Value Chains for Enhanced Nutrition "Flagship": Legumes

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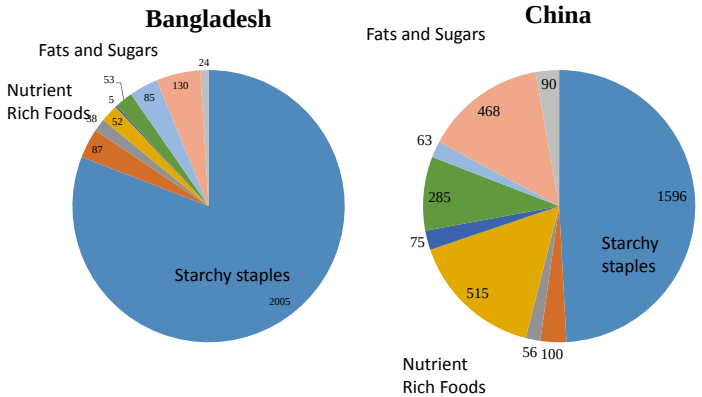
Challenge: Value Chains for Enhanced Nutrition

- **Diets in developing countries are not just (intermittently) short on calories, also on macro and micronutrients**
- **Income increases are not sufficient to improve diet**
- *Policies sometimes promote production of grains at the expense of healthier products*
  - US Farm Bill, but many examples in LDCs too
- Notion: Can use a value chain approach targeting more nutritious crops
  - Relatively new notion at IFPRI and somewhat within the CGIAR (exception of biofortification which is related)

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



Data Source: FAO Food Balance Sheets, 2009

Evidence: Shares of daily calorie consumption by food groups

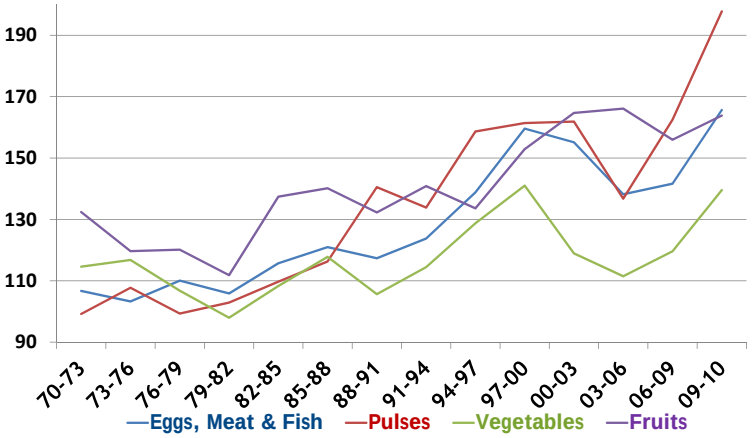
	Ideal	US	China	Bangladesh
Starchy Staples	48	31	49	80
Legumes & Nuts	**22**	**5**	**3**	**4**
Animal & Fish Products	10	14	20	4
Fruits & Vegetables	9	7	9	2
Fats & Sugars	11	43	19	10
Total Calories	2200	Too many	Too many	Too few

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

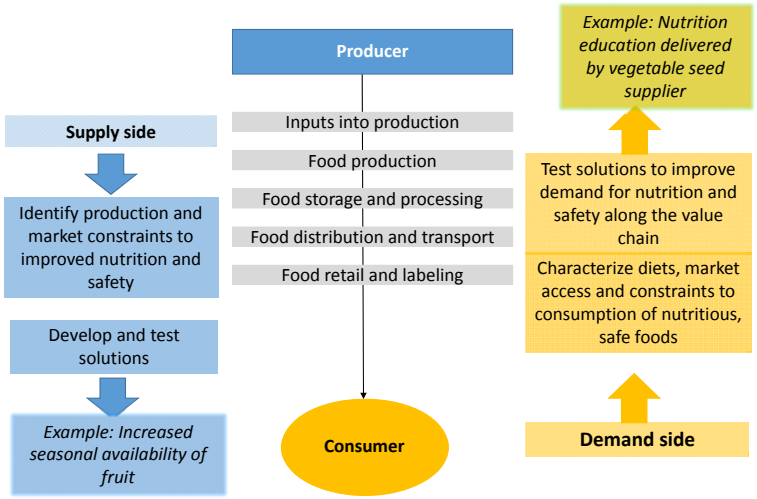
Income Increases and Diet

- Ruel and Alderman show that:
  - 10% increase in GDP per capita associated with 6% reduction in stunting (income elasticity of stunting=-0.6)
  - 10% increase in GDP per capita associated with a 7% **increase** in overweight and obesity among women (income elasticity of overweight=0.7)
- Why? Previous food security goals could be a reason…

Non-Staple Food Prices in India Have Risen by 50% Over 30 Years



Value Chain Approach



Three aspects of value chains for enhanced nutrition

- Demand (Consumption) Side
  - Affected by Prices, Income
  - Demand "shifters" (Preferences; **Information**)
- Supply (Production) Side
  - Producing more nutritious foods (macronutrients/micronutrients)
  - Making sure those are safe (food safety- more of a challenge with animal source foods, but also aflatoxins etc.)
- Policies / Markets

Four Broad Classes of Nutritious Foods

- Pulses/Legumes
  - Could categorize specific oilseeds here (e.g. soy)
- Fruits/Vegetables
- Animal Products
- Biofortified Crops (HarvestPlus)

- Different Classes of Foods may have different constraints to increased use
  - Pulses/Legumes– cooking times

Applied to Pulses and Legumes…

- Demand Side
  - Consumers may simply lack information– pulses and legumes are particularly healthy crops
  - Often only lightly processed (e.g. washed and bagged)
  - May be innovations possible on the demand side to stimulate consumption of pulses or legumes
- Supply Side
  - Relative prices quite high (in many cases) so clear advantage to growing more pulses and legumes
  - Value chain interventions could lead to increased supply and smallholder incomes
- Policy
  - Public focus on staple crops means underinvestment in nutrient rich foods

Pulses and Legumes: What is A4NH doing?

- Our goal is to develop a research program that examines ways to overcome constraints against:
  - Consumption of pulses/legumes among the poor
  - Production of pulses/legumes (in collaboration with PIM)
  - Potentially stimulate the use of pulses and/or legumes in more processed foods
- One constraint- legumes in particular may not do much for stunting
  - Cooking times are likely prohibitive for the poor

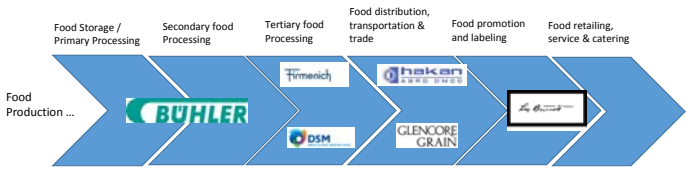
Work so far: Pulse Innovation Partnership (PIP) in India (through McGill)

- What are the technological capabilities of the partners in the PIP (inventory)?

- What is the route to market (business model) for the PIP?

- What are the funding avenues for the PIP projects?

Capabilities in the PVC



Partner	Capability
Buhler	Portfolio of technologies for end-to-end primary and secondary processing of pulses (Drying, Hulling, Grinding, Roasting, Splitting, Polishing, Grading and Extrusion).
Firmenich	Flavors and Fragrances. Firmenich has not worked with pulse based products so far but can apply existing capability to pulse based products.
DSM	Food Processing ingredients - food enzymes, cultures, savory ingredients and other specialties for the foods and beverages – that can shape the taste and texture
Hakan	Pulse trading. Capability to source and supply various pulse commodities.
Glencore Grain	Pulse trading. Capability to source and supply various pulse commodities.
Leo Burnett	Marketing/Advertising
Pulse Canada/ Pulse Australia	Pulse growers association of Canada and Australia respectively. Capability in commissioning research on new Pulse varieties, establishing the nutritional importance of Pulses.

Gaps and Challenges

- Absence of consumer facing food companies in the partnership. This creates a void in
  - Intelligence on Consumer preference
  - Distribution and retailing of products
- Heterogeneity of interests among partners
  - Locational interests (Canada, Australia, India).
  - Short-term versus long-term interests (what pulse products can we take to market in the next year; how can we increase pulse consumption so there is an increased demand for pulse production).
- Route to market unclear
  - Should the PIP engage in product innovation? If so, which and how many food companies should PIP partner with?
  - Should the PIP provide a knowledge package service offering? How can such an offering add value beyond existing market mechanisms?
- Funding model
  - What are the sources of funding for PIP activities?
  - What is the suitable positioning to seek funding from these sources?

Infra + Knowledge Package – A three pronged strategy

- **Innovation pillar**
  - Upstream value chain support for food companies to develop pulse products. This spans pulse sourcing, technologies for all stages of physical processing and technologies for sensory experience.
  - The subset of partners for this pillar will be Firmenich, Buhler, DSM, Hakan foods, Glencore, Leo Burnett.
- **Marketing pillar**
  - Consumer and market insights; Market intelligence
  - Broad marketing support for creating awareness about pulse-based products and their nutritional benefits
  - Endorsement by nutrition experts (example: American Nutrition Association).
  - Recognition as an official partner of IYOP, perhaps with mention at IYOP events and in IYOP marketing material.
  - This may be headed by Leo Burnett, Pulse Canada, Pulse Australia along with CGIAR.
- **Policy pillar**
  - Work with governments to negotiate favorable policies for pulse based products.
    - More responsive to evidence of health and nutrition benefits
    - Enable investments that don't suffer from market and institutional failures and are not skewed through inefficient subsidies or regulations.
  - Policies that interface between marketing and the behavioral and social improvements required for healthier consumption.
  - Pulse Canada, Pulse Australia will drive this in respective countries with support from CGIAR.

Private Sector– "Gives" and "Gets"

- Gives
  - Make a commitment to roll out at least 2 pulse-based food products in 2016. Could be formalized via an MoU.
  - How many products? How many countries?
- Gets
  - Innovation support
  - Marketing support (Depending on the pledge, they could be awarded partnership levels) partnerships)
  - Policy support
  - Opportunity to create a new, healthy food category (contribution to the triple bottom line)
- The actual gives and gets will depend on the type of company i.e., SMBs or large companies.

PIP – High Level Action Plan

- Form task force for each pillar – Innovation, Marketing and Policy.
- Task forces to fine tune the club, public and private goods they will offer; Create detailed plan to make that happen.
- Reach out and sign up food companies based on the PIP value proposition articulated (to be finalized by the task forces).
  - Target: 20 pulse products by 2016 (10 food companies)
  - Companies may be large MNCs or SMBs
  - Location not to be a constraint (Canada, Australia, India)
  - Each partner to open doors with 2 food companies?

Funding

- The partners who stand to expand their business and monetize their in-kind support to the PIP should put down a seed fund (Firmenich, Buhler, DSM, Hakan, Glencore). This should cover for travel and other activities to enlist food companies.
- Others (Pulse Canada, Pulse Australia) will contribute in-kind.
- IDRC may be willing to support a proposal that uses the policy pillar as the main plank and linking it to private sector participation.
- IYOP might be willing to provide in-kind support to the marketing pillar.
- *This component could use potentially some more thought*

Conclusion

- Through Value Chains for Enhanced Nutrition, looking for ways to integrate project ideas with rigorous evaluation
  - Likely to implement something in next year with IFPRI India office
- Interested in testing ways that we can either stimulate demand for or develop supply of interesting products related to legumes
  - Focus remains on stimulating demand among the poor to diversify diets among those most likely affected by malnutrition