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Using Markets to Promote a Healthy Dietary Transition

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Presentation at the ISPC Science Forum 2013 Session
“Leveraging Value Chains for Better Nutrition and Food Safety:
Lessons for CGIAR Research?”
September 24, 2013

Overview

- The Challenge: Income growth and market development are not sufficient to improve nutrition and food safety.
- The Opportunity: Can value chain research improve market performance for nutrition and food safety?
- CGIAR Research: How is it embracing this opportunity?



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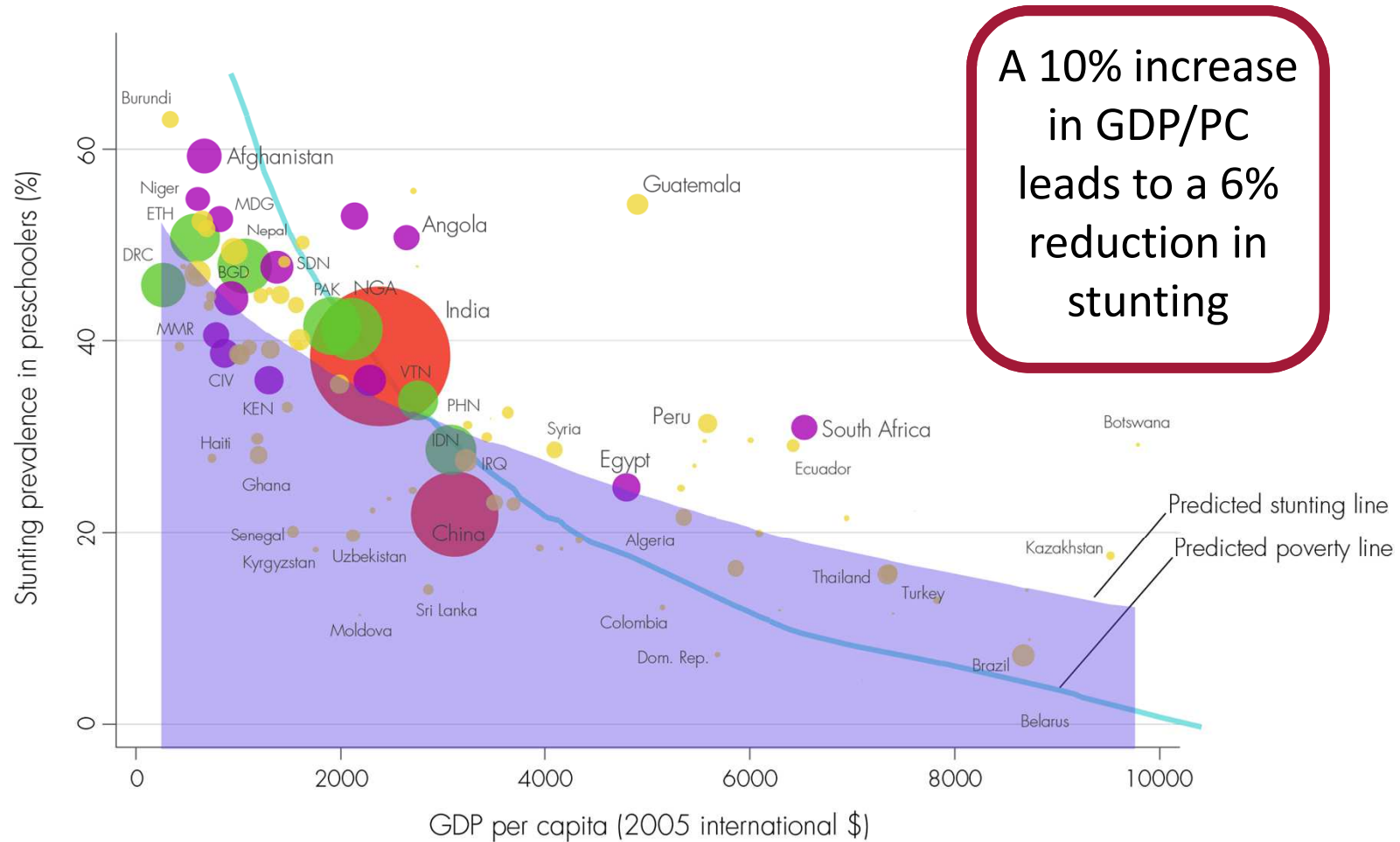
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Income growth and market development are not sufficient to improve nutrition and food safety.

THE CHALLENGE

Income Growth Can Reduce Stunting, But Other Actions Needed

Prevalence of stunting in children aged 0-5 years and GDP per person



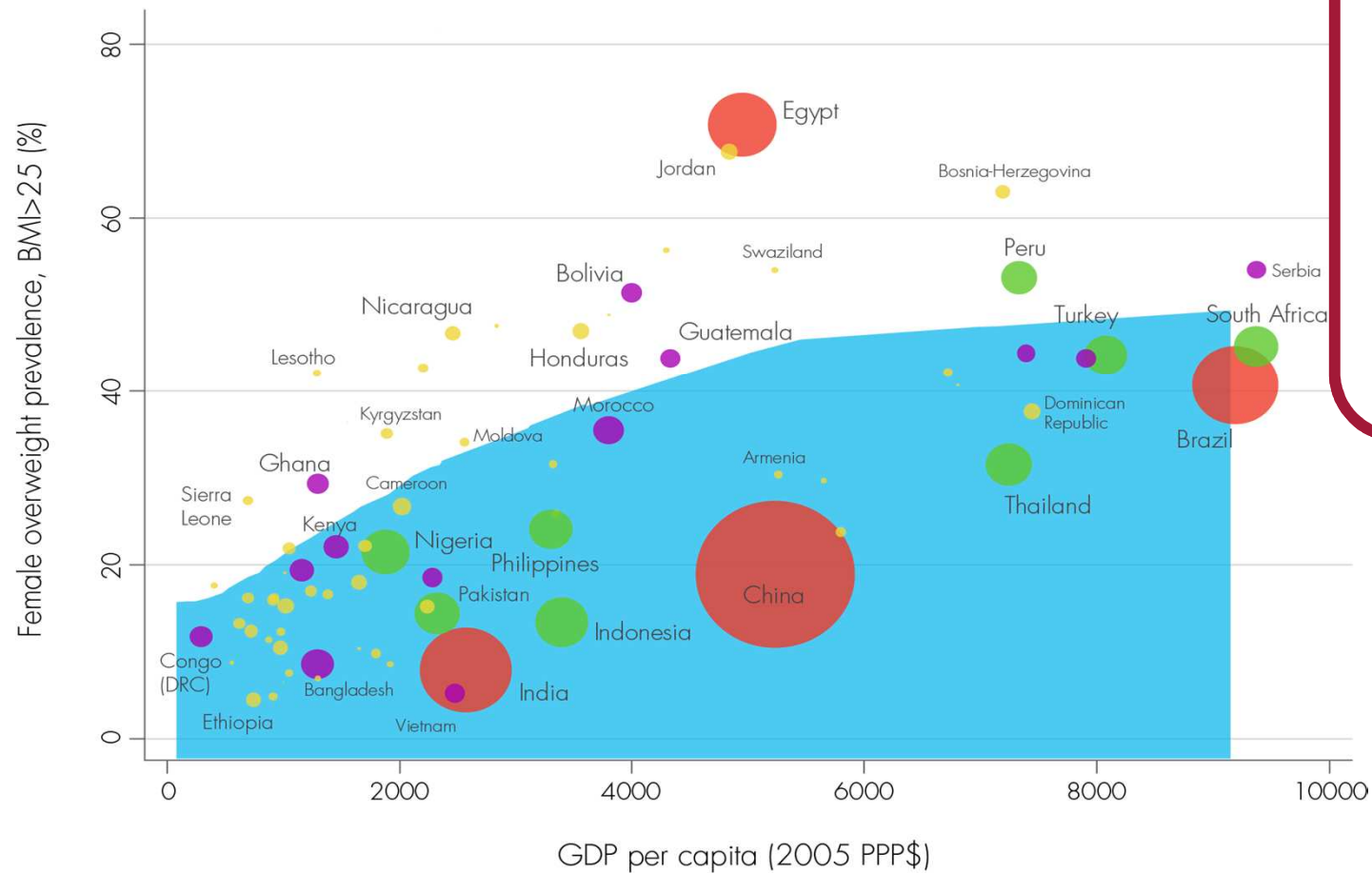


A Changing Focus for Ag and Nutrition

- Increased calorie production and incomes no longer seen as ag's only role
- Focus on how agriculture influences other important determinants of child stunting
 - Women's empowerment, education, time
 - Sanitation and water quality
 - *Nutrient density and diet quality/diversity*

Income Growth Can Increase Risks of Overweight and Obesity

Prevalence of women overweight or obese (BMI > 25) and GDP per person, for low-income and middle-income countries



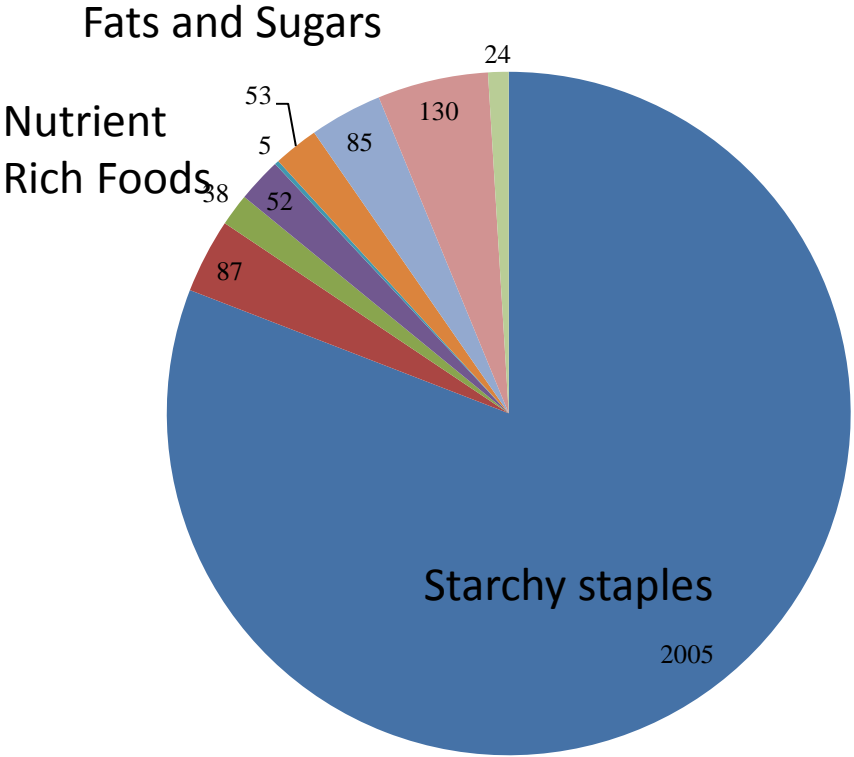
A 10% increase in GDP/PC leads to a 7% increase in overweight and obesity in women

Dietary Transition

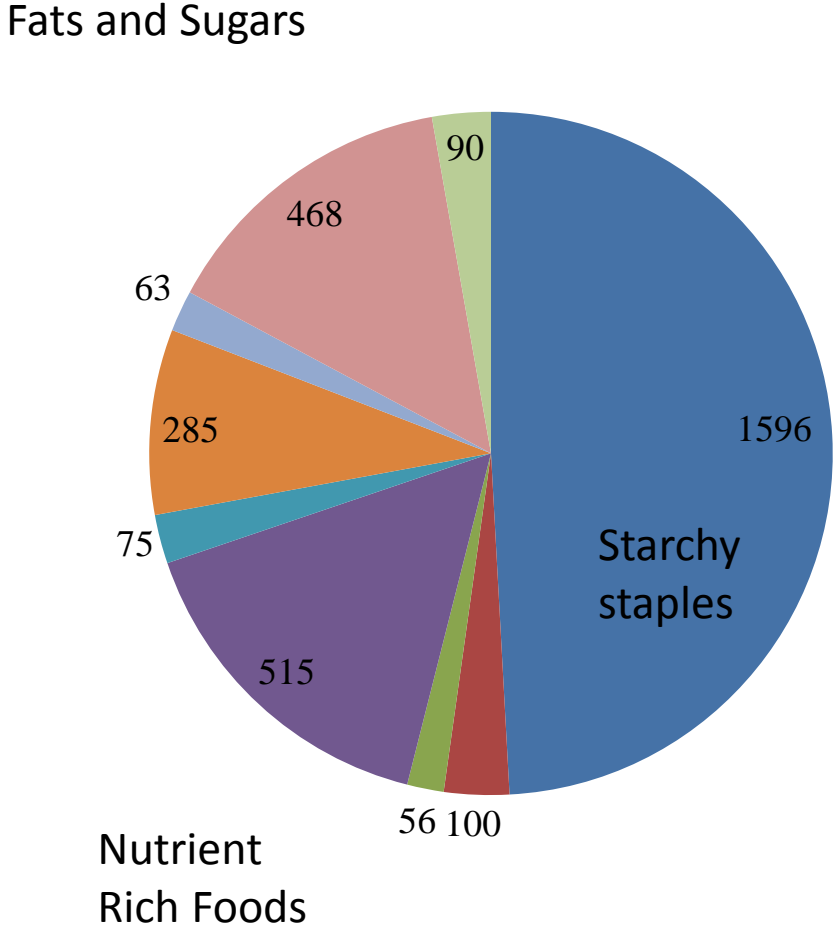
- Diet shift from staples base to other foods is well-known development outcome
- Healthy diet diversity includes vegetables, fruits, legumes, animal source foods
 - Documented link to improved micronutrient density and nutrition outcomes at micro level
- Undesirable increase in fats, sugars, processed foods now occurring at lower income levels with food system modernization
- Emerging double burden of over and under nutrition in many countries

Diet Diversification: Food Group Shares (kcal/cap/day)

Bangladesh



China



Data Source: [FAO Food Balance Sheets](#), 2009

Income Doesn't Lead Diets Towards Ideal Nutrition

(shares of daily calorie consumption by food groups)

	Ideal	US	China	Bangladesh
Starchy Staples	48	31	49	80
Legumes & Nuts	22	5	3	4
Animal & Fish Products	10	14	20	4
Fruits & Vegetables	9	7	9	2
Fats & Sugars	11	43	19	10
Total Calories	2200	Too many	Too many	Too few

Source for "Ideal" shares: Thompson and Meerman, FAO, 2013

Summary: Income Growth Not Sufficient for Desired Nutrition

- Income not perfect driver for improved diets, nutrition
 - Lags in reducing stunting; emerging double burden
- Improved diets mean increases in diet diversity and consumption of nutrient rich foods
 - Micronutrient density and relationship to nutrition at micro level well-established
 - Potential for “unhealthy” diversity
- Price trends reinforce less desired outcomes
 - Relative prices: staples prices declining relative to more nutrient rich foods
 - Opportunity cost of time rising: switch to more processed foods with urbanization



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Can value chain research improve market performance for nutrition and food safety?

THE OPPORTUNITY

Why Income Growth is Not Sufficient: Market Failures and Diet Quality

- Consumer knowledge incomplete
 - nutrition, nutrient content/ safety of foods
- Supply constraints for nutrient rich foods
 - perishability, seasonality, variable nutrient content, food safety, transport
- Result: Under-provision of improved nutrition and food safety



Are There Also Public Failures?

- Public focus on staple crops means underinvestment in nutrient rich foods
 - Pulses in India
- Public focus on meeting food safety standards for high income market access means underinvestment in public health oriented food safety
 - Aflatoxins



Nutrition-sensitive Value Chains: A US Example

- Policy change: Mandatory trans fat labeling in 2006
- Value chain actors adjust:
 - Testing new formulations; advertising new products
 - Farm production of alternative oil sources expands through contracting
 - Research (varieties, processing) key to support these changes
- Benefits for all consumers as trans fat in food supply declines
 - CDC reports reduction in avg trans fat in US adults' blood in 2009 health survey



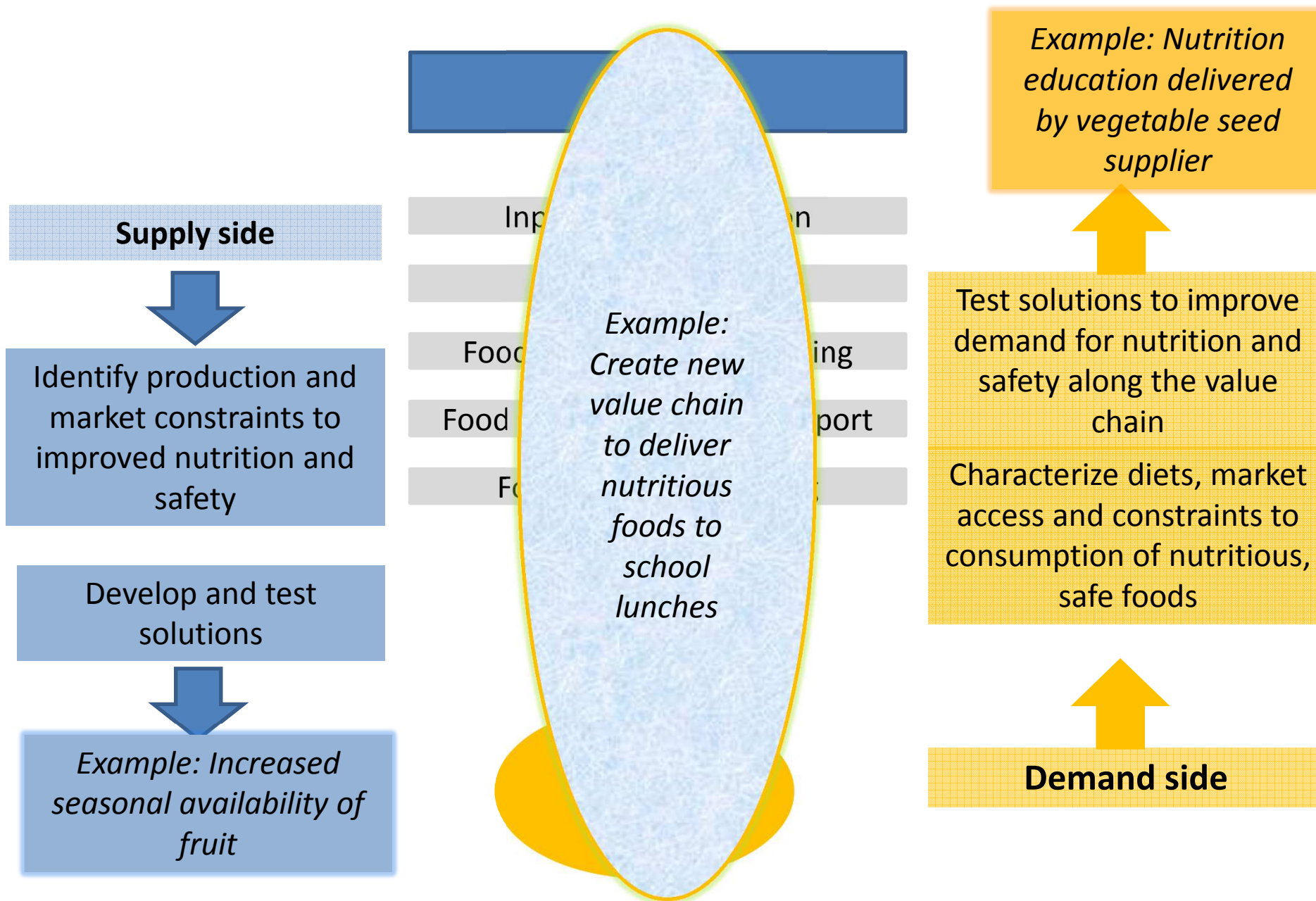
Food Safety in Value Chains: A US Example

- Principles of supply chain approach to prevention and control well-understood
- 2005 *E.coli* outbreak associated with spinach exposed new sources of risk
- Permanent reduction in spinach demand
- Leafy Greens Producer Agreement identified and enforced process controls through industry association

What's Missing in Developing Markets?

- Effective demand and incentives through:
 - Brand equity
 - Mandatory disclosure
 - Regulations
 - Risk and health communication
- Producer innovations supported through:
 - Research investments
 - Institutions to reward coordination
- Can these be adapted for better nutrition in developing markets?

Value Chain Approach



Elements of This Approach

- Each value chain study for a nutrient-rich food should include all of these elements:
 - Dietary and nutritional assessment of target population
 - Identification of key foods to improve / diversify diets
 - Mapping of the value chain for these foods
 - Identification of constraints to supply and to demand
 - Developing and/or testing interventions
 - Identification of enabling policies
 - Assessment of diet quality impact in target population

Measuring Diet Quality Impact

- Focus on diet diversity/ quality as desired outcome
 - Targeted increase of single food not always a good measure of diet quality—“do no harm”
 - How do changes in value chains contribute to diversity and address specific nutritional needs?
 - Several measures of diet diversity validated for diet quality in vulnerable groups
 - Not reasonable to expect reduction in stunting

Value Chain Impacts at Market / Whole Diet Level?

- Develop markets for high value crops
 - Increase income for producers
 - Reduce relative prices of nutrient rich foods
 - Increase consumer access to healthy diversity
- Leverage market incentives to enhance nutritional outcomes from markets
 - Partnerships with private sector to direct market development towards better nutrition
- Can this provide the foundation for a more healthy dietary transition?



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How is CGIAR research embracing this opportunity and leveraging existing expertise?

CGIAR RESEARCH

Leveraging Crop Breeding: Biofortification



Cassava
Provitamin A
DR Congo, Nigeria



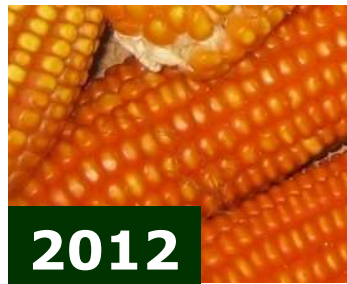
Pearl Millet
Iron (Zinc)
India



Beans
Iron (Zinc)
DR Congo, Rwanda



Rice
Zinc
Bangladesh, India



Maize
Provitamin A
Zambia



Wheat
Zinc
India, Pakistan

VC Research Role: Test market channels for dissemination



Leveraging Other Production Technologies

- Seasonality and Vitamin C content of mango (ICRAF)
- Biocontrol of aflatoxin in maize and groundnut (IITA and ICRISAT)
- Infant food development using small fish (WorldFish)
- VC Research role: Test market viability and consumer impact from these technologies



Leveraging the Private Sector

- Danone-Grameen fortified yoghurt venture
 - Income enhancement for poor women
 - Nutrition enhancement for vulnerable groups
- Vegetable seed suppliers in Bangladesh and Kenya
 - Nutrition messages with production extension
 - Encourage home consumption
 - Expand demand to support expanded supply
- VC Research role: Validate responsible efforts; Identify scalable opportunities



Leveraging Market Incentives for Reduced Aflatoxins

- Aflatoxins naturally occurring and can enter or multiply at any stage from production to consumption
- Market solutions to improve/reward control:
 - Warehouse receipts to improve storage
 - Alternate uses, eg., oil processing, animal feeds
 - Training and product testing delivered through farmer organizations
 - Biocontrol adoption linked to feed markets
- VC Research role: Test market and technology interventions together



Leveraging Dedicated Supply Chains

- Home Grown School Feeding Programs
 - Develop and reward local supply chains for school feeding
 - Promote nutrition education linked to local foods
 - Support child nutrition, school performance, habit formation
- VC Research role: measure nutrition, education, and market synergies



A4NH Research In This Session

- Micronutrients: OFSP (CIP/IFPRI)
- Diet Diversity: Fruit (ICRAF)
- Food Safety: Animal source foods (ILRI)



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For more information on A4NH Value Chain Research:

<http://www.a4nh.cgiar.org/our-research/value-chains-for-enhanced-nutrition/>

THANK YOU!