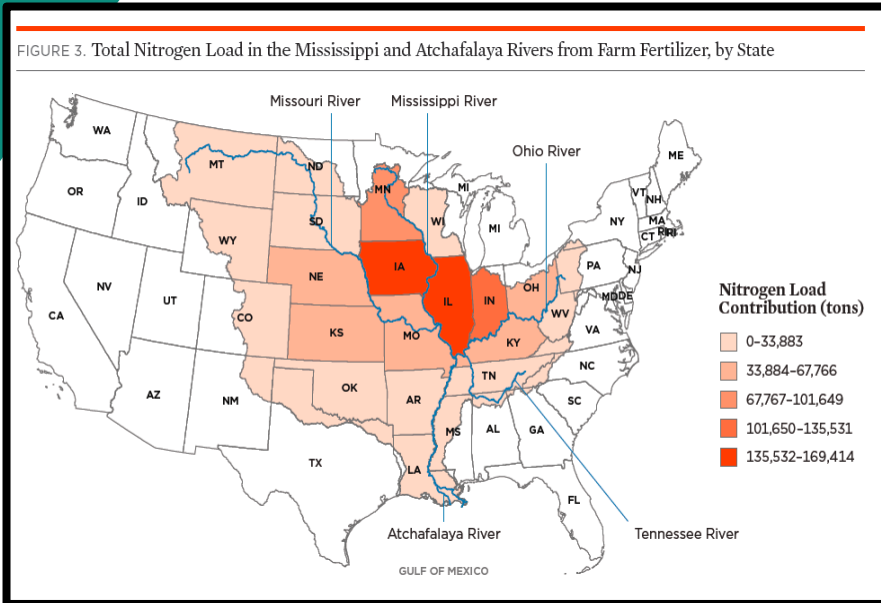
COVID-19

Reduced SARs-CoV-2 exposure; improved nutrition will increase resistance to infection

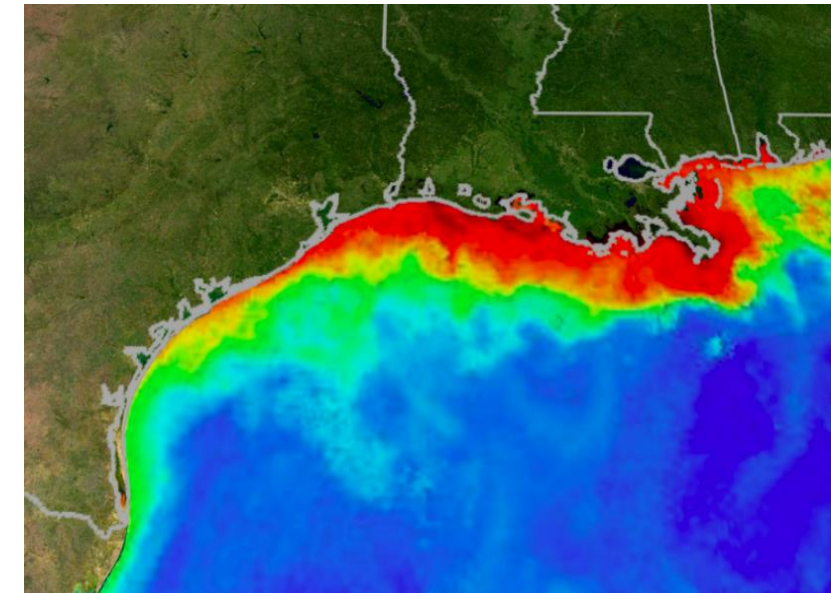
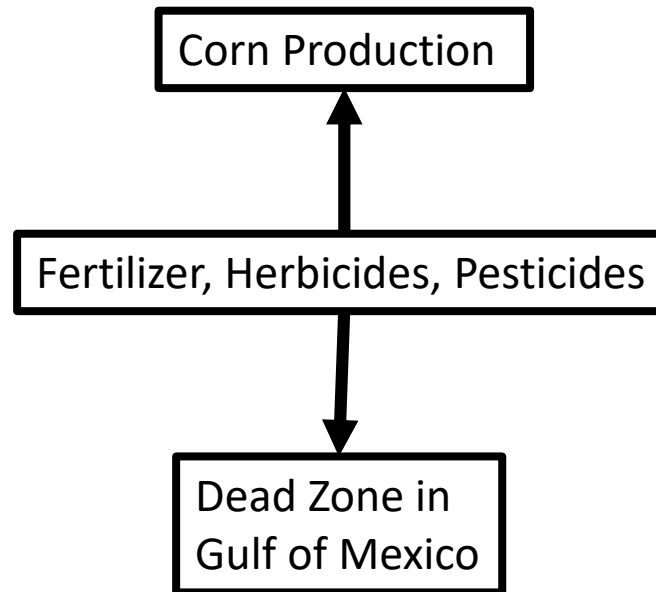


Stabilize the food supply chain: Address structural racism - improve worker conditions - housing, medical coverage, wages, PPE; Build and strengthen local/regional resilient and sustainable plant-based food systems; reduce reliance on ultra-processed food

Impact of Corn Production on the Dead Zone in the Gulf of Mexico

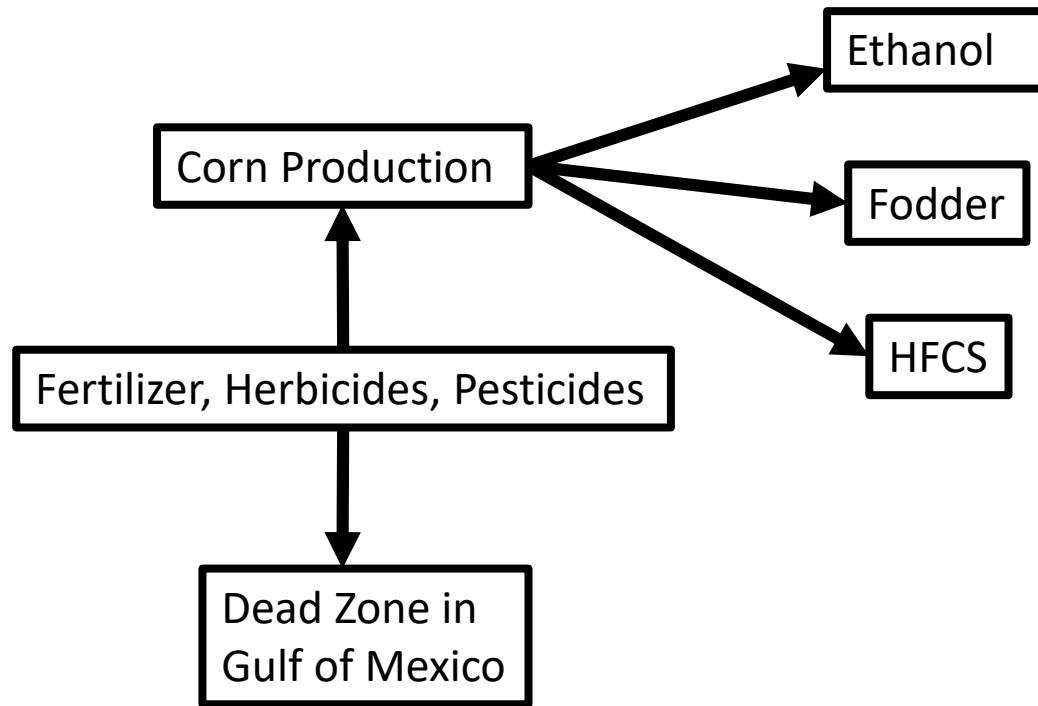


Mississippi River Watershed

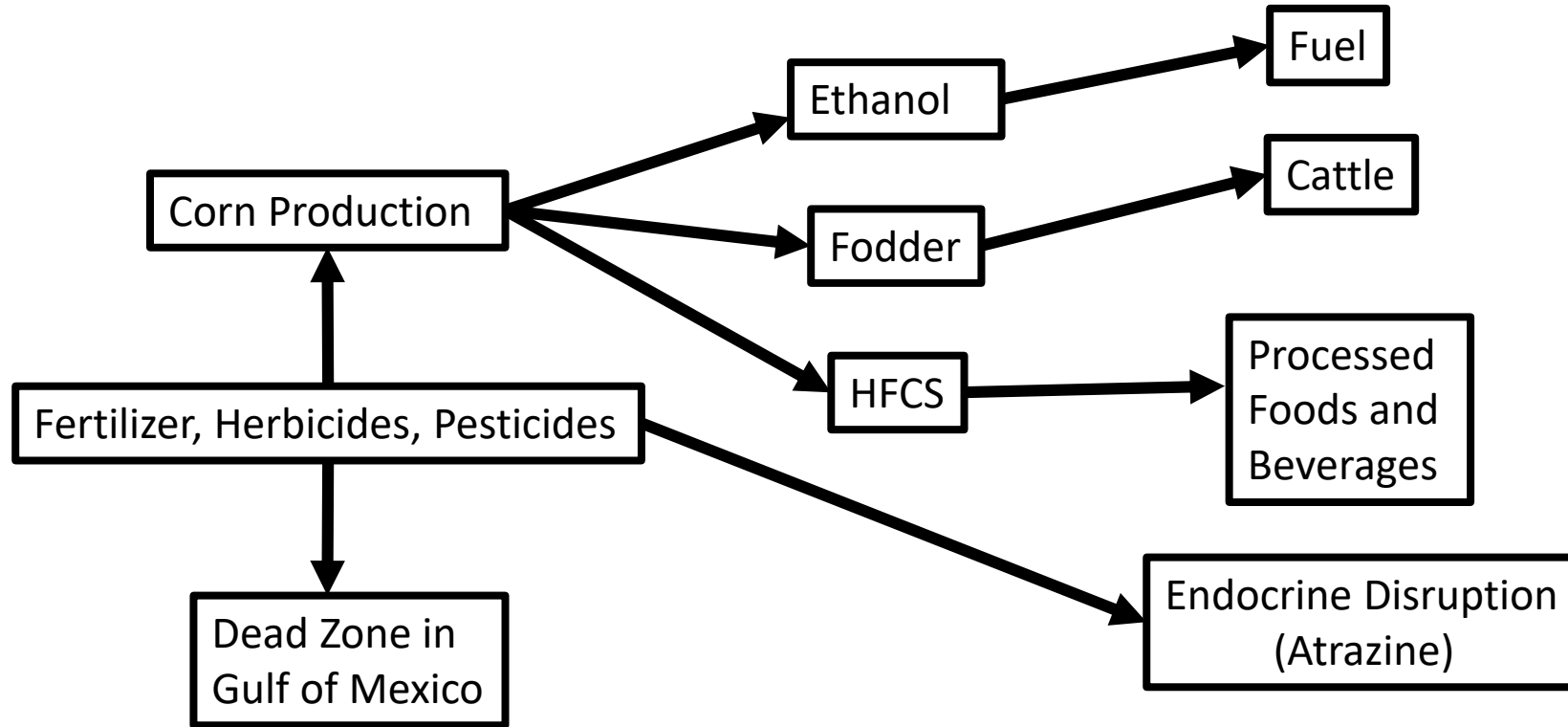


Gulf Of Mexico Dead Zone

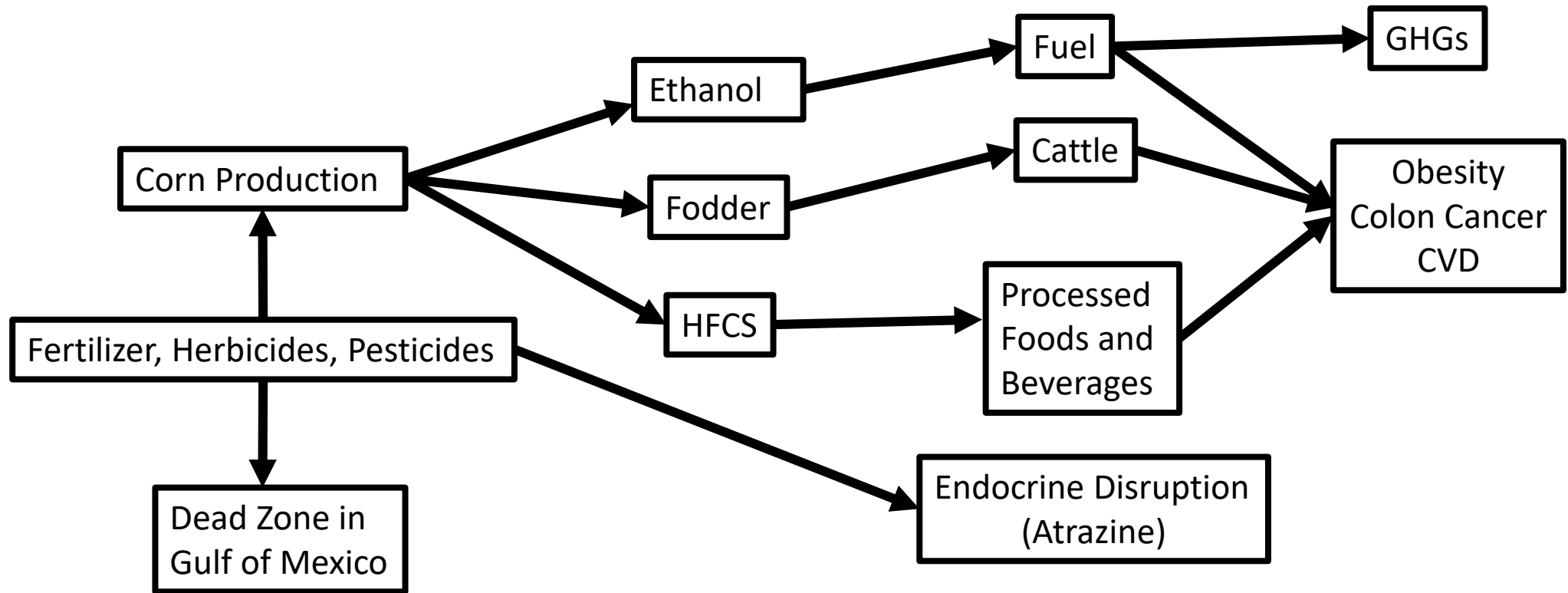
Environmental and Health Effects of Corn Production



Environmental and Health Effects of Corn Production



Environmental and Health Effects of Corn Production



Sustainable Diets

“Sustainable Diets are those diets with low environmental Impacts which contribute to food and nutrition security and to healthy life for present and future generations. Sustainable diets are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources.”

Burlingame D, Dernini S. Sustainable Diets and Biodiversity 2010. <http://www.fao.org/3/i3004e/i3004e.pdf>

The Issue Is Not What to Do But How To Do It

Build political will

Initial focus on what we can personally change

Change our institutions – small p policies

Develop common targets and local coalitions

Large P policies

- **Municipal policies**
- **Connect with state advocates**
- **Lobby federal representatives**

Actions for Cities and Municipalities

- Invest in infrastructure for public and physically active transport
- Build urban food systems for resilience, health, equity and environmental sustainability
- Join international networks of cities to share resources and innovative strategies
- Nurture community coalitions to foster grass roots change and advocate for supportive national policies



Actions for National Governments

- Reduce the influence of commercial vested interests in policy development and increase the roles for civil society
- Re-orient business models for people, the planet, and profits (reduce externalities)
- Provide clear information on the health and environmental effects of products to consumers
- Develop metrics to monitor progress and accountability systems





Thank You

Questions? Comments?

Contact me: bdietz@gwu.edu