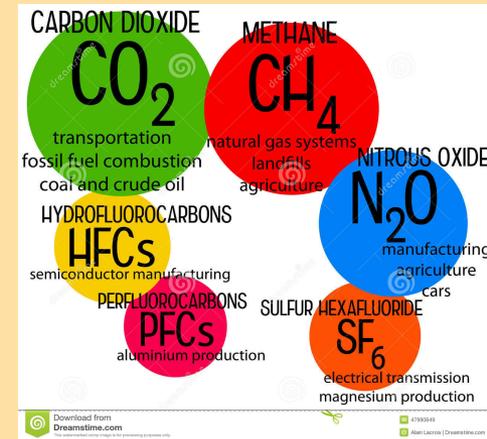
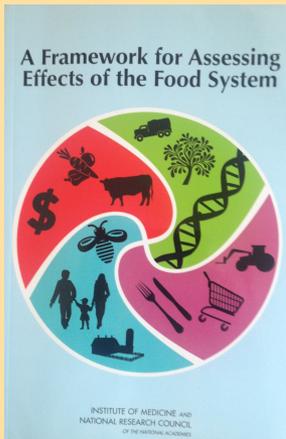




Oldways Common Ground

Environmental Issues

Malden Nesheim, Cornell University



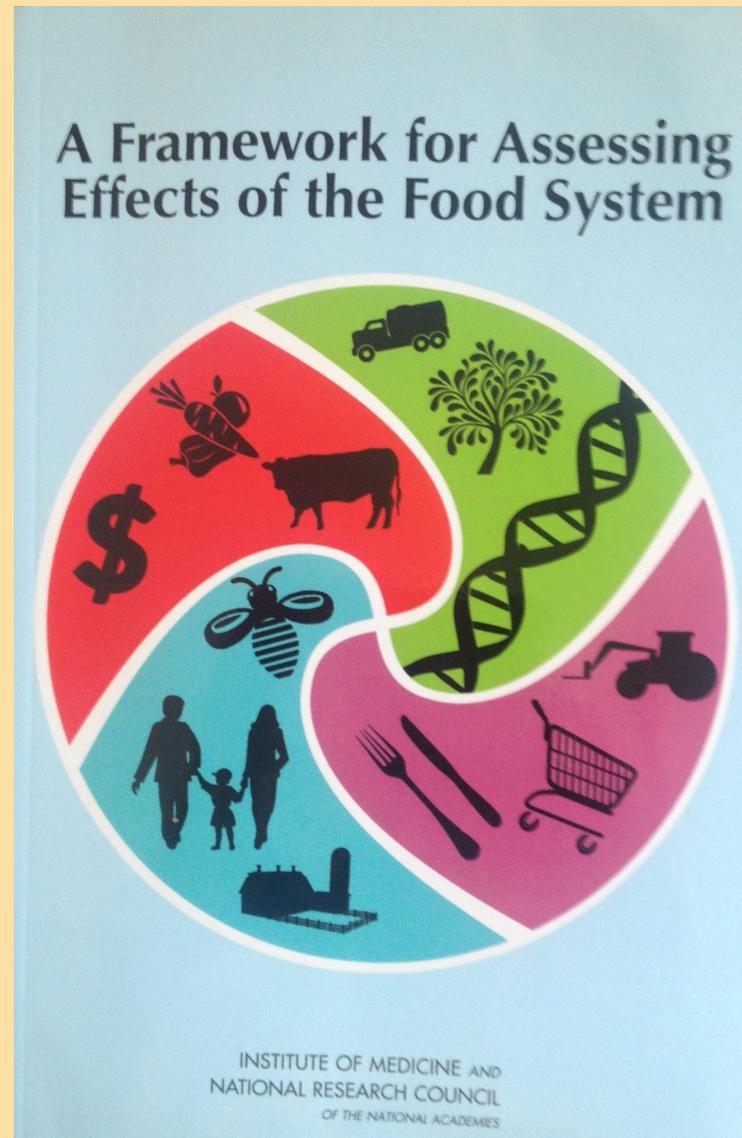


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IOM Committee report

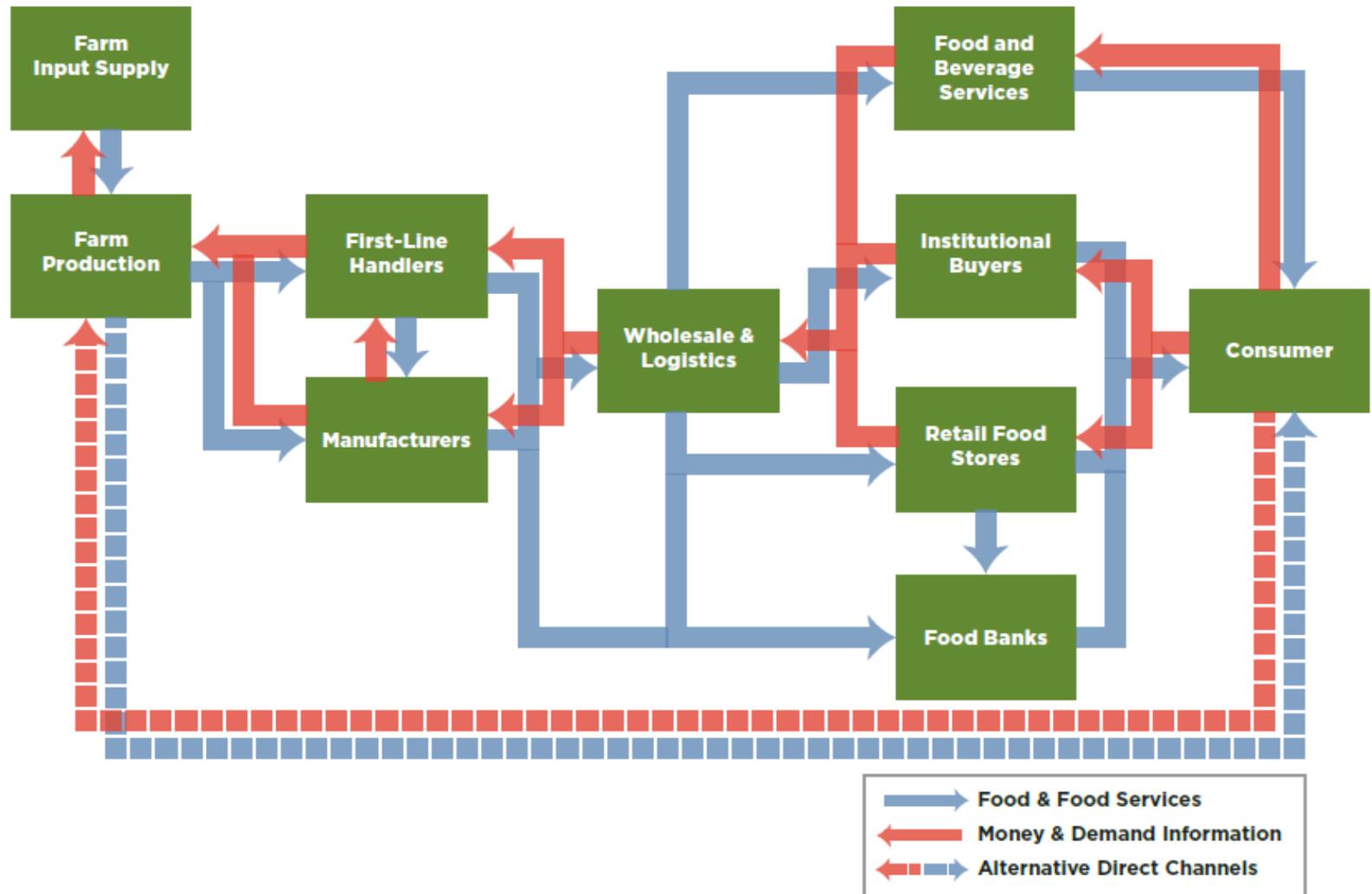
January 13, 2015

Health, Environmental,
Social and Economic Effects





The food system as a supply chain





Health outcomes related to food system

Obesity

Chronic disease

Hypertension

Coronary Vascular Disease

Type 2 Diabetes

Malnutrition-micronutrient deficiency

Foodborne Illness

Chemical pollutants





Environmental Effects

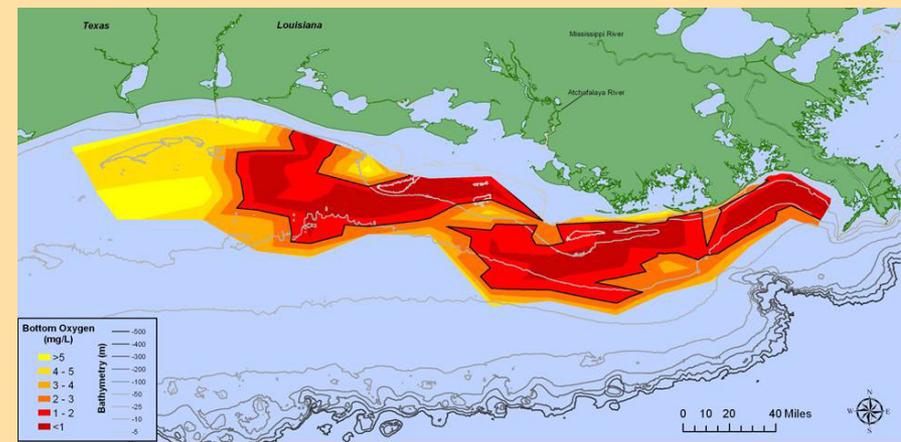
Soil and water use

Nitrogen pollution—ammonia, nitrates

Pesticide pollution

Ecological balance

Greenhouse gasses, climate change





Social and Economic Effects

Food insecurity

Health Care access to farm workers

Farm labor issues

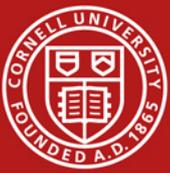
Immigration

safety

wages

Independent decision making

Rural Development



Farm Labor

2 million self employed operators and family members

1 million non family farm workers

60-80 percent of hired farm workers are employed on crop farms

Most are foreign born

More than half unauthorized to work in the US.





Policies intended to affect one part of food system have implications beyond the original intent

Biofuels -40% of US corn crop

Fertilizers- pollution of water supplies

Dietary recommendations

Fish Consumption

Vegetable consumption

Antibiotic Use- resistant organisms

Hen Housing Practices



Some issues with fish consumption

- **2010 Dietary Guidelines recommend 8 ounces per week**
- **69% of population are fish consumers**
- **Consumption of seafood per capita is a bit more than half the**
- **Recommendation**
- **Current levels of wild capture are at maximum levels for**
- **Sustainability for most species and many are overexploited**
- **Farmed seafood brings other environmental issues**



Fruit and vegetable consumption

Current Consumption is about half of current recommendation

Population consumption closer to guidelines has implications for:

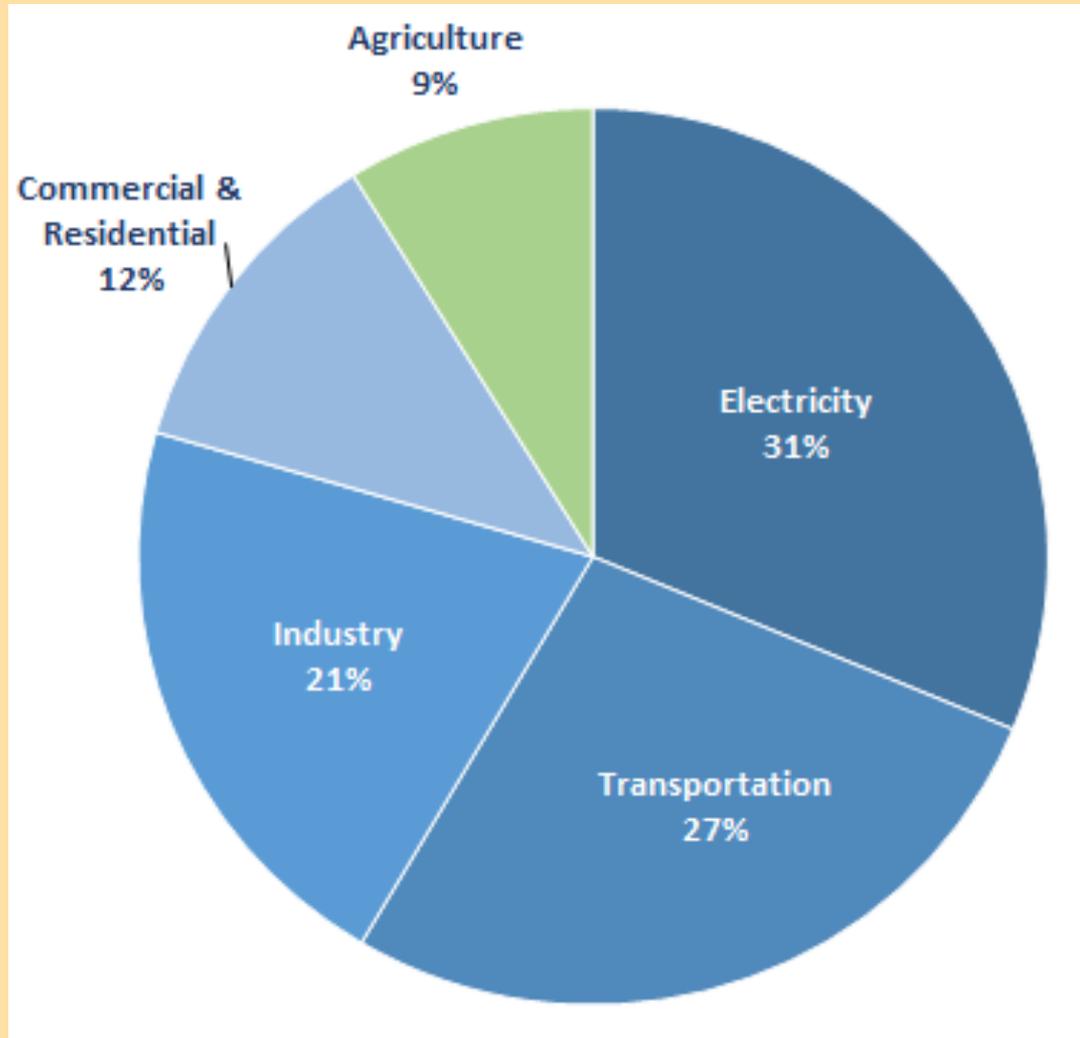
Water use (75% current production is on irrigated land)

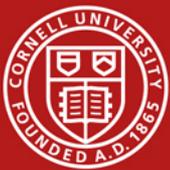
Labor Markets and immigration

Imports

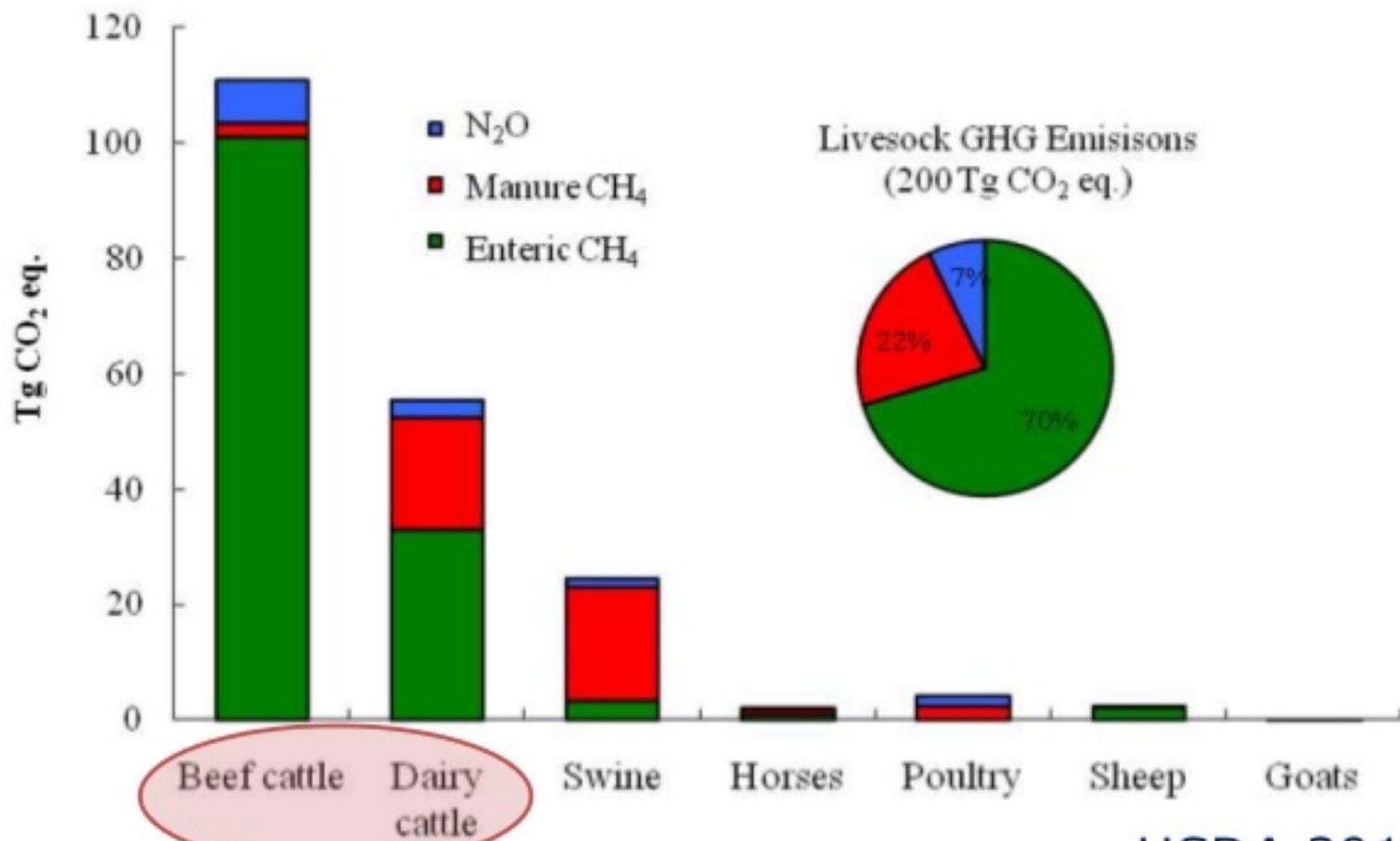


Sources of Greenhouse gas emissions in US in 2013 (EPA)





Animal Agriculture GHG Emissions





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TEEB-The Economics of Ecosystems and Biodiversity

TEEB for Agriculture and Food



**Project of the UN
Environmental Program
and European community**

**Concern about long term
sustainability of Agriculture
with increased population**

www.teebweb.org



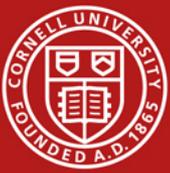
Concept of Natural Capital

“the stock of natural ecosystems on earth including air, land, soil, biodiversity and geological resources”

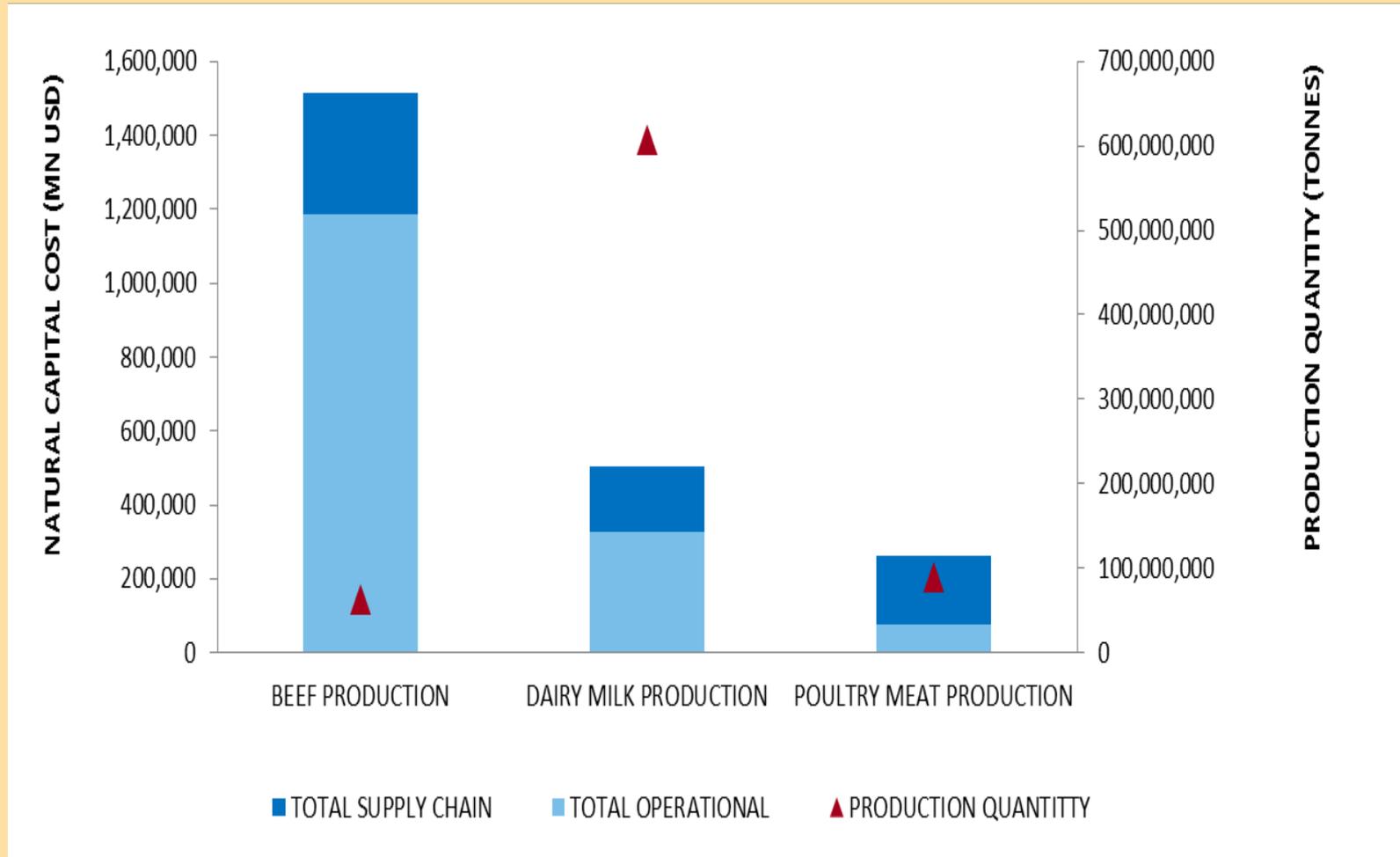
**greenhouse gas emissions, air pollutants,
water consumption, water pollutants, soil pollutants
and land use change**

**Livestock, Palm oil, Rice, Inland fisheries, Corn studies
Are underway**





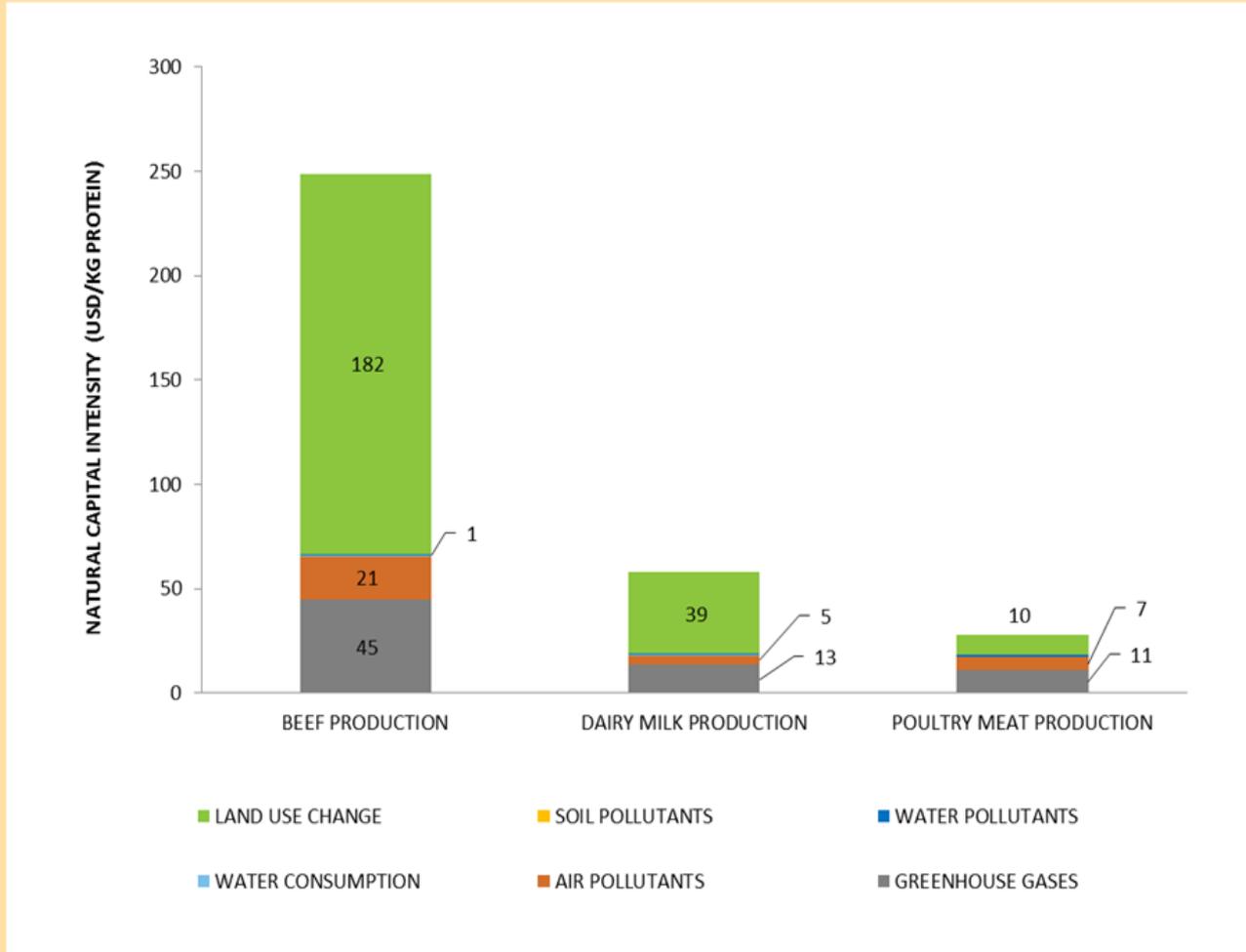
Total natural capital cost of beef, dairy and poultry production worldwide (in million US\$) and production quantities (in tonnes)



From: Valuation of livestock eco-agri-food systems: poultry, beef and dairy- Wageningen University and Research Center 2015



Average natural capital intensity of beef, poultry meat and dairy milk production (in US\$/ kg protein)





Yes it is legitimate to consider environmental issues in making dietary recommendations.

Are there other social and economic issues and tradeoffs that should also be considered?



2015 Dietary Guidelines committee report Comment on Sustainability

Consistent evidence indicates that, in general, a dietary pattern--

that is higher in plant-based foods, such as vegetables, fruits, whole grains, legumes, nuts, and seeds, and lower in animal-based foods is more health promoting and is associated with lesser environmental impact (GHG, energy, land, water use)



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Excerpts from letter to Secretary of Agriculture Vilsack and HHS Secretary Burwell from Senator John Thune March 12, 2015.

Letter signed by 29 additional Senators

“We are concerned about this committee’s suggestion to decrease consumption of red and processed meats.

Additionally, we have strong concerns with the Dietary Guidelines Advisory Committee going beyond its purview of nutrition and health research to include topics such as sustainability”