Friedman School of Nutrition Science and Policy

Global Legume Researchers Meeting

Achieving Concurrent Agricultural Productivity and Nutrition Goals Through Research

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Twin pillars of USAID *Feed the Future:*

- Accelerate agriculture growth through improved agricultural productivity, expanded markets and trade *in vulnerable areas*.
- Improve *nutritional status of individuals* through access to diverse quality foods and by strengthening prevention/treatment of undernutrition.

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"Cowpea enriched porridge provides another opportunity for value addition that can significantly improve infant and child nutrition."

USAID RFP March 2013

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Trends in global legume (pulse) consumption

Yes, we need research on how to promote higher, better, more resilient, sustained levels of legume production!

Production Consumption

Source: FAOSTAT

"Higher calorie intake has improved nutrition and health."

CGIAR (1996) *Annual Report 1995-96*

- "Merely producing more food does not ensure food security or improved nutrition." (Herforth (2012) World Bank)
- "Agriculture interventions do not always contribute to positive nutritional outcomes." (FAO 2012)

Nutritional Impacts of Targeted Agricultural Programmes

Evidence of nutritional impact is inconclusive

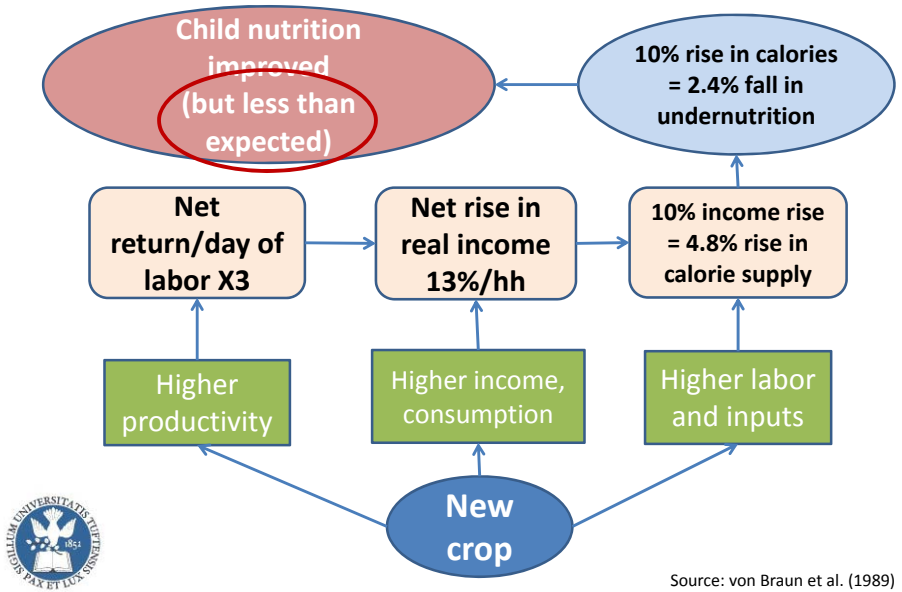
Although there is some evidence of impact from home gardens and homestead food production systems on vitamin A intake and status of children

Strong evidence from roll out of biofortified vitamin A rich orange sweet potato on vitamin A intake of mothers and children and vitamin A status of children

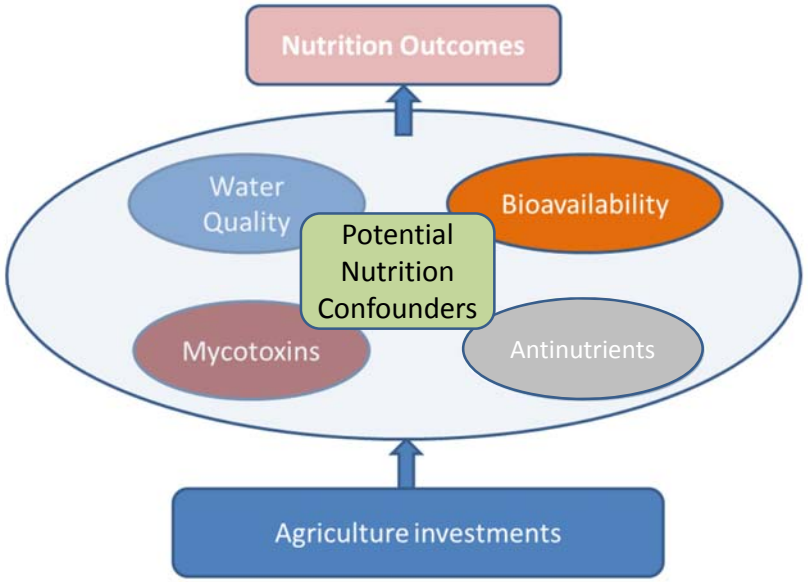
Limited evidence likely due to

Weaknesses in program goals, design, targeting, implementation

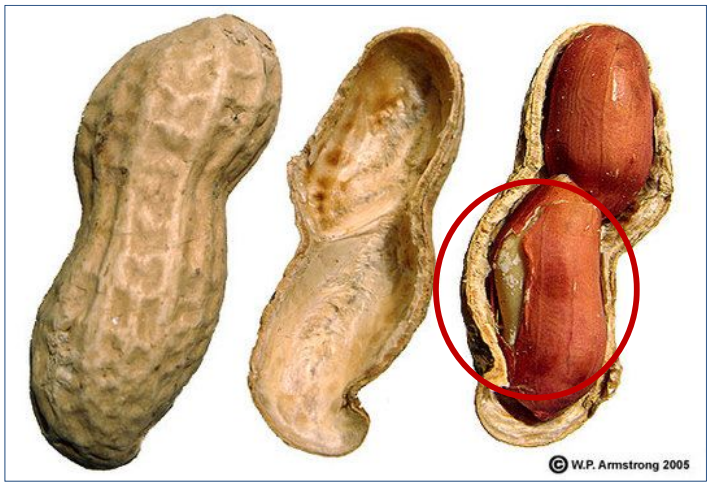
Lack of rigor in impact evaluation, including lack of theory-based program impact pathway analysis



Source: von Braun et al. (1989)



Mycotoxins and legumes



Iron absorption studies:
Rwandan women with low iron status.

- Human iron absorption from beans high in polyphenols 27% lower (P<0.01) than in from low polyphenol beans.

Iron absorbed from biofortified beans no higher than normal beans: "indicating that efficacious iron biofortification may be difficult to achieve in beans rich in [phytates and polyphenols]".

Source: Petry et al. (2012) Common Bean Has Limited Potential as a Vehicle for Iron Biofortification (*Jou. Nutr.*)

Designing impactful research

Global Pulse Production and Consumption Trends: The Potential of Pulses to Achieve 'Feed the Future' Food and Nutritional Security Goals

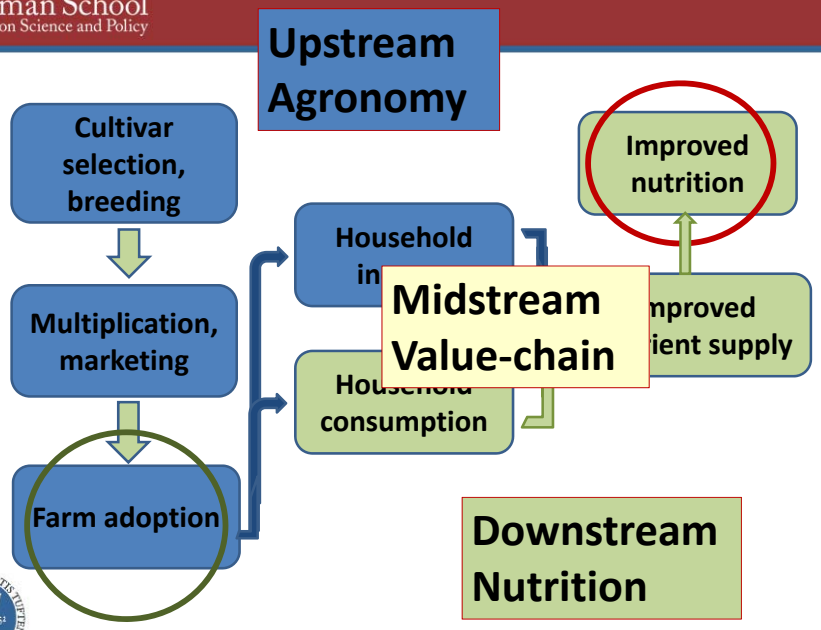
Mywish Maredia

Department of Agricultural, Food and Resource Economics, Michigan State 1University

Global Pulse Researchers Meeting, Rwanda, Feb 13-19, 2012

Remember, the FTF goals are 'people' focused..and so should the research we do

Source: Maredia 2012



How can pulse crop research contribute towards FTF goals?

- By **exploiting the diverse roles pulse crops** play in the food system
  - Develop pulse crop technologies that will lead to increased consumption of nutritious food – not just consumption of pulse crops (i.e. recognize the indirect role pulse crops play in enhancing the consumption of nutrition rich animal-based foods)
  - Develop technologies that will allow households utilize different stages of legume crop as food in critical 'hunger period'
- By **generating credible evidence** on the benefits of a diet rich in legume based foods to influence policy decisions

Source: Maredia 2012

Conclusions

1. Yes, legumes ***can*** support improved nutrition. But legume researchers need to help empirically demonstrate it.

2. We all need more ***honesty*** about feasible contributions to nutrition, and ***rigor*** (outcome-appropriate methods).

3. More ***explicit*** logical framework and value-chain analyses needed to identify most cost-effective contributions of legumes to nutrition.