

Aligning agriculture and nutrition: Can understanding our differences help us meet common goals?

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Aligning agriculture and nutrition:

Can understanding our differences help us meet common goals?

To help frame the discussion:

- Context
- Differences
- Goals



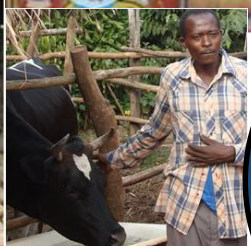
Food availability

Food composition

Development outcomes

Food supplementation and food assistance

Everything is connected



Agriculture and food systems

2010 Early Maturing Sorghum Adaptation Trial at (EMSAT)
NUMBER OF ENTRIES: 5
NUMBER OF REPLICATIONS: 4

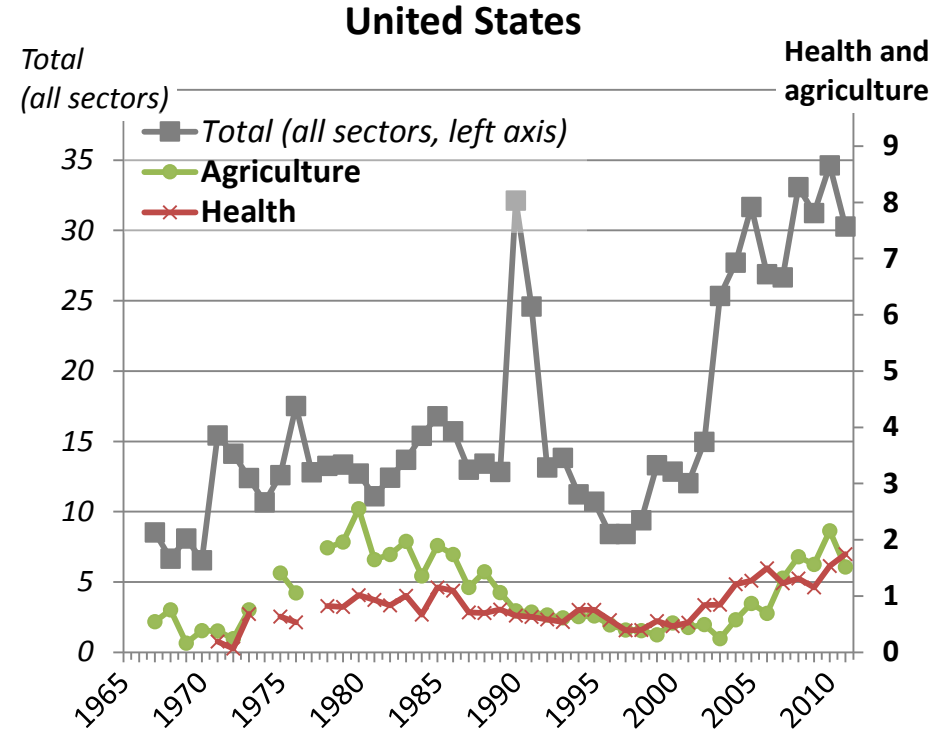
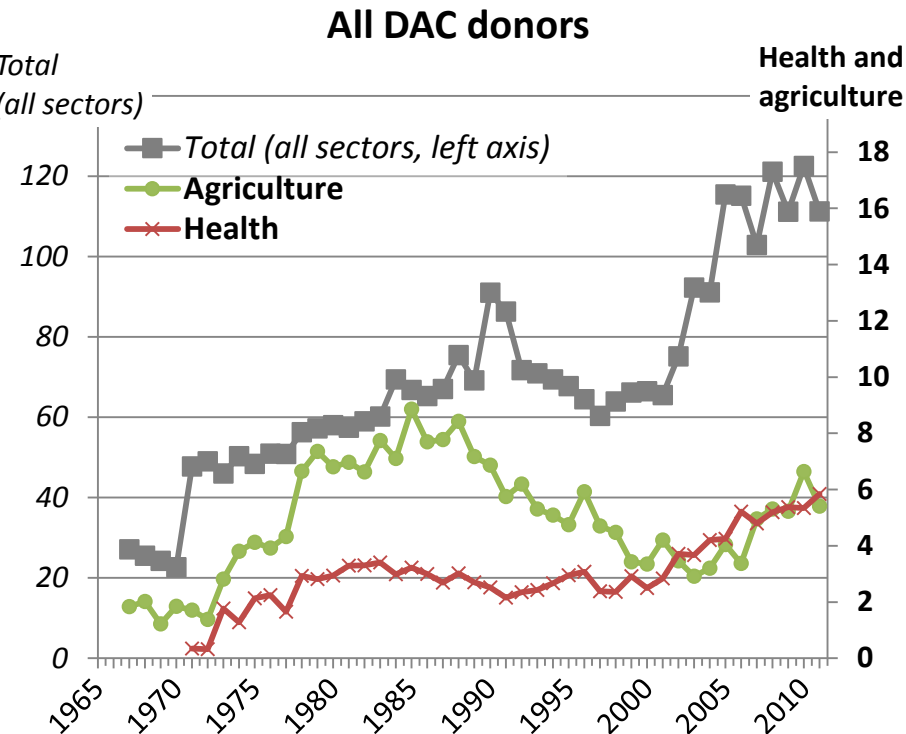
Technological change

Education and behavior change



Aid priorities have cycled

ODA commitments for health, agriculture and in total, 1967-2012



Note: Health includes nutrition. Agriculture includes forestry and fisheries.

Values are billions of constant US dollars at 2012 prices (both axes).

Source: Calculated from OECD (2014), Official Bilateral Commitments by Sector, downloaded 4 Oct. 2014 (<http://stats.oecd.org/qwids>).



The two sectors approach food from different angles

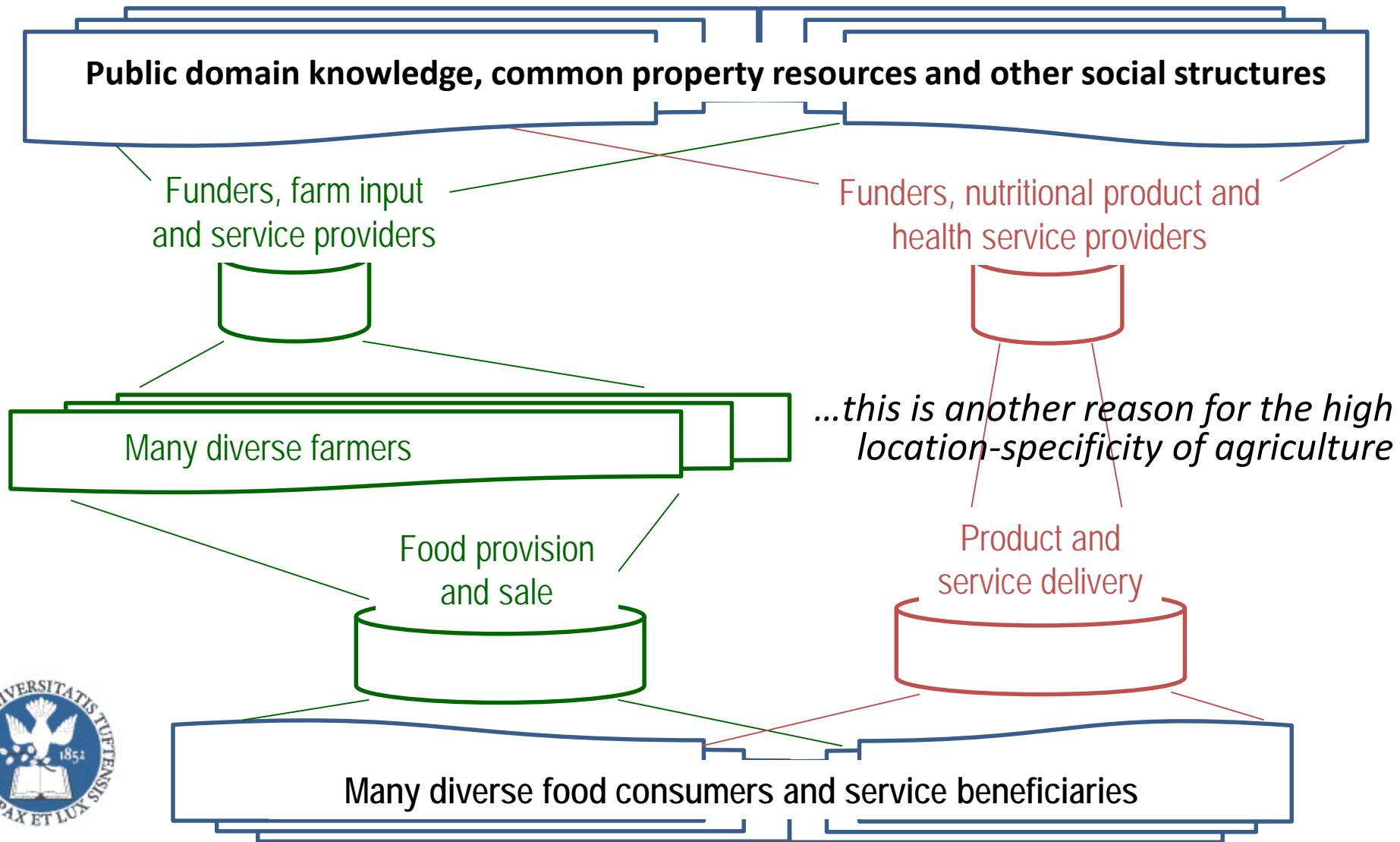
Some stylized differences between agriculture and nutrition

	Agriculture (food production)	Nutrition (food utilization)
Typical intermediate results and primary outcomes	Productivity, income and ending poverty	Diets, disease and ending malnutrition
Typical assessment and evaluation methods	RCTs on stations & farms, then economics of adoption and impact	RCTs in communities, then epidemiology of prevalence and status
Typical targeting of interventions	Public investment for specific locations	Service delivery to specific beneficiaries
<i>Main focus:</i>	<i>places</i>	<i>people</i>

...but don't forget the many similarities, and variation within the sectors!



The two sectors have different market structures



The two sectors have different theories of change

Google agriculture causal model

Web Images News Videos Shopping More Search tools

Google nutrition causal model

Web Images Shopping News Videos More Search tools



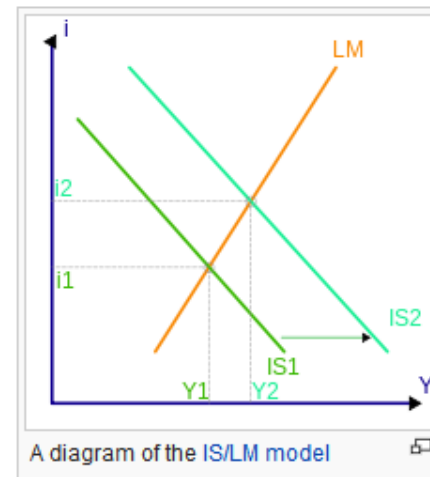
And economics brings a whole other perspective

Economic model

From Wikipedia, the free encyclopedia

This article is about theoretical modelling. For the overall economic structure of a society, see [Economic system](#).

In **economics**, a **model** is a **theoretical** construct representing economic **processes** by a set of **variables** and a set of **logical** and/or quantitative relationships between them. The economic **model** is a simplified framework designed to illustrate complex processes, often but not always using **mathematical techniques**. Frequently, economic models posit structural parameters. Structural parameters are underlying **parameters** in a model or class of models.^[1] A model may have various parameters and those parameters may change to create various properties. Methodological uses of models include investigation, theorizing, and fitting theories to the world.^[2]



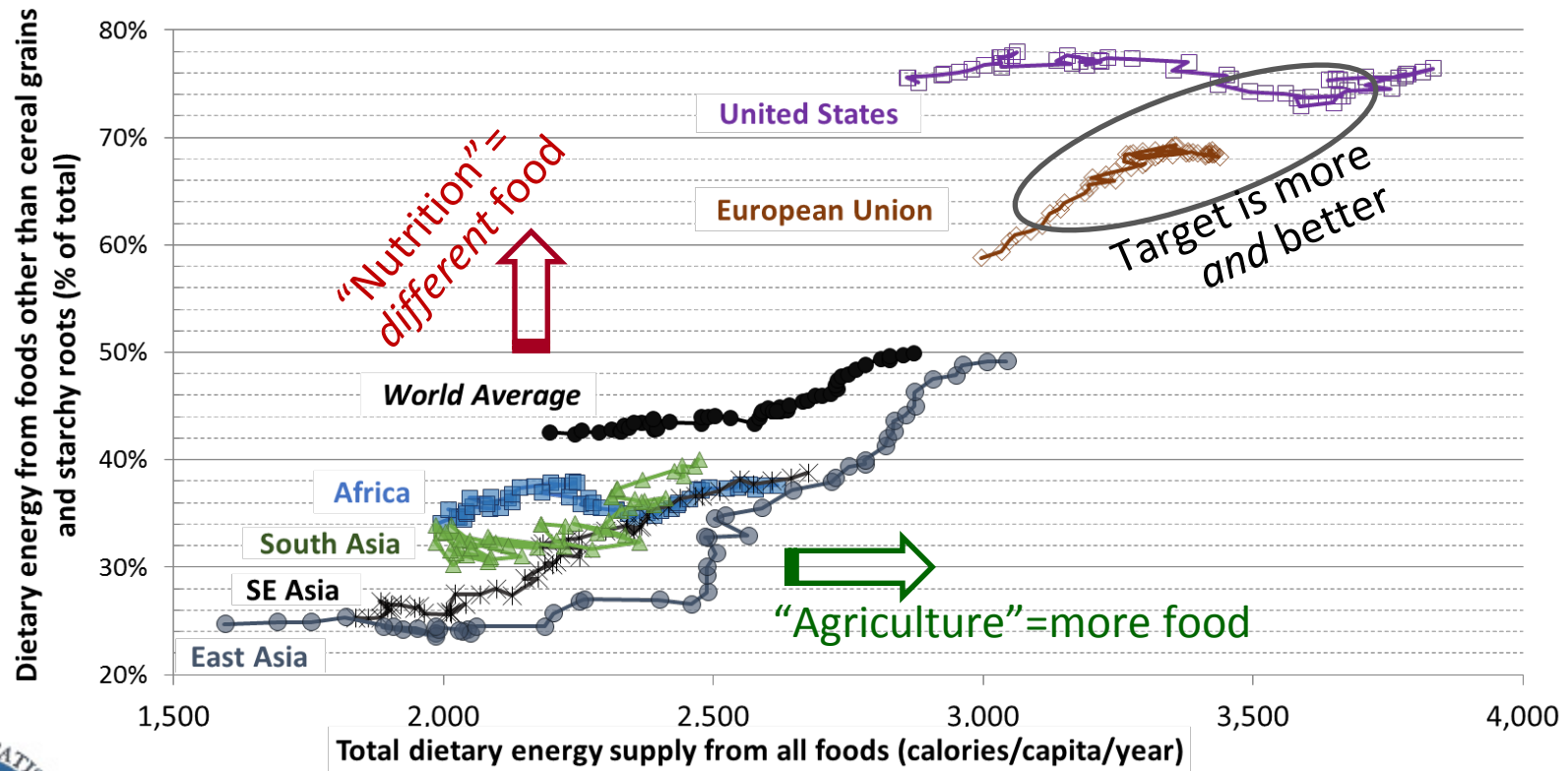
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- 1 Overview
- 2 Types of models
- 3 Pitfalls
 - 3.1 Restrictive, unrealistic assumptions
 - 3.2 Omitted details



The two sectors have inter-related goals

Percent of energy from non-staple foods and total dietary energy by region, 1961-2011
(FAO Food Balance Sheet estimates)



The two sectors face similar scientific challenges

- Limited validity, no general theory
 - many effect modifiers, too few randomized trials
 - many behavioral responses, almost no *controlled* trials
- Limited independence, strong interest groups
 - farmers, agribusiness, government agencies and NGOs
 - nutritionists, food businesses, govt agencies and NGOs
- Economics can bring a useful perspective
 - No grand theory; a few first principles, lots of little models
 - Little sponsored research; fund research by teaching?



Agriculture ♥ Nutrition?

A complicated relationship, but three big changes ahead could help the marriage work:

–Tailoring research to time- and location-specific questions

- Heterogeneity in effects by season, year, age etc.
- Taking account of effect modifiers, such as separability due to local markets

–Diversifying agriculture, to meet dietary needs

- Beyond starchy staples to more diverse vegetal and animal sourced foods
- Beyond value chains to more diverse local vendors, marketplaces and retailers

–Diversifying nutrition, to use agricultural potential

- Beyond service delivery to markets for nutritious and convenient foods
- Beyond single nutrients to foods, including packaged foods

