



FEED^{THE}**FUTURE**

The U.S. Government's Global Hunger and Food Security Initiative

From Agriculture to Nutrition: Pathways and Principles

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with Jody Harris

Agriculture-Nutrition Global Learning and Evidence Exchange (AgN-GLEE)
Washington, DC – June, 2013



Photos: Anna Herforth

Overview

- Nutrition 101
 - Definition of terms
 - Causes of malnutrition- where agriculture fits
- Linking agriculture and nutrition
 - Conceptual pathways between agriculture and nutrition
 - Evidence on agriculture's impact on nutrition
 - Principles for achieving nutrition impact through agriculture
 - Related to Feed the Future programs, and informed by the previous AgN-GLEEs

MALNUTRITION

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graph TD; A[MALNUTRITION] --> B[UNDERNUTRITION]; A --> C[OVERNUTRITION]; B --> D[STUNTING]; B --> E[UNDERWEIGHT]; B --> F[WASTING]; C --> G[MICRONUTRIENT MALNUTRITION]; C --> H[OVERWEIGHT OBESITY];
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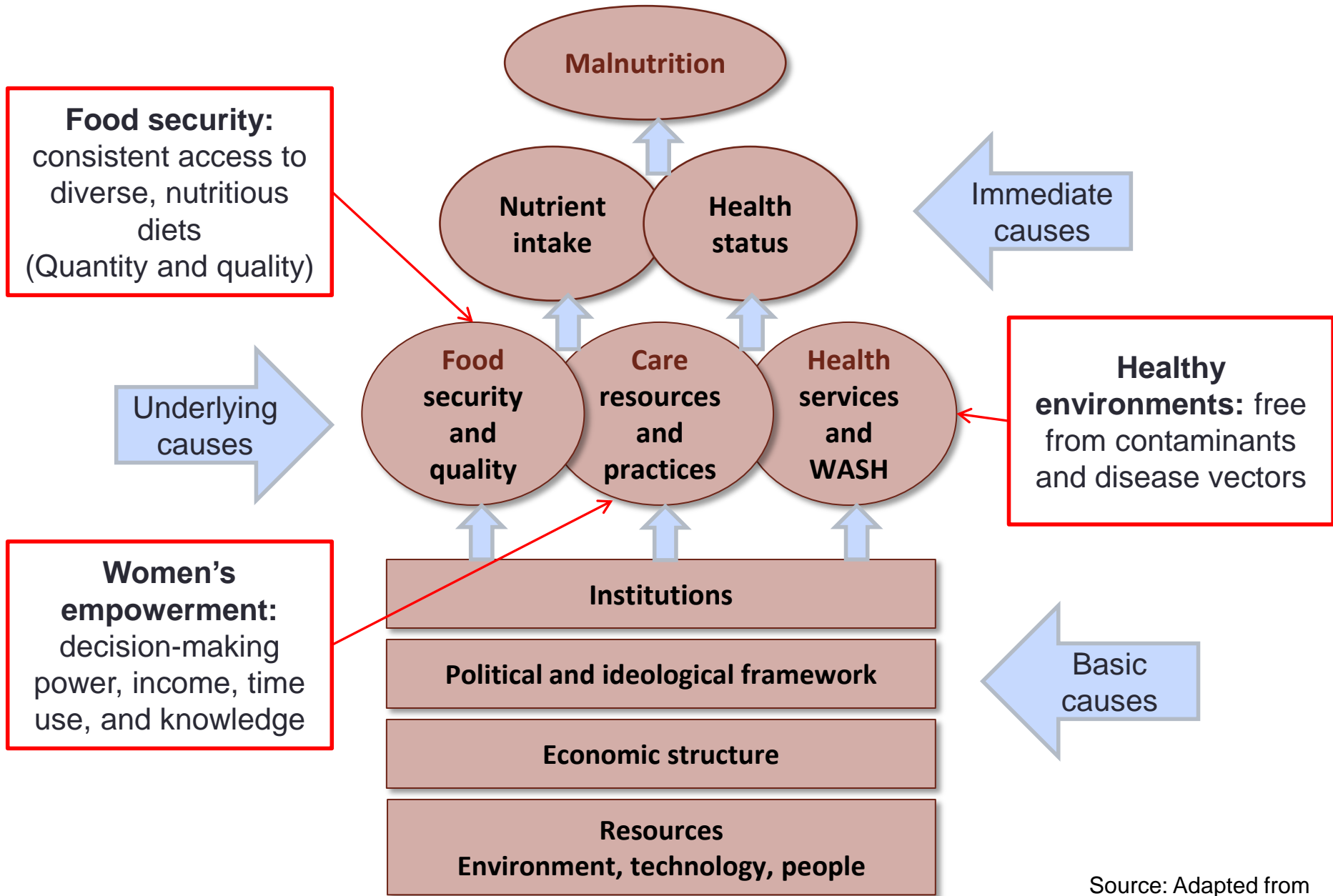
UNDERNUTRITION

OVERNUTRITION

**STUNTING
UNDERWEIGHT
WASTING**

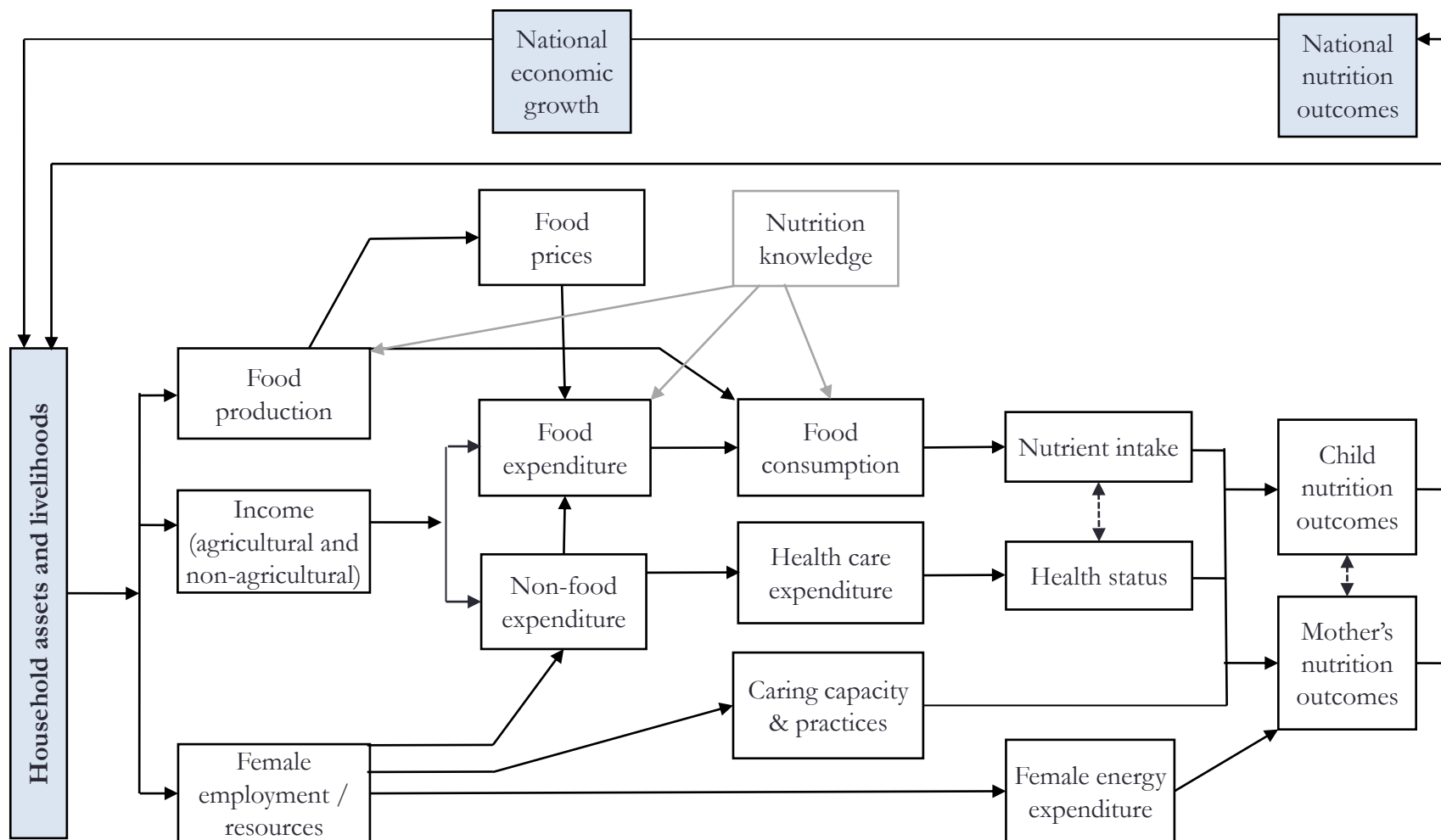
**MICRONUTRIENT
MALNUTRITION**

**OVERWEIGHT
OBESITY**



Source: Adapted from UNICEF 1990

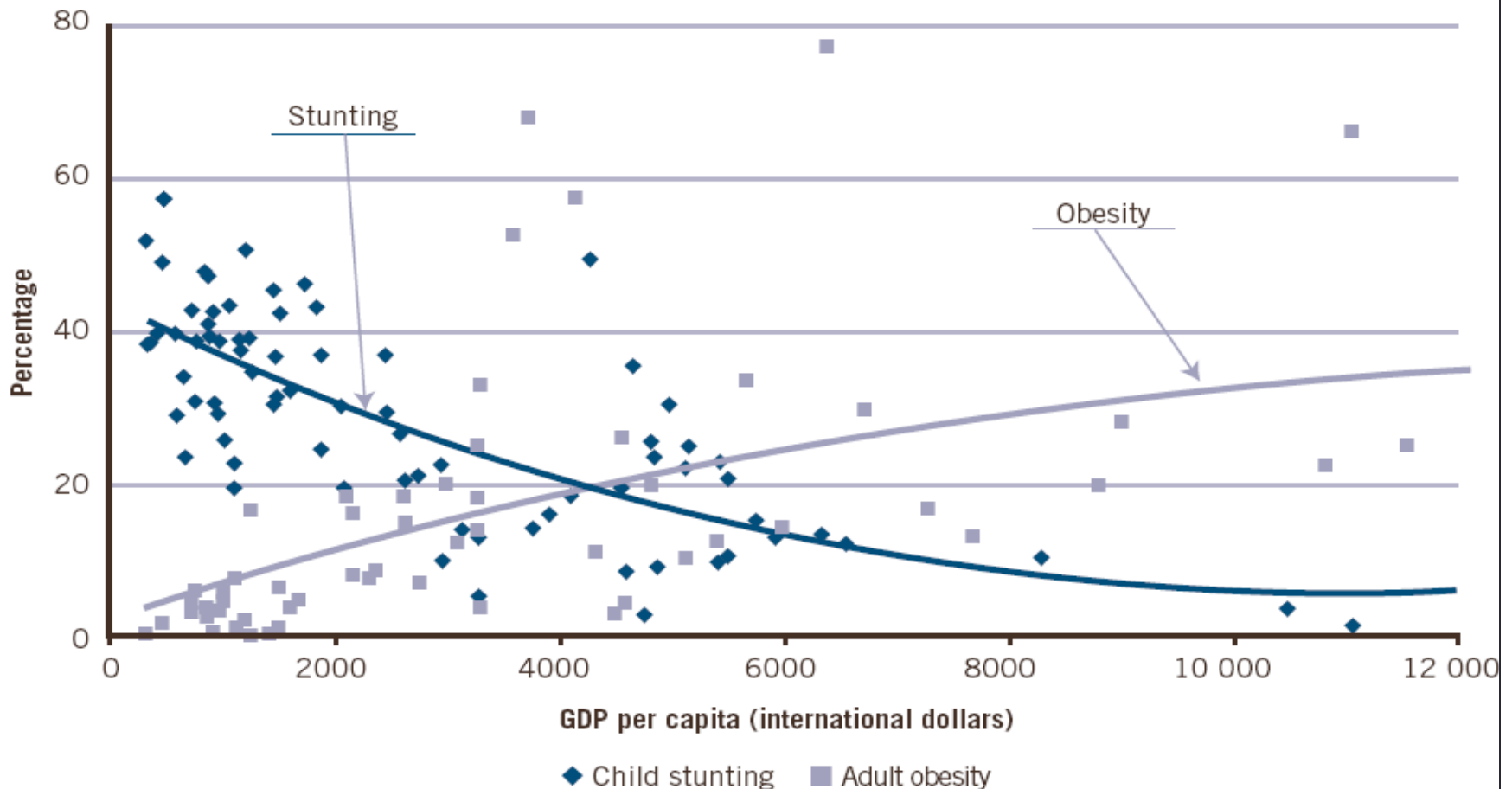
Pathways from agriculture to nutrition

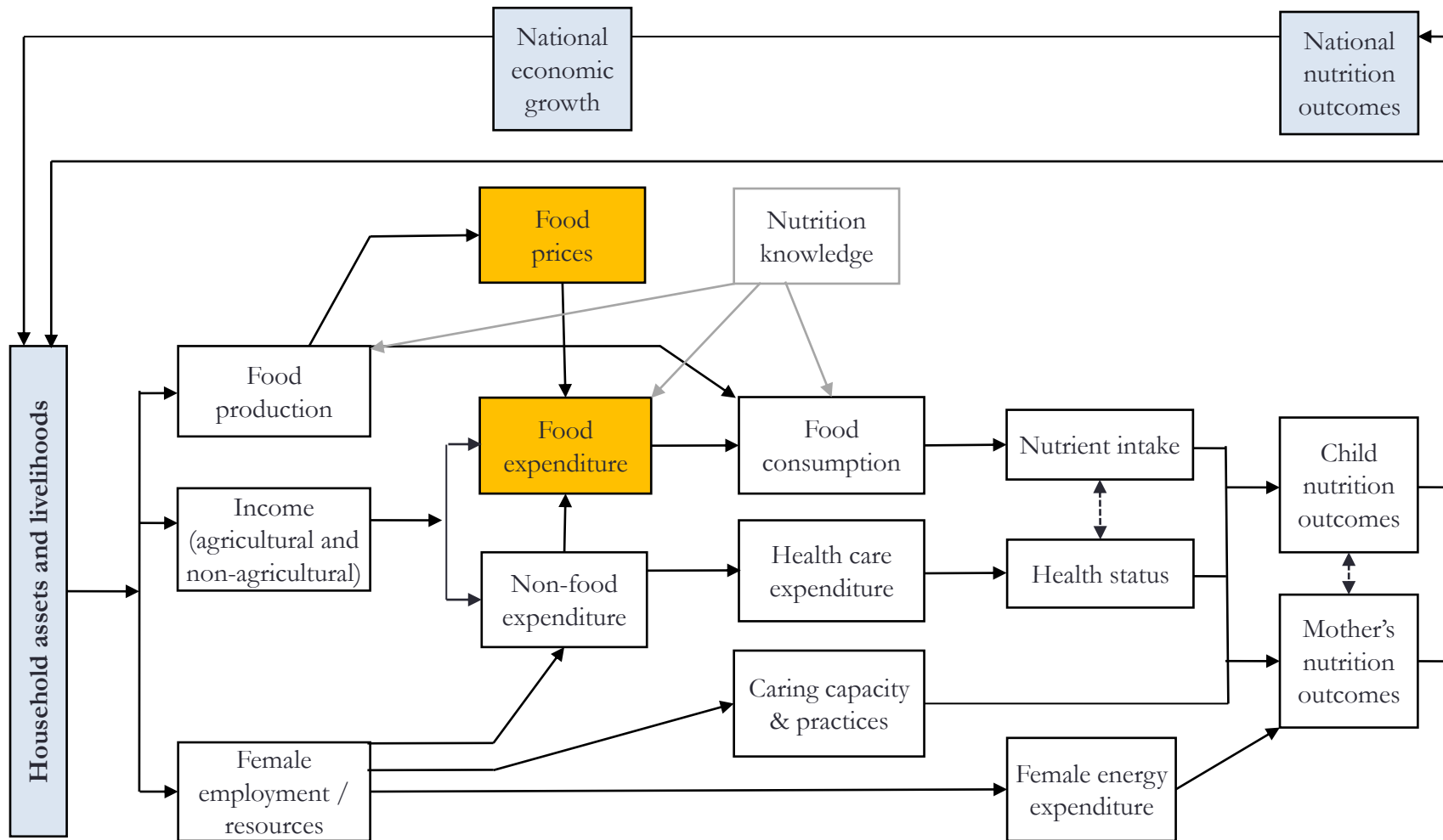


Adapted from: Stuart Gillespie, Jody Harris, and Suneetha Kadiyala, 2012
The Agriculture-Nutrition Disconnect in India, What Do We Know? IFPRI Discussion Paper 01187

As GDP rises, nutrition profiles shift

Undernutrition and obesity by the level of GDP per capita



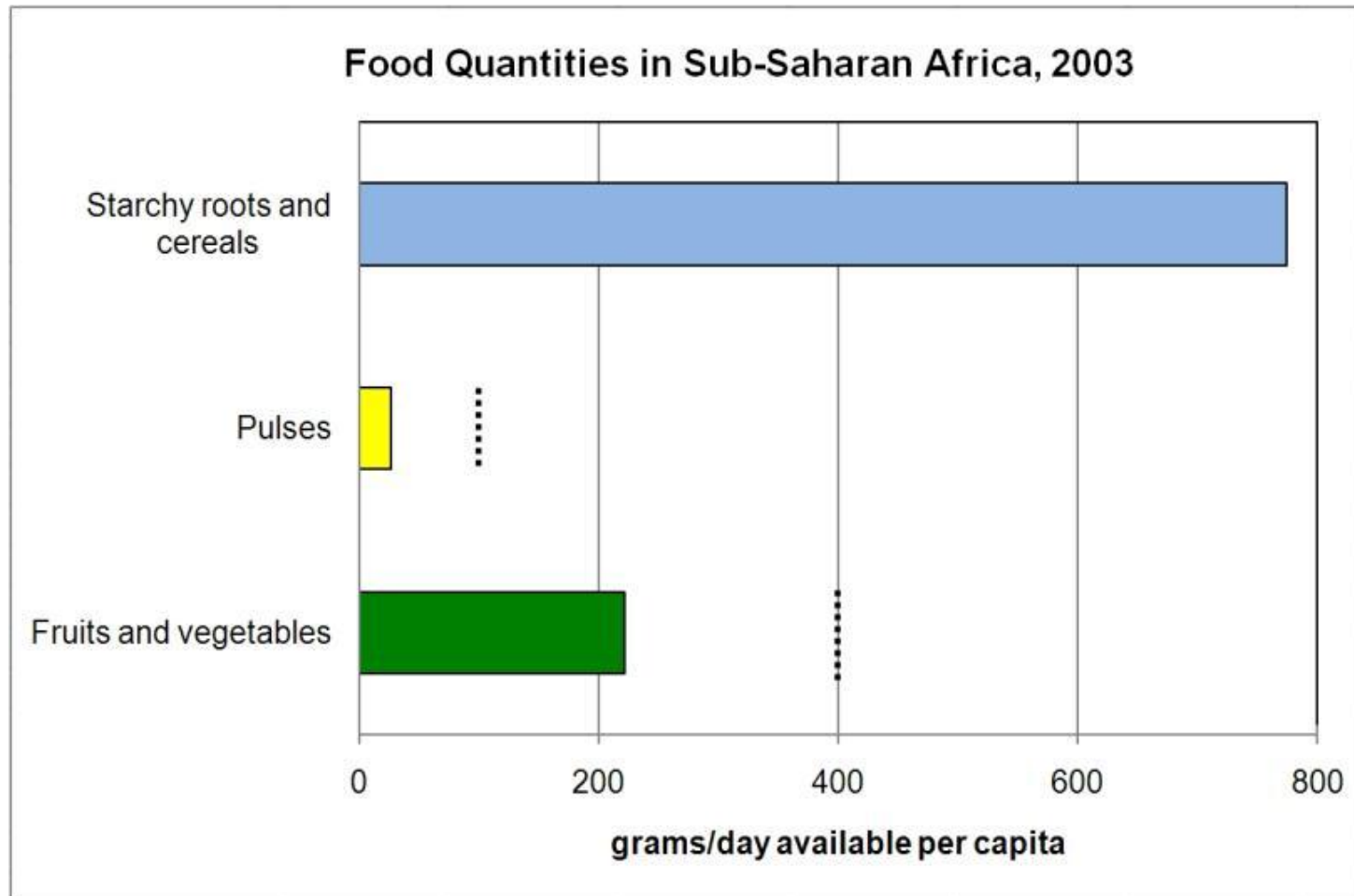


Food prices → food purchase

Calorie production and undernutrition

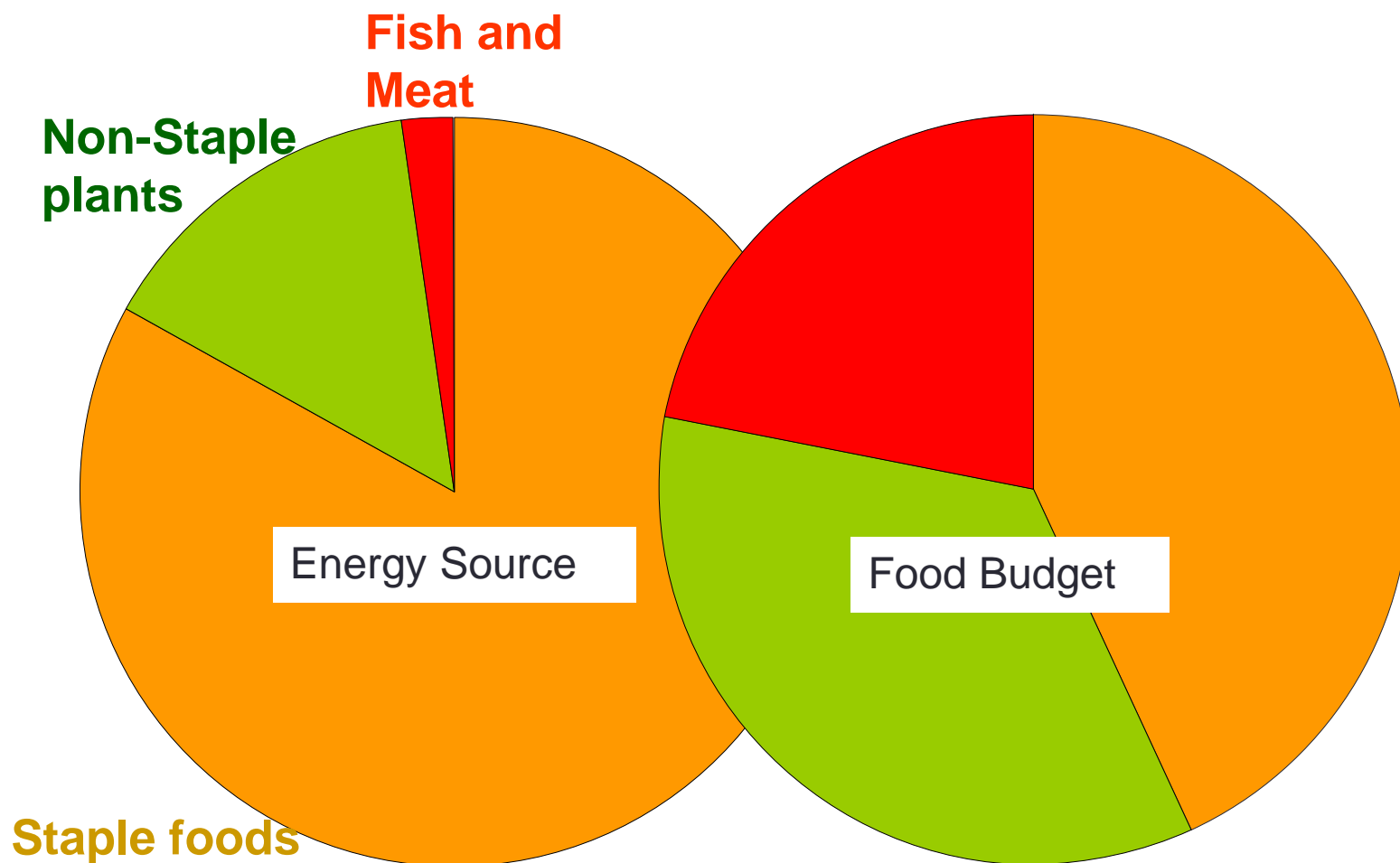
- Positive relationship only at low levels of calories
 - Also, high variance (not deterministic)
- MDG 1: Halve poverty and hunger by 2015
 - “Hunger” goal includes 2 indicators:
 - % hungry
 - % underweight
- Of the 21 countries that have already met the goal of halving the proportion of the population below the minimum level of dietary energy consumption, only six are on track to meet the underweight goal.

Calorie production focuses on starchy roots and cereals – despite larger dietary gaps



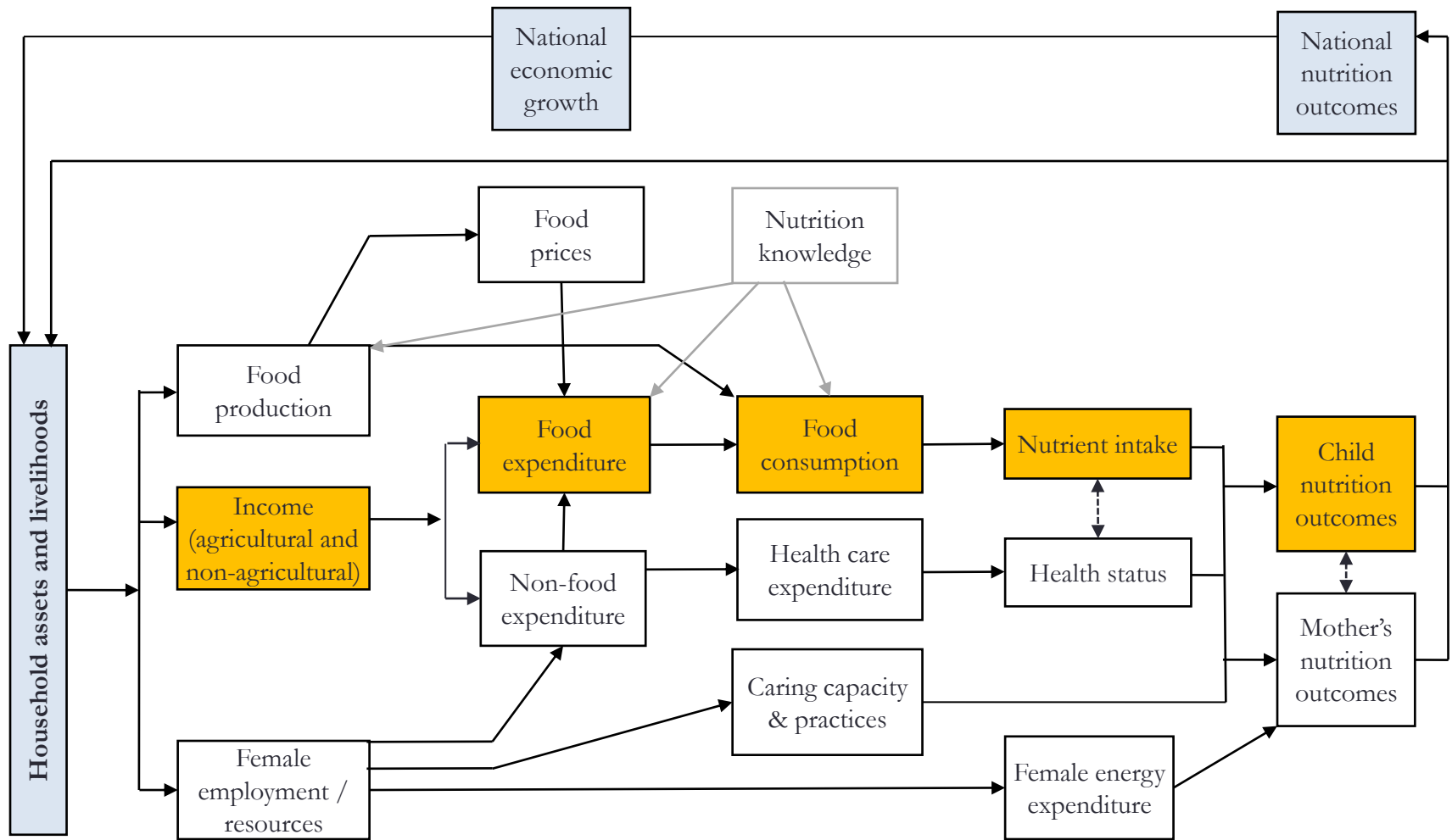
Source: Herforth 2010, based on FAO data

Share of Energy Source & Food Budget in Rural Bangladesh

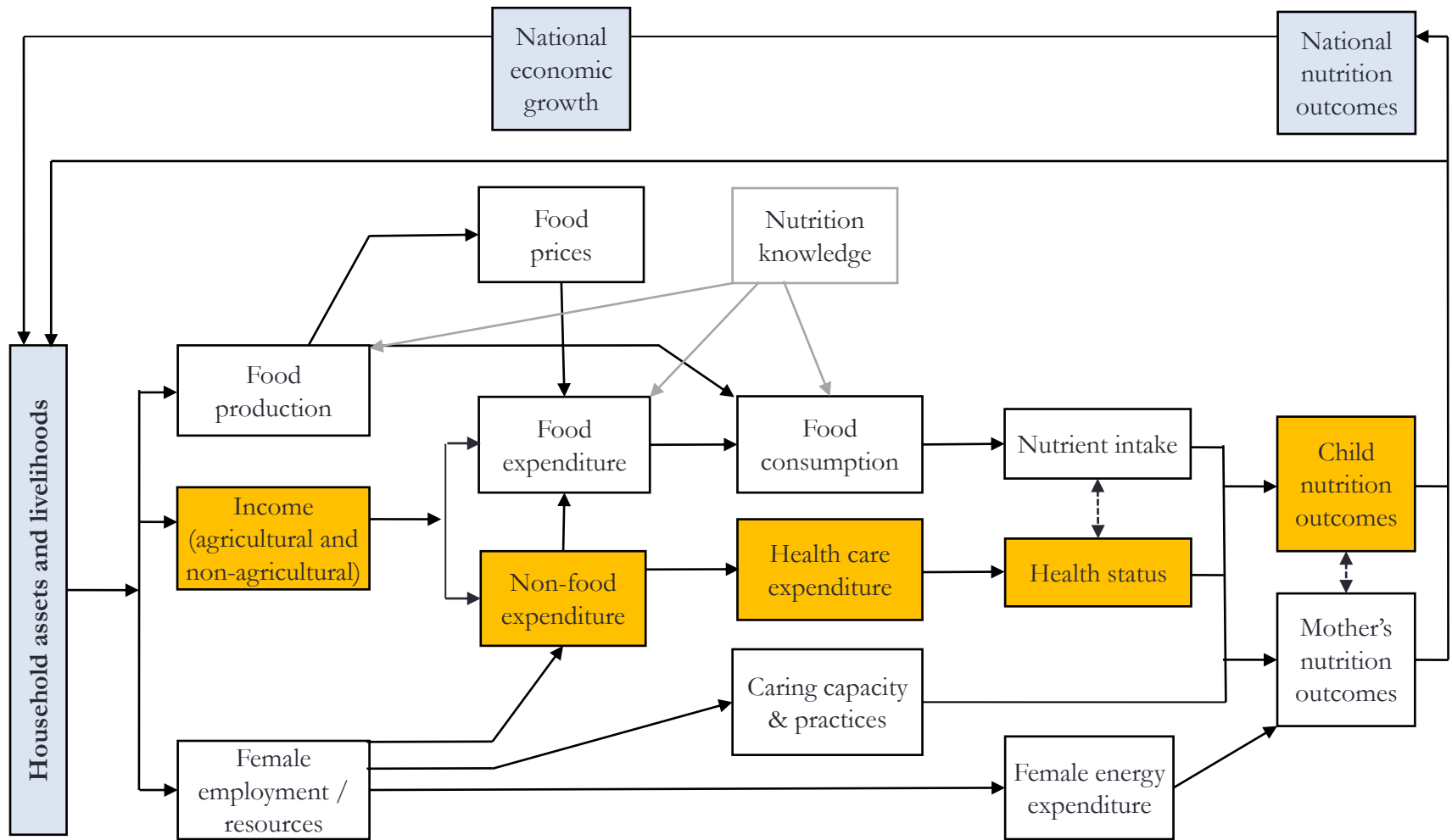


Food production and undernutrition

- Calorie production alone
 - Not sufficient to eliminate *food insecurity*
 - Not sufficient to eliminate *undernutrition*
 - Certainly will not reduce *overweight*
- *Food* means all diverse foods
 - Not equal to calories
- Reducing prices of nutrient dense foods has the potential for greater nutrition impact.



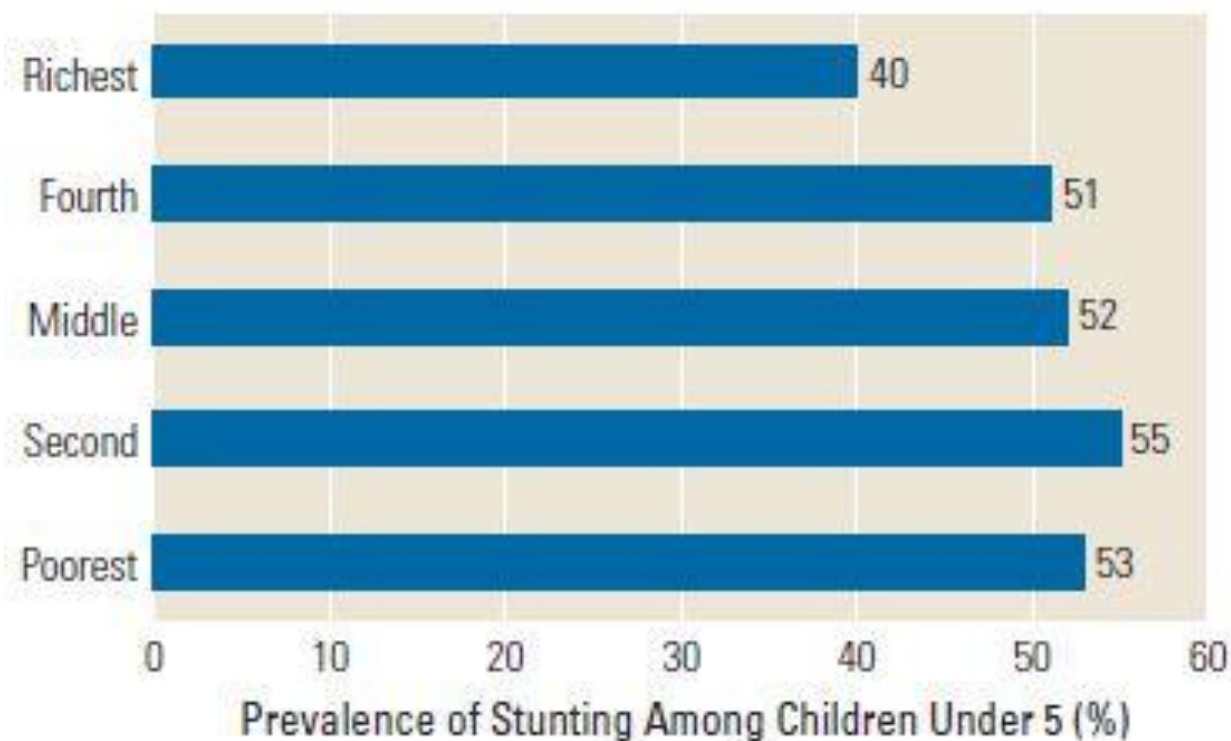
Income → food purchase



Income → healthcare purchase

Household income and nutrition

Prevalence of child stunting across wealth quintiles in Ethiopia



Source: DHS 2005 (figures based on the 2006 WHO Child Growth Standards).

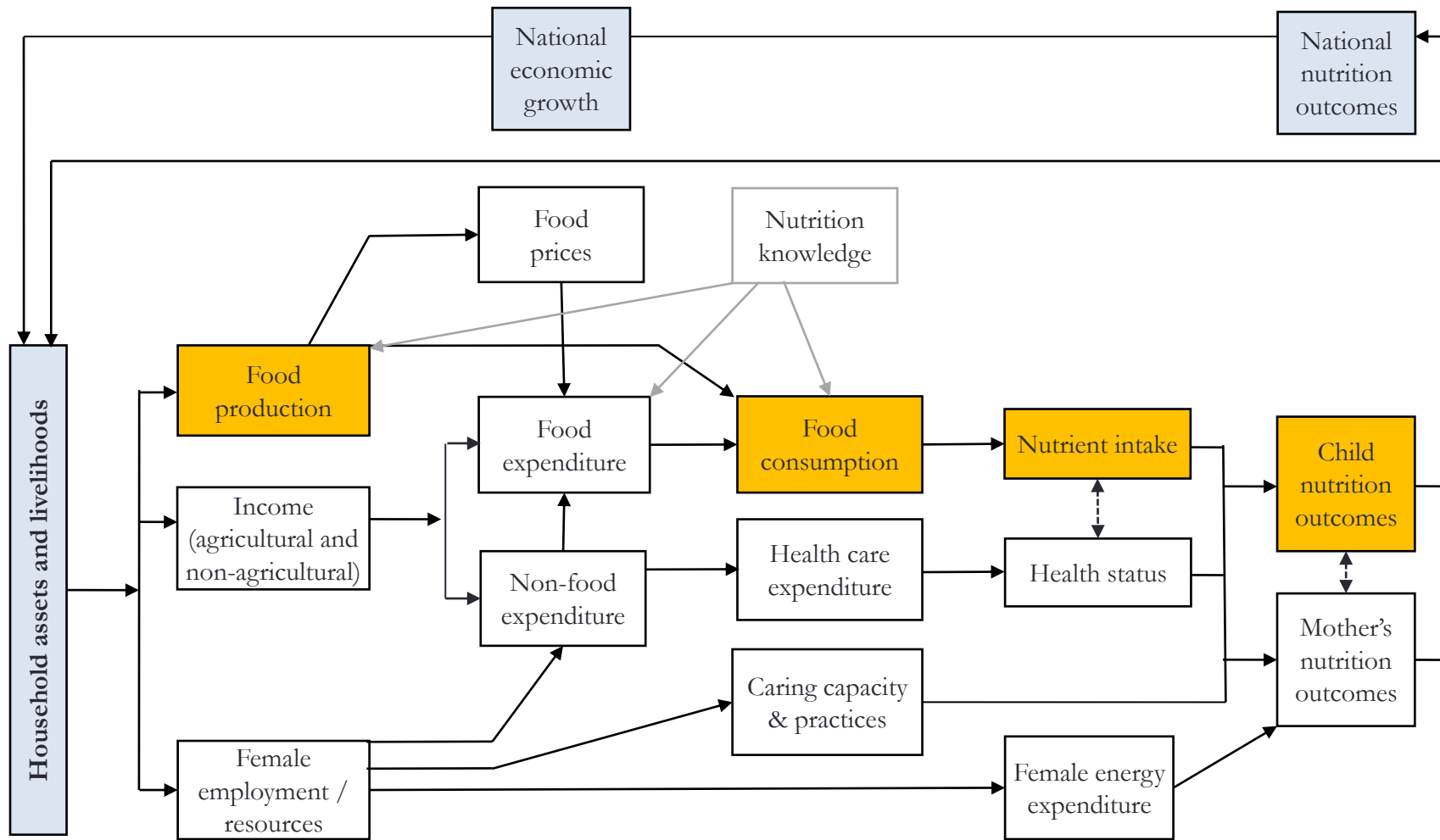
Source: World Bank Nutrition Country Profiles, 2010

Evidence from previous agricultural efforts to increase income

“Overall, cash-cropping schemes [whether staple crops or other] did not have a significant impact – negative or positive – on child nutritional status.”

- Household incomes generally improved.
- Consumption effects depended on base household income, how much was controlled by women, and changes in relative prices.

Source: World Bank, 2007



Own production → food consumption

Food production affects consumption

“With very few exceptions, home garden programs increased the consumption of fruit and vegetables; aquaculture and small fisheries interventions increased the consumption of fish; and dairy development projects increased the consumption of milk.”

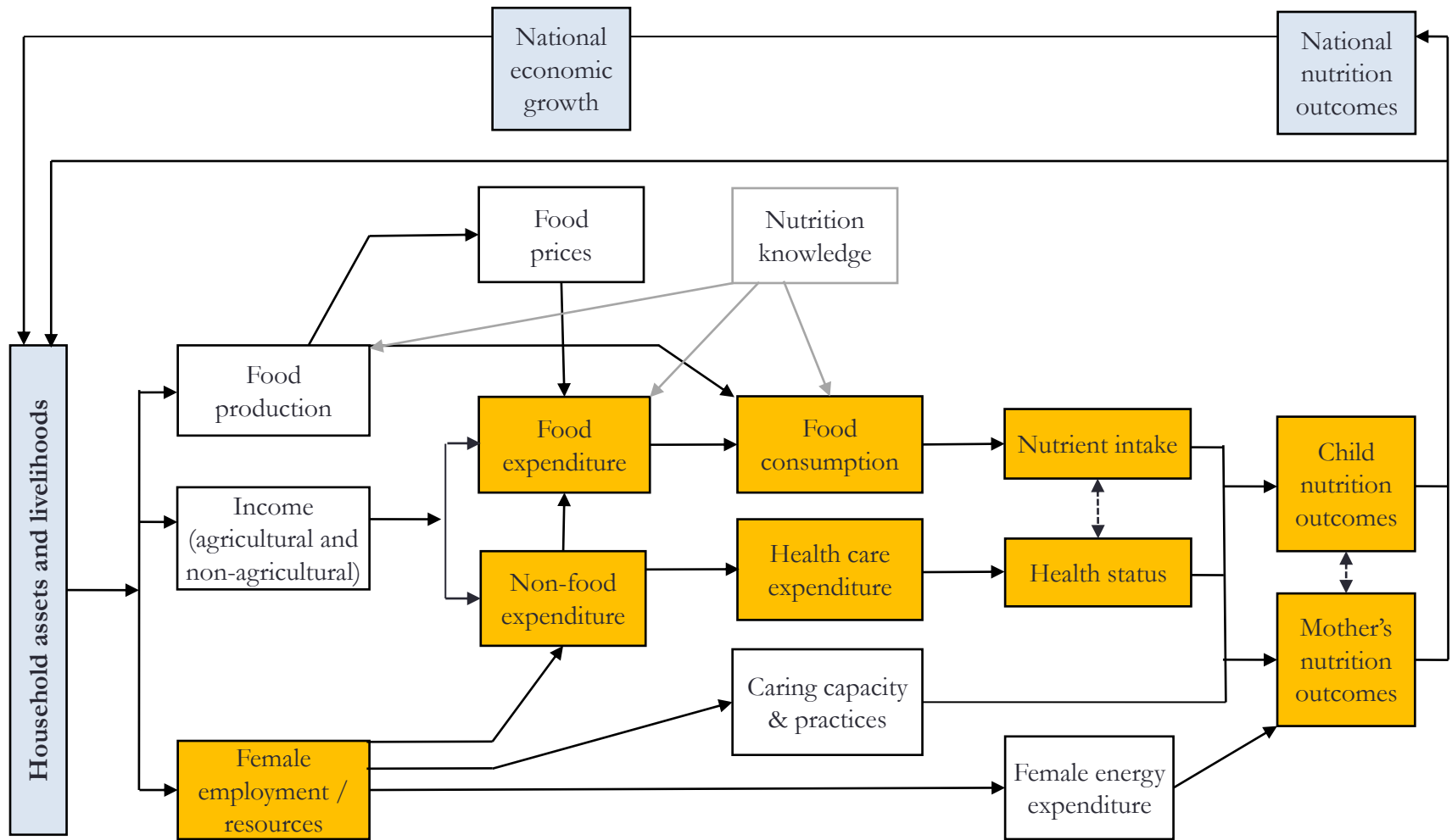
Source: Masset et al, 2012

- Available data from home gardens programs also show positive impact on vitamin A status.

Food production affects consumption

- “When measured, positive effects [of homestead food production] are shown for several underlying determinants of nutrition, including household production and consumption, intake of target foods and micronutrients, and overall dietary diversity.”
- “Nutritional effect is more likely when agriculture interventions target women and include women’s empowerment activities...”

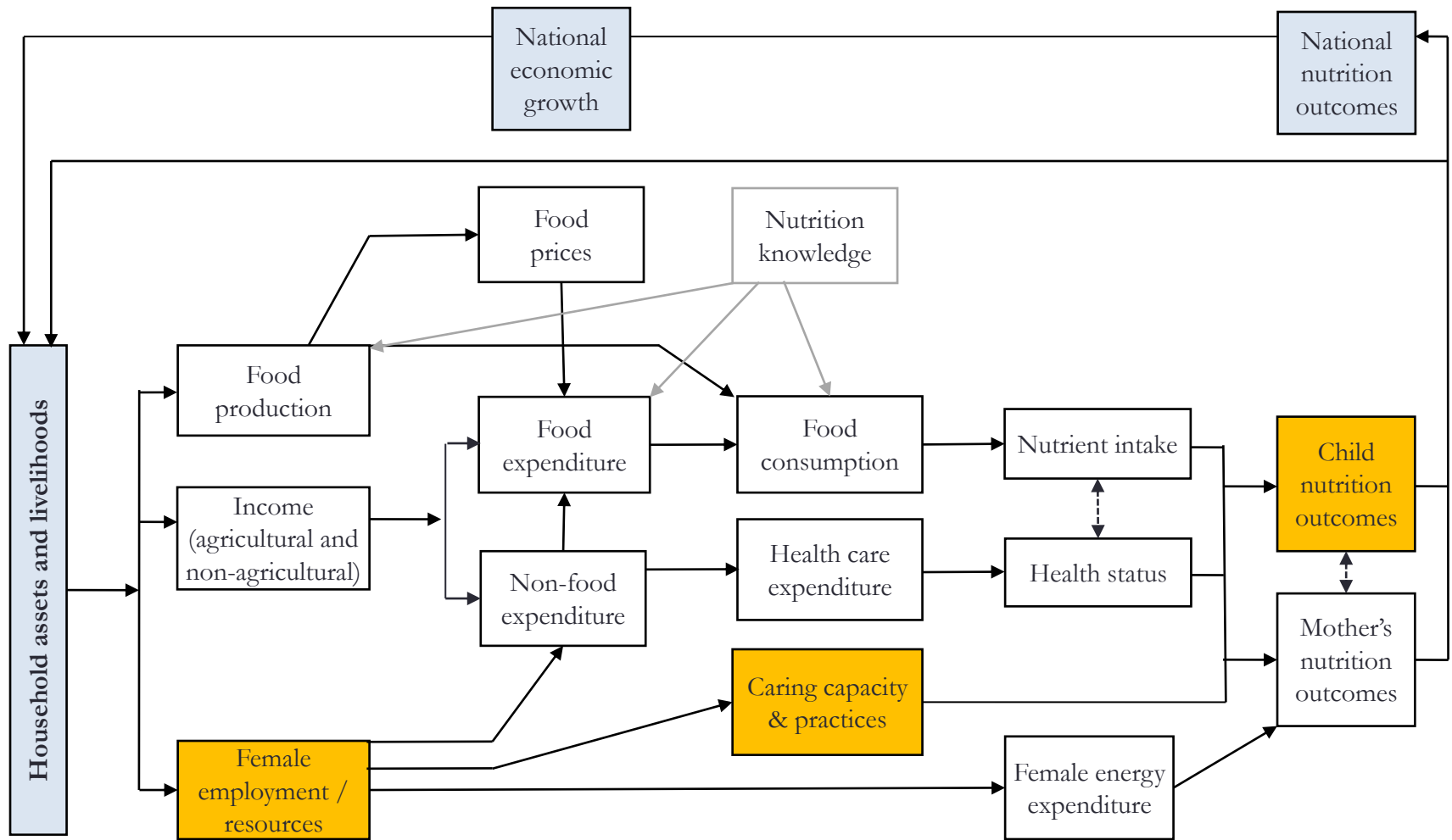
Source: Ruel and Alderman, Lancet 2013



Women's income → resource allocation

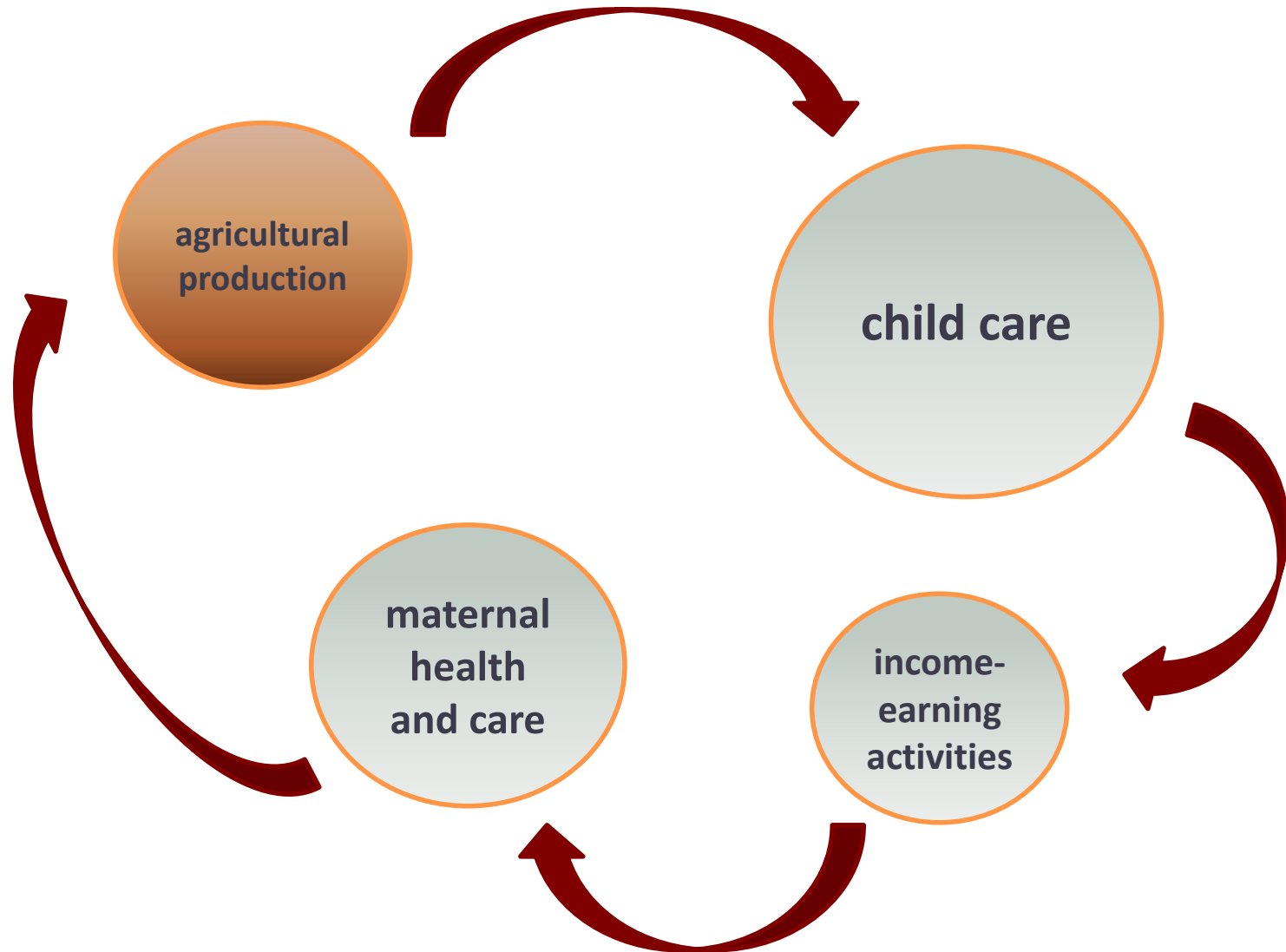
Women's empowerment

- Linked to over 50% of reductions in all child stunting from 1970-1995 (Smith and Haddad 2000)
- Evidence from many studies, in many parts of the world: Women's discretionary income has greater impact on child nutrition and food security than men's (UNICEF 2011, Smith et al. 2003)
- Among agriculture projects that have improved nutrition, women's active involvement has been a consistent element (World Bank 2007, Leroy and Frongillo 2007, Hawkes and Ruel 2006)
- Need more case studies of where agriculture projects affect this; not frequently measured
 - Women's empowerment in agriculture index: USAID/IFPRI/Oxford

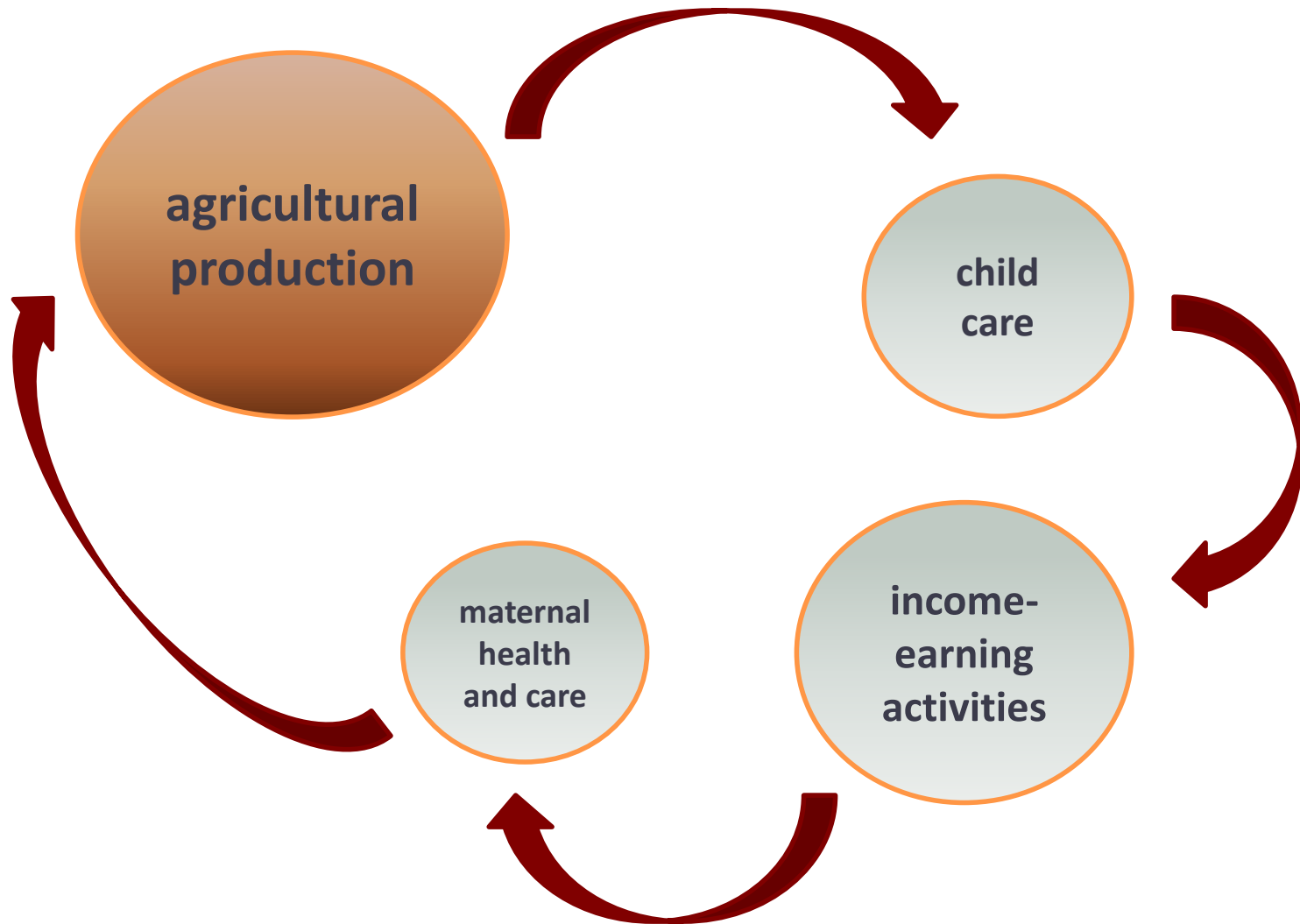


Women's time use → care capacity

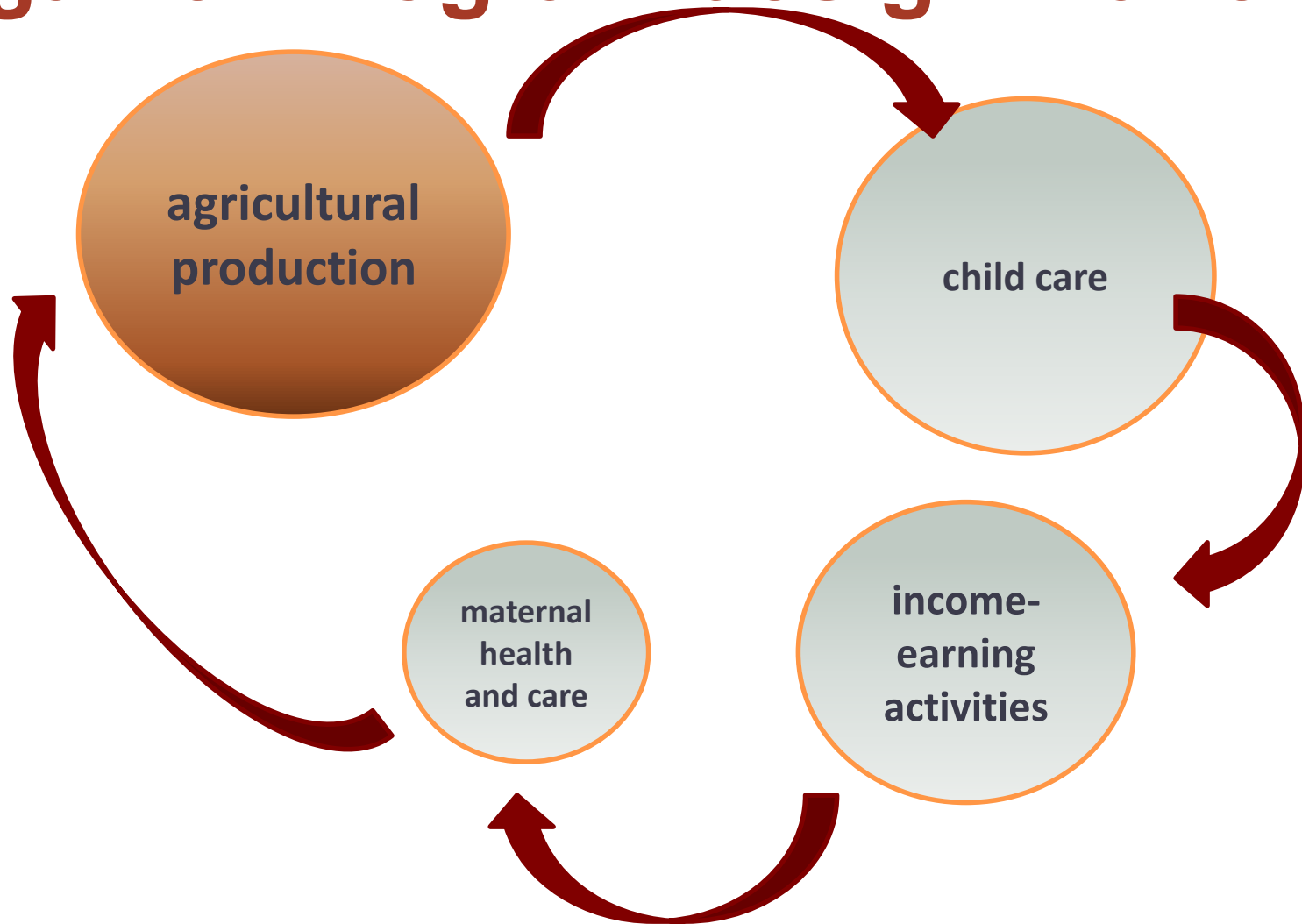
The zero-sum game

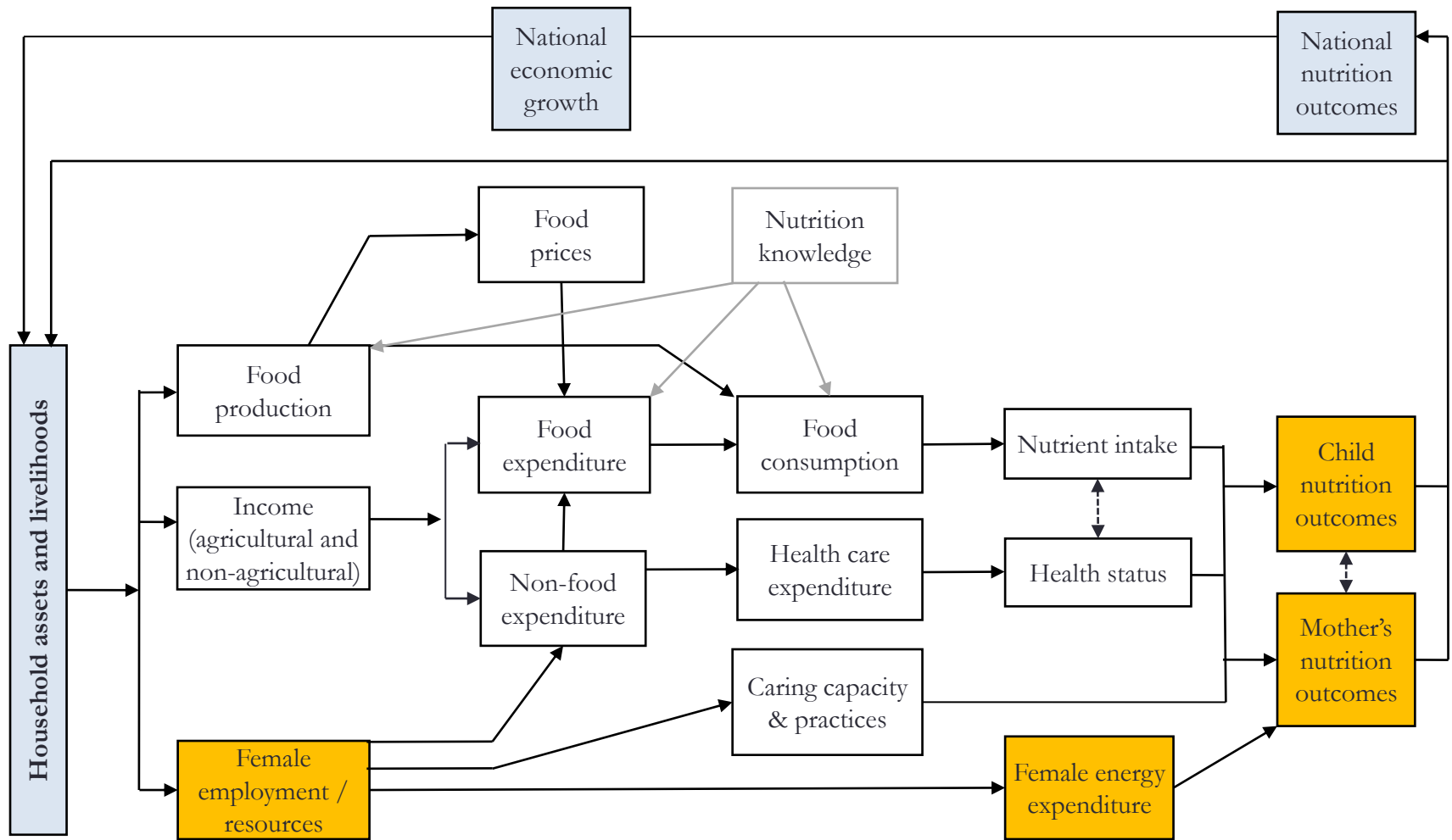


The zero-sum game



It does not have to be a zero-sum game: Program design matters





Women's workload → energy use

Women's agricultural labor

- Agricultural activities tend to make up a major share of rural women's energy expenditure, often at high levels of effort and in addition to normal domestic duties
- Excessive physical activity during pregnancy increases risks of low birthweight and preterm birth; also can reduce lactation
- Women are more likely than men to suffer from seasonal energy deficiency and seasonal weight loss.
- Occupational health hazards in agriculture can have an impact on women, and on their children in-utero.
- Labor requirements that are incompatible with optimal infant and young child feeding; time for food preparation; opportunities for earning and learning



Overall Messages: Pathways to Nutrition

OLD: Assumptions about nutrition impact have been challenged

- Increasing production of calories
- Increasing overall household incomes as a singular priority
- Agriculture as an engine of overall economic growth; trickle-down effect on nutrition minimal

NEW: These need more attention if we are going to reach nutrition

- Increasing production of diverse, nutrient dense foods
- Increasing women's incomes
 - And avoiding harm due to additional time demands or energy expenditure of women
- Incorporating nutrition behavior change communication for enhanced nutrition impact from food production and income

Synthesis of Guiding Principles on Agriculture Programming for Nutrition

- Purpose: To provide an updated and complete list of current agriculture-nutrition guidance and strategies from international development institutions
- To provide an analysis of the key messages
- Audiences:
 - International development community
 - Country-level policy-makers and program-planners





53 documents identified; 20 analyzed in depth



UNITED NATIONS
NATIONS UNIES



THE WORLD BANK

UN System High Level Task Force on Global Food Security (HLTF)



FOOD AND
NUTRITION
TECHNICAL
ASSISTANCE



World Vision



ACF International

Maximising the Nutritional Impact of Food
Security and Livelihoods Interventions

A manual for field workers

USAID'S INFANT & YOUNG CHILD NUTRITION PROJECT

Achieving Nutritional
Impact and Food Security
through Agriculture



USAID's Infant
& Young Child
Nutrition Project



EUROPEAN
COMMISSION



Addressing undernutrition in
external assistance

An integrated approach through sectors
and aid modalities

September 2011



LEVERAGING AGRICULTURE
FOR IMPROVING NUTRITION
AND HEALTH



THE WAY FORWARD

Consultation process

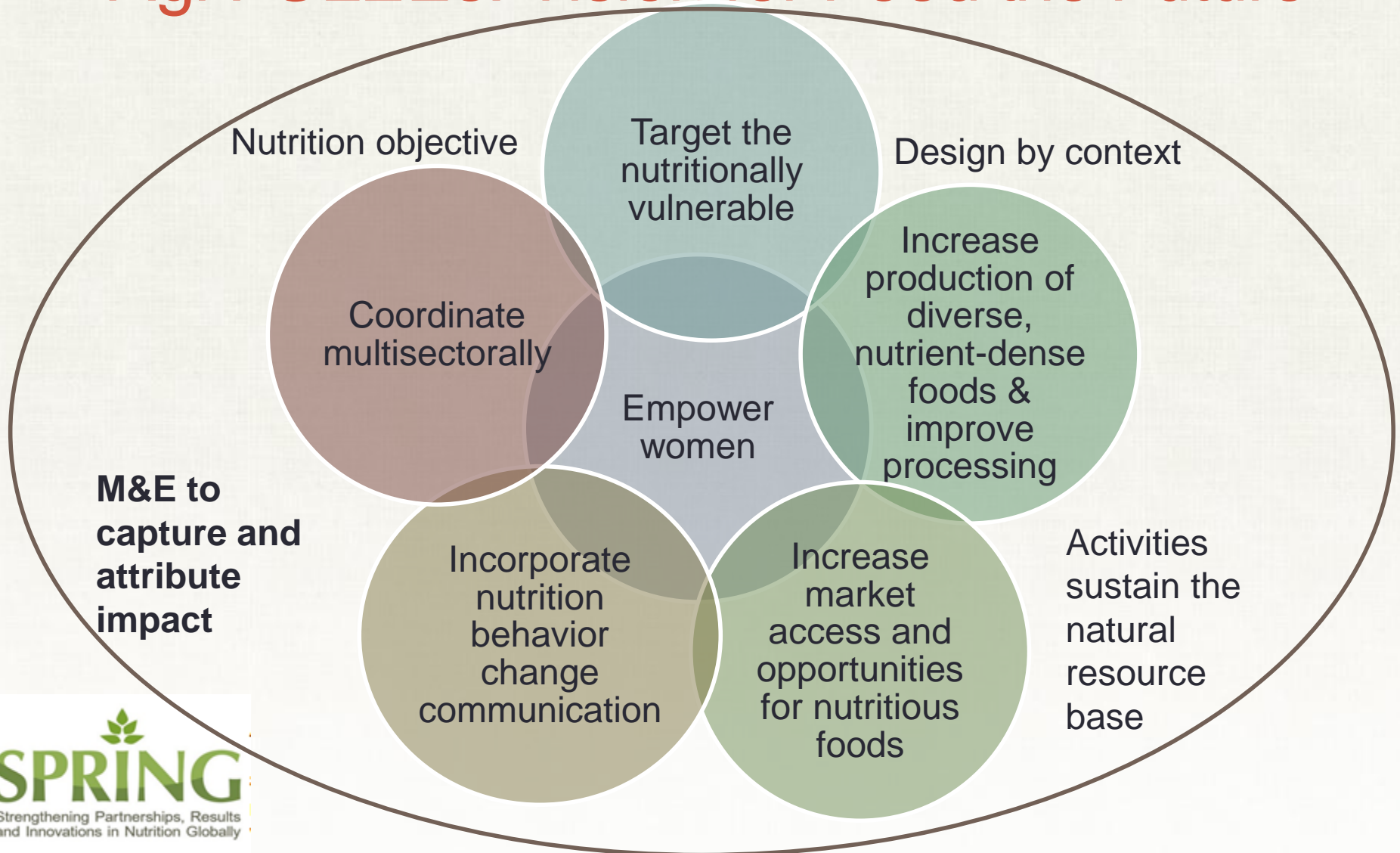
- Use and feedback from:
 - AgN-GLEEs and FTF Landscape Analysis
 - Govt. of Rwanda (MINAGRI)
 - Ministry of Agriculture in Uganda
 - CAADP Nutrition Capacity Development Initiative
 - ACF International (case studies)
- Consultations with:
 - Ag2Nut Community of Practice <http://knowledge-gateway.org/ag2nut>
 - FAO in-house
 - SCN (Geneva Meeting of the Minds)

Guiding Principles for Improving Nutrition through Agriculture

- 1. Incorporate explicit nutrition objectives and indicators into their design, and track and mitigate potential harms.**
- 2. Assess the context** at the local level, to design appropriate activities to address the types and causes of malnutrition.
- 3. Target the vulnerable and improve equity** through participation, access to resources and decent employment.
- 4. Collaborate with other sectors** (health, environment, social protection, labor, water and sanitation, education, energy) and programmes.
- 5. Maintain or improve the natural resource base.** Manage water resources in particular to reduce vector-borne illness and to ensure sustainable, safe household water sources.
- 6. Empower women.**
- 7. Facilitate production diversification, and increase production of nutrient-dense crops and small-scale livestock.**
- 8. Improve processing, storage and preservation** to retain nutritional value and food safety, to reduce seasonality and post-harvest losses, and to make healthy foods convenient.
- 9. Expand market access for vulnerable groups, particularly for marketing nutritious foods.**
- 10. Incorporate nutrition promotion and education** that builds on existing local knowledge, attitudes and practices.



AgN-GLEEs: Vision for Feed the Future



Nutrition-sensitive agriculture: two levels

- Improving conditions for nutritionally-vulnerable smallholder farmer households directly
- Improving the food system so that nutritious diets are easier to obtain for all consumers
- Likewise, two levels of recommendations:
 1. Programming
 2. Policy and governance

Agriculture and Food Policy Support to Nutrition

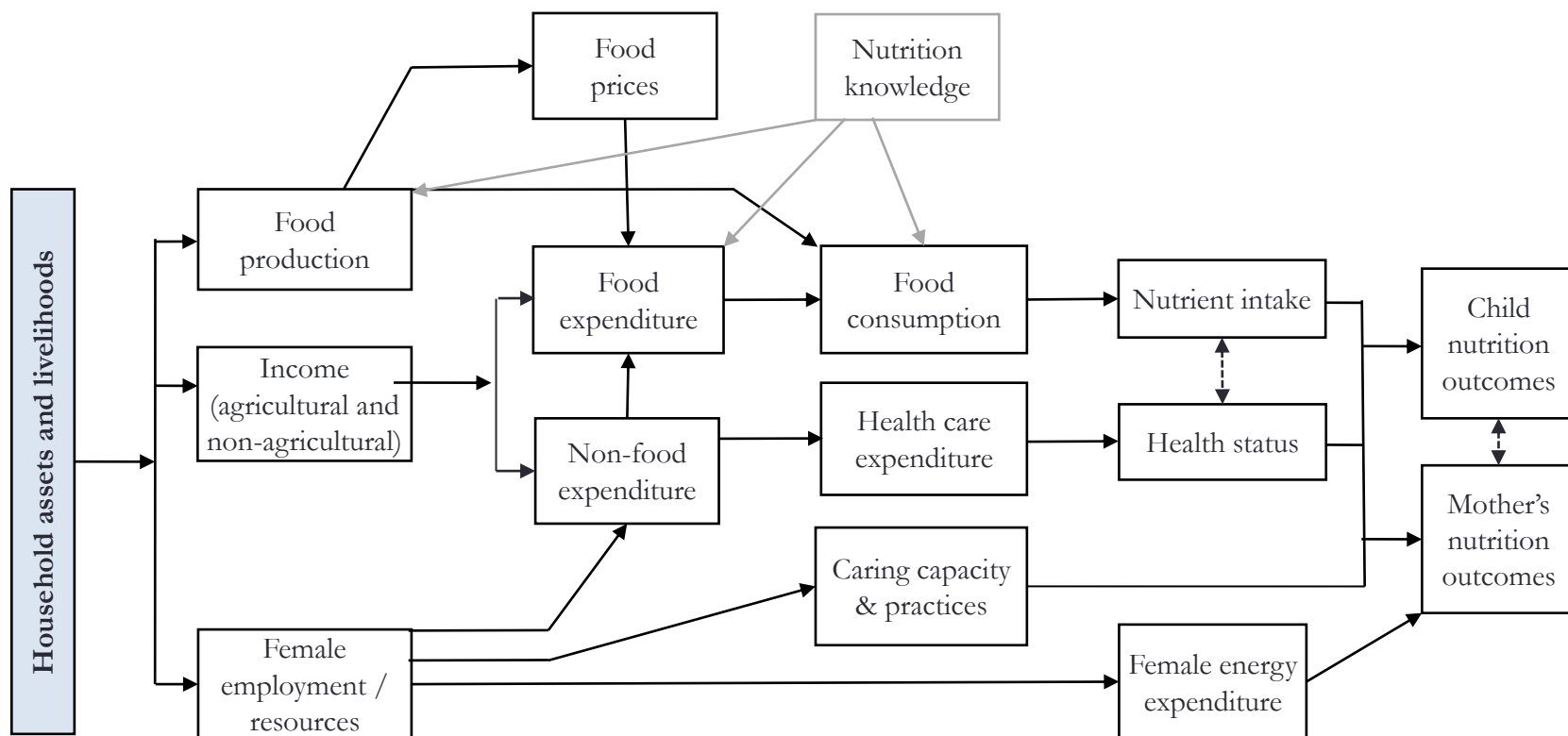
- 1. Increase incentives (and decrease disincentives) for sustainable production, distribution, and consumption of diverse, nutritious and safe foods.**
 - Focus on horticulture, legumes, and small-scale livestock and fish – foods which are relatively unavailable and expensive, but nutrient-rich.
- 2. Monitor dietary consumption and access to diverse, nutritious, and safe foods.**
 - Food prices of diverse foods, dietary consumption indicators
- 3. Include measures that protect and empower the poor and women.**
 - Safety nets, Land tenure rights; Equitable access to productive resources
- 4. Build capacity in human resources and institutions** to improve nutrition through the food and agriculture sector, supported with adequate financing.
- 5. Support multi-sectoral strategies to improve nutrition** within national, regional, and local government structures.

Discussion

Pathways and principles

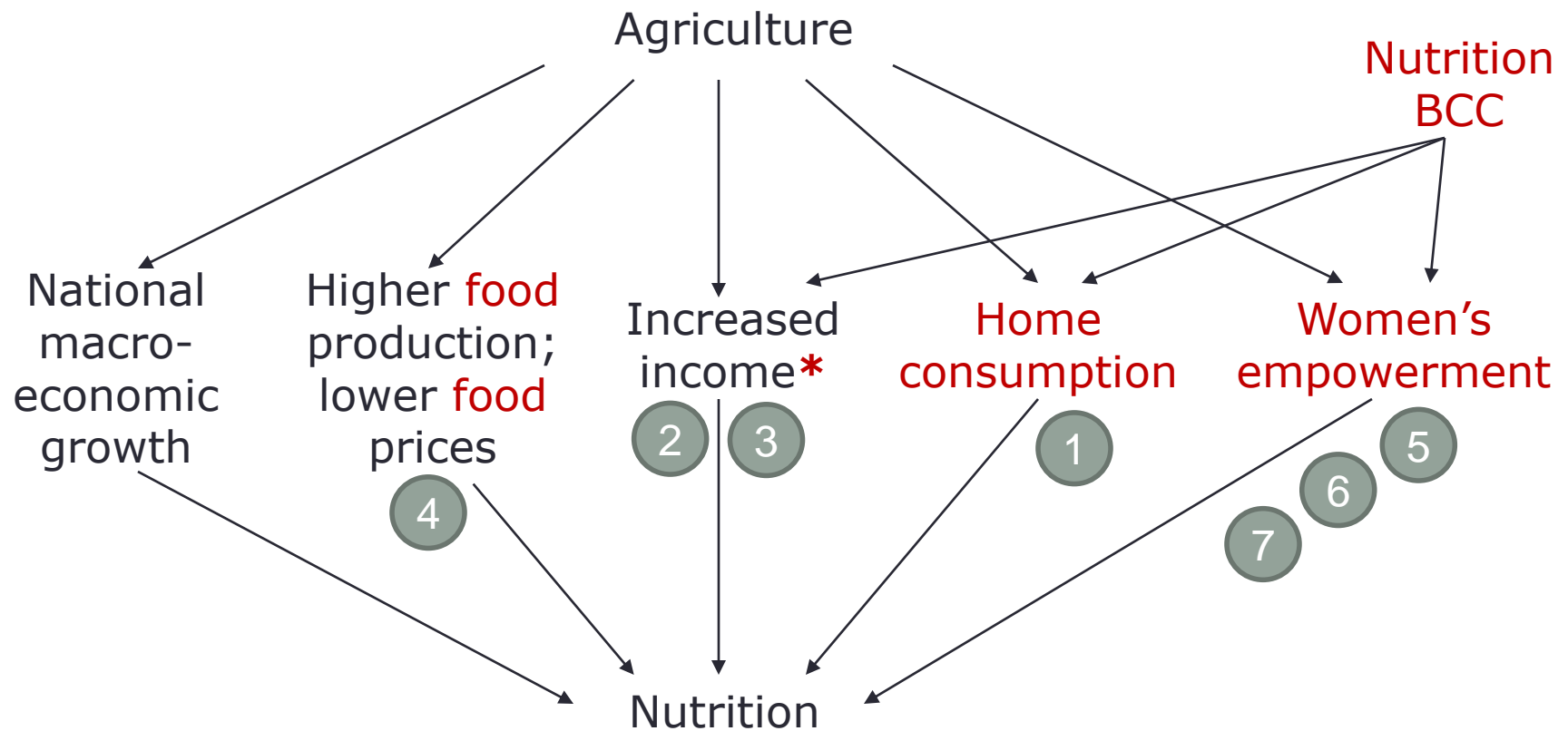
- ✓ Targets the vulnerable
- ✓ Increases production of diverse, nutrient-dense foods
- ✓ Empowers women

- ✓ Increases market opportunities for nutritious foods
- ✓ Incorporates nutrition education
- ✓ Multisectoral coordination



- ✓ Other principles? Refer to principles handout in folder

Summary of pathways



*Particularly if controlled by women