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Modernization of Pulse Sector Trade and Industry in India

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Global Pulse Markets Are Changing

- Different origins in the market
 - India and Turkey drive demand;
 - Canada, Australia drive supply
- Changes in logistics, processing technology
- Changes in demand cycles – no longer based on local production as new crop supply is year round from many origins
- Globally pulses are being consumed in different ways by different consumer segments



Traditional vs. Non Traditional Consumption

Traditional Red Lentil
Curry



- ✓ **14%** daily intake of fibre
- ✓ **25%** daily intake of iron
- ✓ **7g** protein per 100g serving

Traditional Formulation:
**100% Durum
Semolina Pasta**

Reformulated:
**Pulse Inclusion
25% Lentil, 75% Durum**



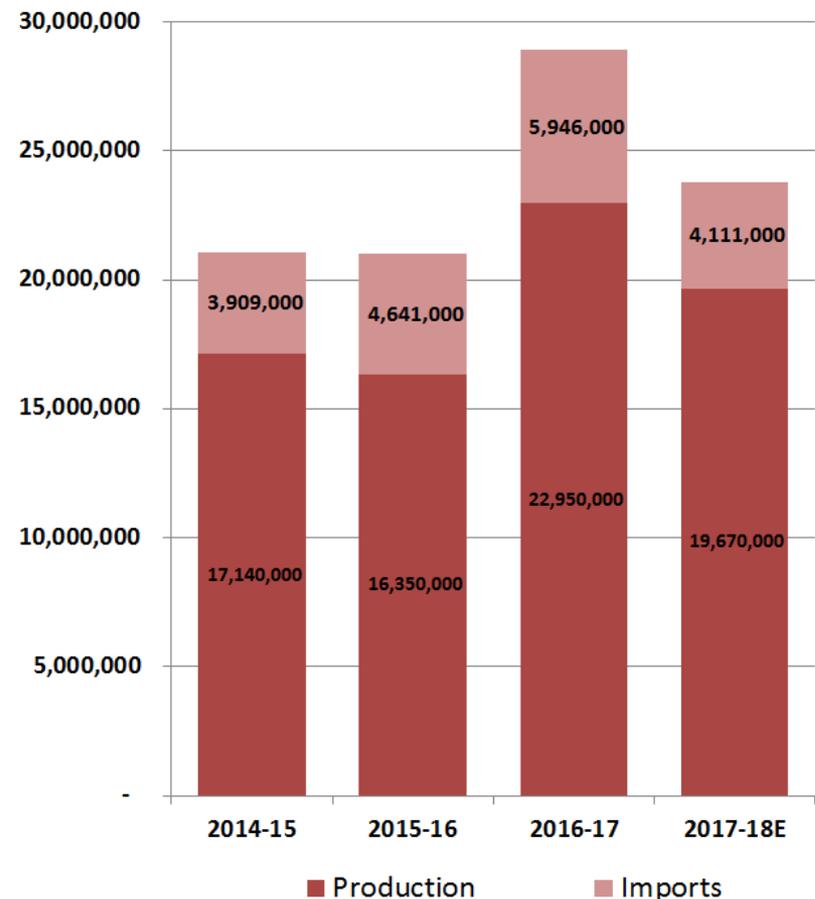
- ✓ **25%** lower carbon footprint
- ✓ **100%** increase in fibre
- ✓ **25%** increase in protein

Adapted from: Gan et al. 2011. Unpublished results, AAFC;
U.S. Department of Agriculture, Agricultural Research Service. 2010. USDA National
Nutrient Database for Standard Reference
Eat This Much.



India – Pulses Import and Production

- India pulse imports have been high for years to guarantee consumption supply leading to food inflation, issues on food security and impacting local agricultural policy – Not only pulses but wheat and other ag-commodities as well
- Local realization by farmers for pulses have been well below MSP – GoI needs to work to raise prices to incentivize farmers to grow pulses
- Production has been variable for some time (irregular monsoons, farmers growing higher value crops, etc)
- Policy appears to be aimed at support for local industry as well as addressing local concerns surrounding food inflation and food security
- India as a massive ag producer cannot be import dependent, but should be mindful of global import/export dynamics
- Resulted in new tariff structure that is changing global pulse import/export sector



Source: India Directorate General of Commercial Intelligence & Statistics



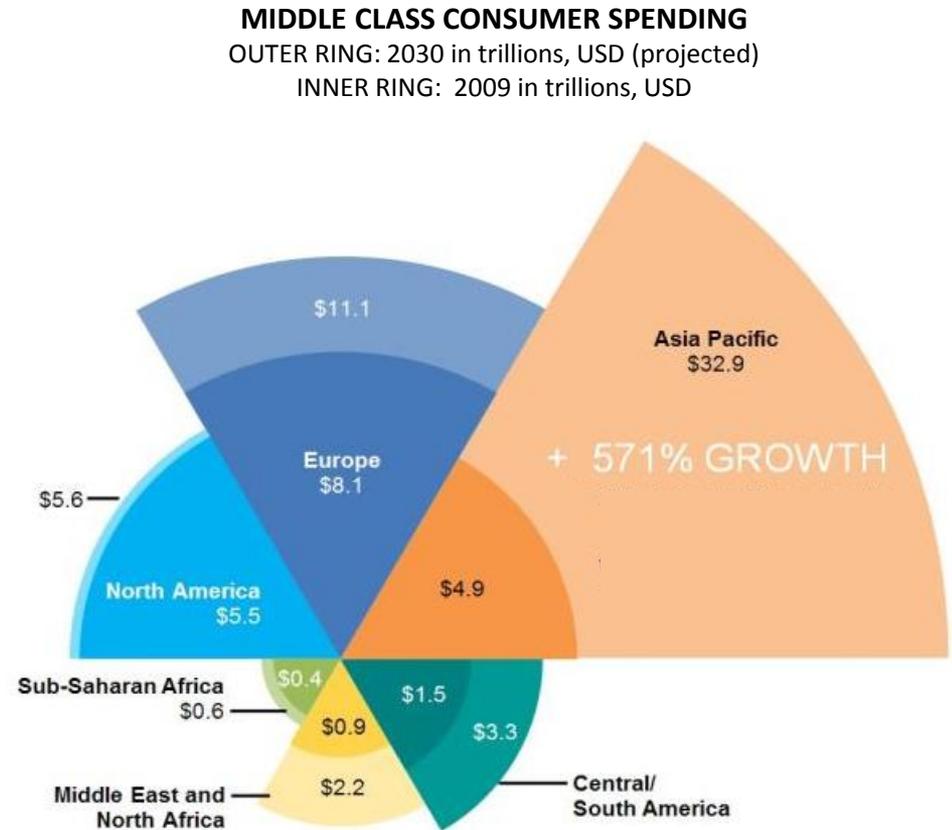
How pulses are marketed is changing





Pulses/Staple Food Market Dynamics

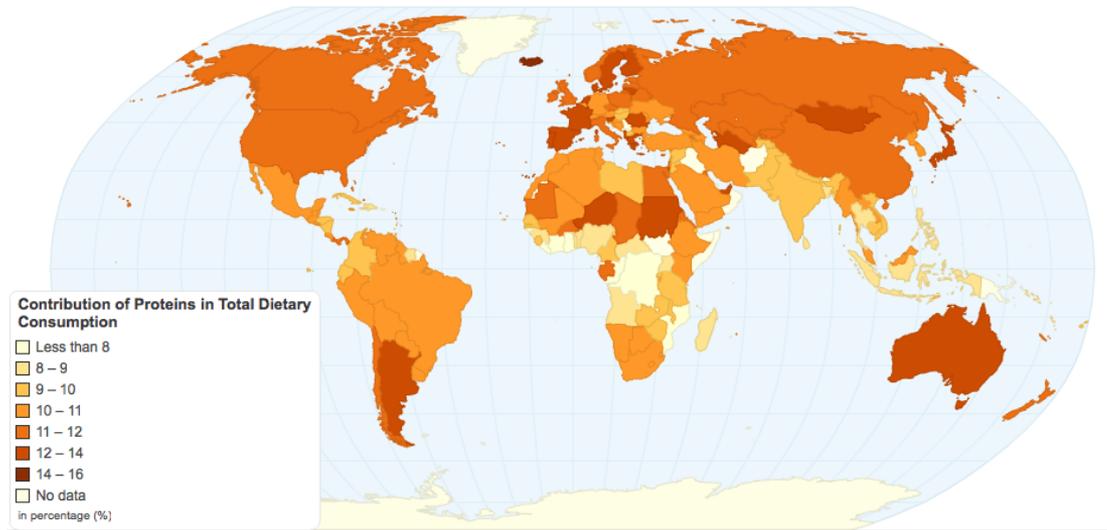
- Middle class estimated to be 200 million in India by 2020 and 475 million by 2030
- As middle class grows they want to consume more and better protein
- Want to add convenience but retain traditional consumption
- Change in retail sector in India as middle class grows (e.g. mid-90's only 200 modern grocery stores mostly kirana – today over 3,500)



Source: AAFC; UN FAO



Trends on Protein



- World average is 77g/person/day or 11% of daily dietary intake
- Consumption of protein from vegetable source has increased 61% from 2010 to 2014
- 87% of vegetable protein market is soy and wheat but not ideal, as they are either genetically modified or contain gluten
- Pea protein represents just 2% of the market for vegetable-based proteins, but saw a 46% increase in product launches last year
- The **global ingredient protein market** is expected to reach \$28.9 billion by 2020, with plant protein expected to continue accounting for the majority of the protein ingredient market

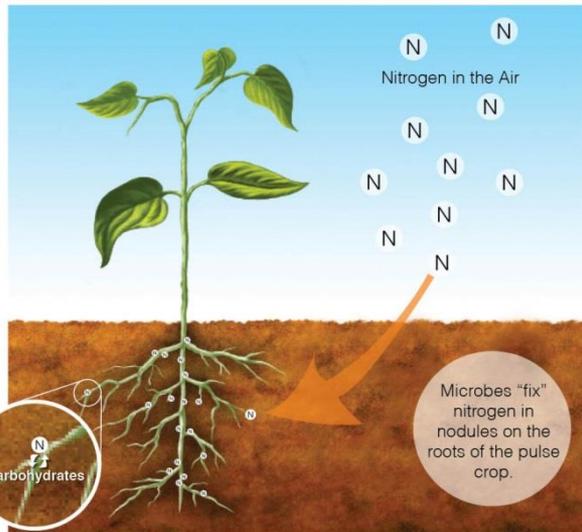
Source: Cormark; Grand View Research; FAO Food Balance Sheets 2010



Pulses & Sustainable Agriculture

Plant Fixing Nitrogen

- Pulses produce their own fertilizer by fixing nitrogen

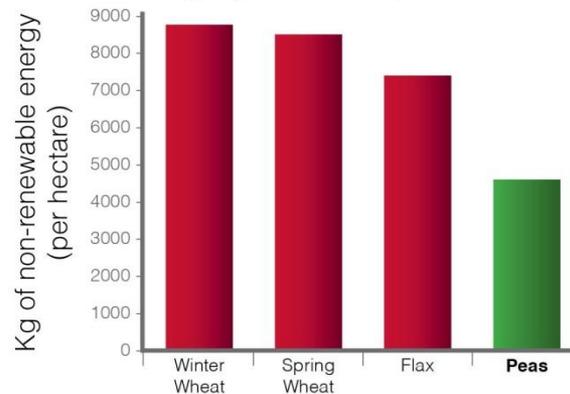


Pulse crop with root nodules

Lower Energy Requirement

- Pulses Use Less Non-Renewable Energy Relative to Other Crops
- 70% of the non-renewable energy used in cropping systems in western Canada is attributable to fertilizers

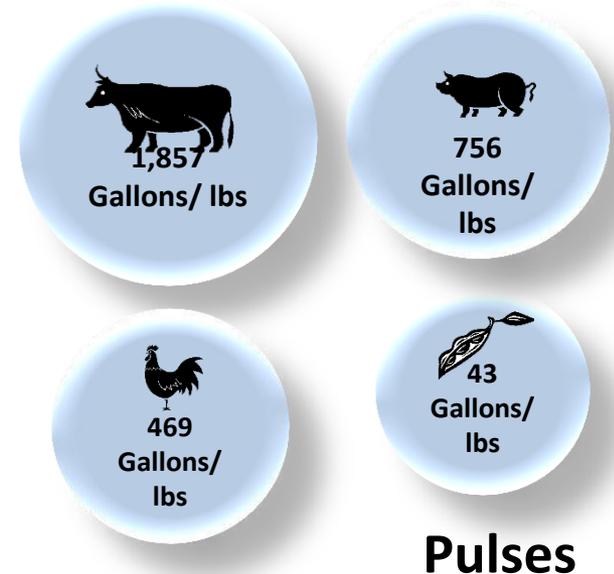
Greenhouse Gas and Energy
Pulses use half the nonrenewable energy inputs of other crops



Source: (Zentner et al. 2004)

Increased Water Use Efficiency

- **43 gallons** of water required to produce one pound of pulses
- **1,857 gallons** of water required to produce one pound of beef



Pulses

Source: Hoekstra and Chapagain, *Globalization of Water*, U. of Twente, Waterfootprint.org National Geographic, April 2010



Pulses in the Food System in India

- Majority of Indian population is vegetarian and pulses are the source of economical protein & essential nutrients.
- Economical downtrodden can not afford meat and thus consume vegetable protein / pulses
- Highly affluent section is also turning to vegetable protein due to health reasons



Case for Modernization of Pulses in India

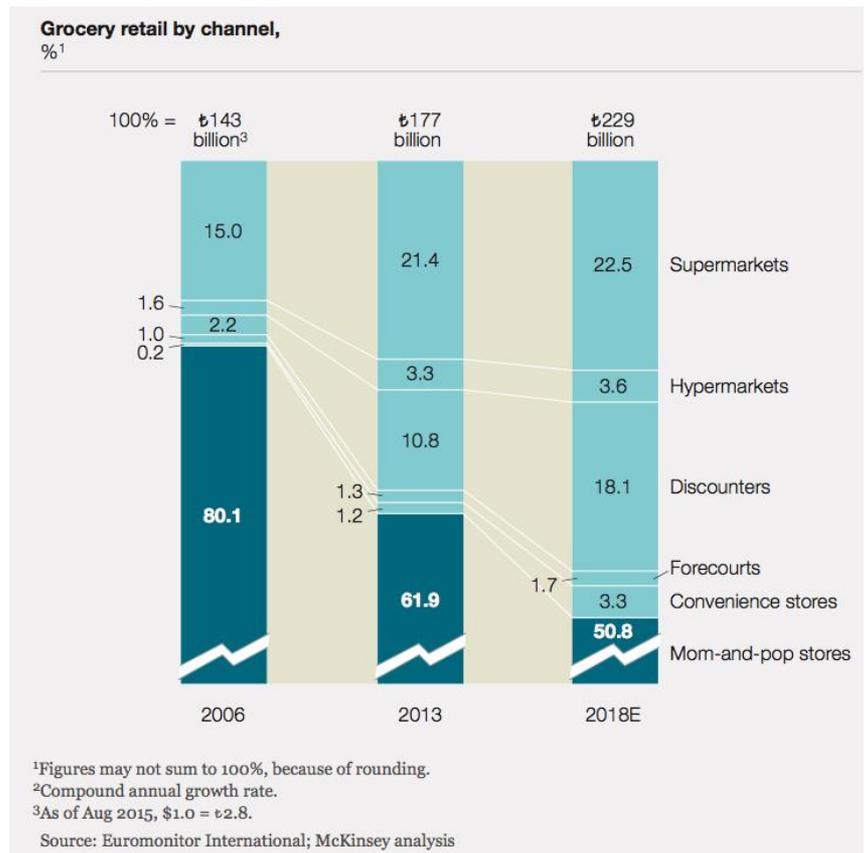
- How pulses are produced, processed and sold must follow the trends of modernization being driven by consumers including:
 - Supply/Demand, Import/Production and Tariff/Non-Tariff dynamics
 - Global weather patterns changing traditional production
 - Technology
 - Nutrition
 - Convenience
 - More disposable income
- Changes are already impacting in how pulses are produced (sustainable ag, global weather) and they will come in how retail distributes to consumers resulting in more changes to production
- India pulses processing sector is fragmented – everything from village hand mill to large modern processing facility
- Drive to modernize pulse sector in India will come from:
 - Consumers demanding convenience, nutrition and value
 - Farmers producing crops that maximize their return and create sustainable opportunity for themselves



Turkey as a case example

- Turkey is a Top 5 producer and/or exporter of pulses, pasta, grains
- Turkey is Top 10 in Europe in consumption expenditure and Top 5 in food spending
- Turkey is a major agriculture producing country with a large domestic market and regional supply requirements with a modern processing and exporting infrastructure
- Turkey has 80 million population, almost half below the age of 30 with a high domestic consumption potential. With a growing middle class and a rate of urbanization reaching 75%
 - Retail sector projected to grow 2.5 times (next 5 years)
 - Food retail expected average of 8% annual growth
- Domestic markets have aided in transforming food production and retail distribution - last 20 years have seen change from *bakkal* (similar to kirana) to supermarket – dominated by national chains (not international)
- Currently Turkey has almost 25,000 mass retail grocery outlets
- Domestic market strength and proximity to EU has driven agri-food prosperity

Retail is a driver of Food Systems



Source: USDA GAIN; McKinsey



India or Turkey?

STRENGTHS

- With its young and growing population, promises growth in both production and consumption of retail food items
- Consumer trend is shifting towards organized retailers
- Food is the most resistant sector against political and economic volatility because at times of crisis people may cut back on secondary needs like new clothes or entertainment, but do not change their food consumption
- Solid infrastructure in terms of distribution (logistics) and finance (banking)

OPPORTUNITIES

- Highly interested young population is open to new brands and products
- Tourism sector also triggers the growth in food and beverage sector
- The retail market has not yet matured nor been saturated which provides easier entrance opportunities for new products
- Organized retail is increasing its share every year presents the growth potential of the sector.
- Due to its strategic location, acts as a trade hub with its neighbouring countries

WEAKNESSES

- Demand for alcoholic beverages is affected by religion and very high tax rates
- High import duties are imposed on both agricultural and processed products
- High shelf fees charged by large chain stores lead to high costs for introducing new products
- Lack of official data and transparency affects business strategies- Traditional and cultural consumption habits affect consumers' preferences in their willingness to try new products or tastes.

THREATS

- Complex and extensive import procedures bring up the cost of imported products
- For confectionary items there is a risk of being copied by a large local producer and marketed under a different brand name
- Competition from neighbouring countries and regions that have proximity advantage as well as preferential tariff rates
- Economic and political instabilities and currency depreciation have made imported items more expensive
- Unregistered economy and counterfeiting may create unfair competition
- Turmoil in neighbouring countries affects trade to and from and the tourism sector

Source: USDA GAIN



India Retail Grocery - Kirana

- Estimated 12-15 million outlets, including push carts, wet market and kirana stores (50-200 square foot)
- Kirana provide employment for millions of Indian workers - opposition concerned that kirana store owners and workers would be displaced. Some note that kirana have advantages such as convenient locations, lower real estate costs, and services such as free delivery and store credit – This was same situation in Turkey but was overcome
- Complicated retail distribution e.g. some importers distribute to 10,000 small kirana – advantage and disadvantage at same time



India Retail Grocery - Modernization

- As pulses are the key consumption item for population in India, modernization of pulses cannot come without modernization of agriculture and retail
- This may lead to alleviate issues on food inflation and food security and modernize food systems overall – not just pulses
- Market size of food retail is massive (estimated at \$270 billion in 2011) and expected to grow. Next 10 years, the potential market for modern food retail could be 200 million consumers
- Growth of the sector is supported by farm groups as it gives a market for their products
- Over 3,000 modern grocery in India. Factors such as high real estate costs, high capital borrowing costs, shrinkage, high debt levels, training of qualified staff and a costly supply chain add significantly to operating costs and are challenges to further modernize retail
- Biggest challenge for modernization may be in Governmental policy on support of agricultural production to both support local production as well as global supply opportunities

Source: USDA GAIN; McKinsey



Opportunity for Modernization in India?

**Modernization of pulses and retail sector means the same thing in India –
Modernize food system overall**

- Use of pulses in these areas makes sense for India:
- Prepared food / Ready meals: Pre-prepared and ready-to-consume food products currently very limited in the market but present a great potential for the urban consumer.
 - Increase of middle class
 - More women join the work force
 - work hours are extended in a competitive business environment,
 - quick meal solutions based on traditional tastes
- Gourmet/Foreign Ingredients: Consumers' tastes changing as well as ingredients used in making these types of traditional dishes (e.g. pulse enriched pasta)
- Healthy Snacks: Healthy snacks to benefit the rising 'healthy consumption' trend (chips, crisps, crackers).



Conclusions

- Significant opportunities for the modernization of pulses in India to support
 - Local production
 - Consumer trends
 - Sustainable agriculture
- India agriculture and retail consumer markets are poised for a fundamental change that may positively impact pulse industry for decades to come

