



Prospects of Indian Agrarian Economy

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Indian Agrarian Economy – A Snapshot (1/2)

- Contributes US \$ 183 bn or 17% of India's GDP
- Agri and allied sector provides livelihood to 71% of country's population
 - Area under crops (net) 142 m Ha
 - Area sown more than once (gross) 193 m Ha
 - Irrigated Area 83 m Ha, 43% of Gross
- India's ranking in world's production

Sugarcane	India ranks 2 nd after Brazil
Cotton	India ranks 2 nd after China
Rice	India ranks 2 nd after China
Wheat	India ranks 3 rd after EU and China
Groundnut	India ranks 3 rd after China and Sub Saharan Africa
Rapeseed	India ranks 4 th , EU being largest
Corn	India Ranks 5 th , US being the largest producer

Indian Agrarian Economy – A Snapshot (2/2)



- India has a vast agri-processing sector

	No. of Units
Sugar Mills	566
Flour Mills	820
Oil Mills (excl. micro sector)	50,000
Solvent extraction Units	725
Veg-Oil Refining/Vanasapati	275
Fruit Processing	4,900
Rice/Pulses Mills	> 100,000

- Technology employed, however, ranges from vintage to the state of the art
- Erstwhile licensing policy is the chief reason for fragmentation
- Consolidation, mainly lead by technological upgradation, underway



Limitations of Indian Agriculture (1/2)

- Small holdings, average size is 1.33 Ha and shrinking, which limits
 - Investment
 - Use of technology
 - Economics of scaleand condemns agriculture to remain at subsistence level
- Crop productivity (except Sugarcane) is substantially low, even below world average.
[India Productivity comparison](#)
- Being arid to semi-arid region, rainfall and irrigation are extremely critical inputs



Limitations of Indian Agriculture (2/2)

- Floods regularly revisit several areas like Bihar, Orissa, Chhattisgarh and Eastern UP
 - unable to reap benefits of their endowment
- India has largest amount of irrigated land, but very low quantum of fresh water
 - Water use is inefficient and wasteful.
- Credit and input delivery infrastructure is poor and uneven
- Post harvest management, including marketing and warehousing, are primitive

India Productivity comparison

Sugarcane	World	India	Brazil
Mt/Ha	74	67	77

Wheat	World	India	China
Mt/Ha	3.0	2.8	4.7

Rice	World	India	China
Mt/Ha	4.2	2.3	4.6

Corn	World	India	US
Mt/Ha	5.0	2.2	9.7

Soybean	World	India	US
Mt/Ha	2.2	0.9	2.7

Rapeseed	World	India	EU
Mt/Ha	1.9	1.1	2.8

Peanut	World	India	China
Mt/Ha	1.6	0.9	3.4





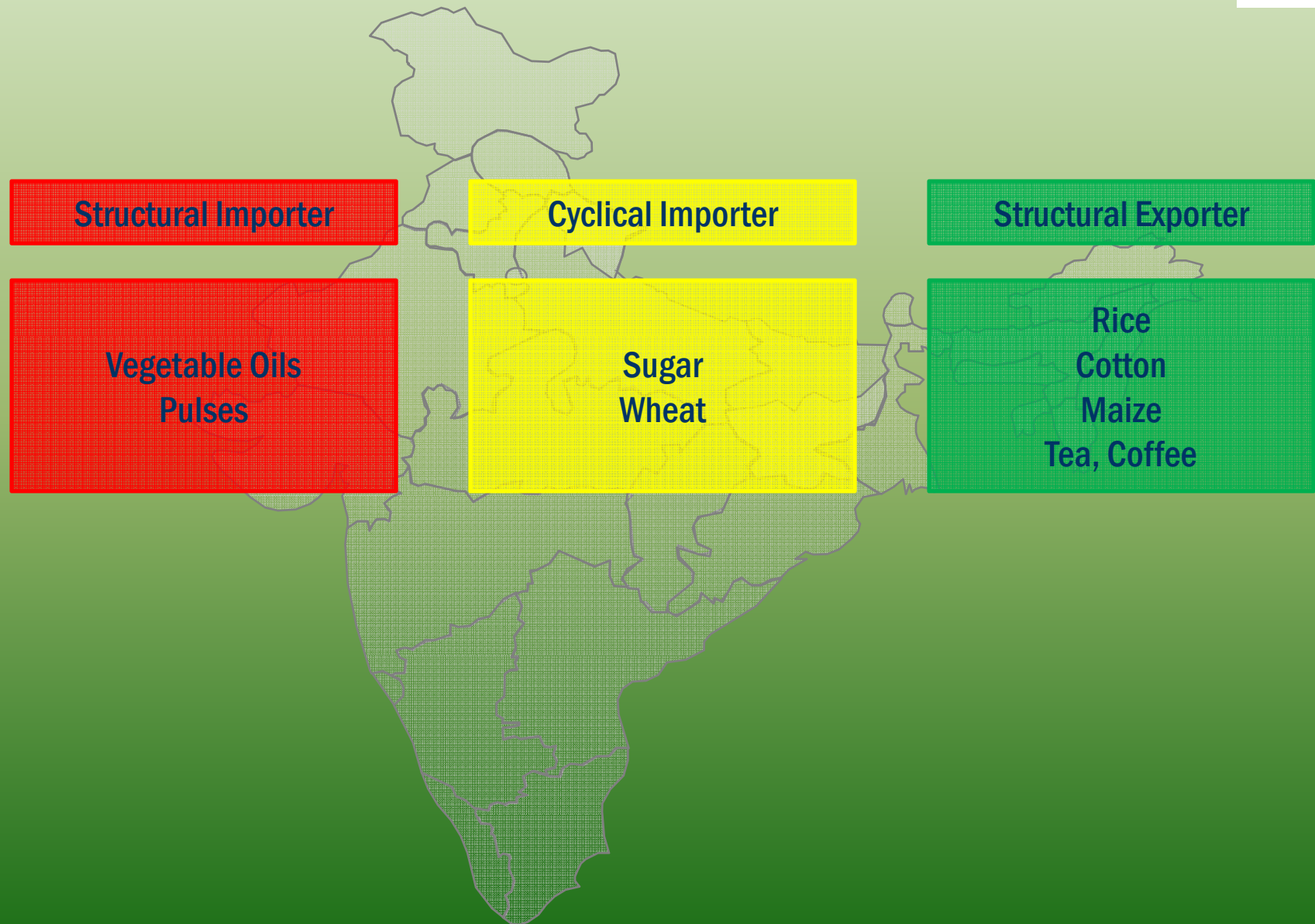
Expectations from Indian Agriculture (1/2)

- Over 1,150 m population, comprises
 - 22% below poverty line
 - 2% lack access to adequate food or are nearly starving
 - 46% of children below age 3 years are malnourished
- Rise in incomes and inclusive growth will rightly exert tremendous demand pressure on food & fiber
- Movement of 2/3rd of Indians from less than sub-Saharan level of nutrition (2,200 cal/day) to even South Asia's level (2,400 Cal/day), creates additional demand (in mmt) of:

Grains	20.0
Fruits & Vegetable	22.0
Sugar	2.0
Pulses	2.5
Vegetable-Oils	1.3

- Add to this the incremental growth in demand on 'business as usual' basis, which is annually about 2% for grains, 4 to 5% for other foods

Different Strokes for different crops



Opportunities for Business



- The sector's weaknesses give a clue to business opportunities in the areas of
 - Water resources
 - Agri-inputs/Agri-equipments
 - Agricultural infrastructure
 - Primary processing
 - Agri Exports and Imports

Water Resources (1/2)



- Irrigation is the biggest challenge
- India ranks low as receiver of fresh water flow
- Yet India has a huge irrigation infrastructure
- We are clearly
 - overexploiting scarce water resources; and
 - Using them irresponsibly

	Annual Fresh water Flow in m ³	Per capita availability
India	270	1167
Australia	492	2,444
China	2,170	2,812
USA	2,800	9,535
Canada	2,850	89,134
Brazil	5,418	29,460
World	43,607	6,872

Country	% of Arable Land Irrigated
India	43
USA	7
Brazil	3
Australia	4

Water Resources (2/2)



- River-valley projects have to remain in Government's domain
 - If privatized, pricing and price recovery of water would be a contentious issue
(The only privatization initiative, Nira-Deogarh, Maharashtra, was still-born)
- The way to go is what USA has done over 30 years:
 - Increased sprinkler irrigation by 20 m acres and micro-irrigation by 3.5 m acres
 - Reduced gravity irrigation by 15 m acres
- That, plus drip irrigation, will stretch our resources manifold and is the answer for India's situation
- An excellent business opportunity as India will have to focus on these aspects to manage irrigation

Agri-inputs is an attractive business



- There could be business opportunities in the areas of
 - Fertilizer production, import and distribution;
 - Development and production of hybrid and GM seeds
- Imports account for 30% of India's fertilizer consumption; 45% of imports are Nitrogenous fertilizer, 30% Potash and 20% Phosphates. Key area is interface with the Governments to cope with controls and realization of subsidies
- India follows a pro-GM policy. Over 70% of cotton crop is GM crop which has doubled cotton production in four years and increased productivity by 50%
- Low crop productivity levels offer excellent business opportunities for hybrid and GM seeds in many other areas like soybeans, pulses, rapeseed, wheat, vegetables

Agri Infrastructure offers opportunities



- Development of cold storage chain for handling/ storage of perishable crops
 - 30% of 220 mmt of fruits & vegetables rot every year
- Development of modern warehouses for storage of crops
 - Warehouse Act passed, awaiting notification of rules

Union Budget 2009 has extended 100% depreciation benefits for investment & NABARD has an ongoing soft loan scheme.

Primary Processing (1/2)



Fruits and Vegetables

- Use of preservation technology like cold chain and irradiation presents opportunity
 - 30% of fruit production in India is spoiled before reaching the market
- Processing still not 1% of the total production due to:
 - Consumer Habits – prefer fresh/unprocessed product
 - Complex and multi point APMC

Sugar

- Fragmented India sugar industry offers opportunities for consolidation and development into modern integrated complexes with power cogeneration, ethanol distillation, besides sugar production.

Primary Processing (2/2)



Poultry

- Produce most popular meat in the country, demand growing at 10% per annum
- Have a most efficient feed conversion ratio (5 times that of Cattle)

Vegetable oil

- India's domestic demand for vegetable-oils and oil meals growing at 5 % per annum, imports are about 5.5 mmt (this year 7.5 mmt due to low world prices). Incremental imports of vegetable-oils are about 300,000 mt per annum.
- Legal requirement to refine all imported oils and also, changing consumer tastes, makes vegetable-oils refining an attractive proposition
- Poultry sector intensifies the demand pull for soya meal, aiding the viability of soy-crushing industry (annual crush 9 mmt)

Agri Exports and Imports

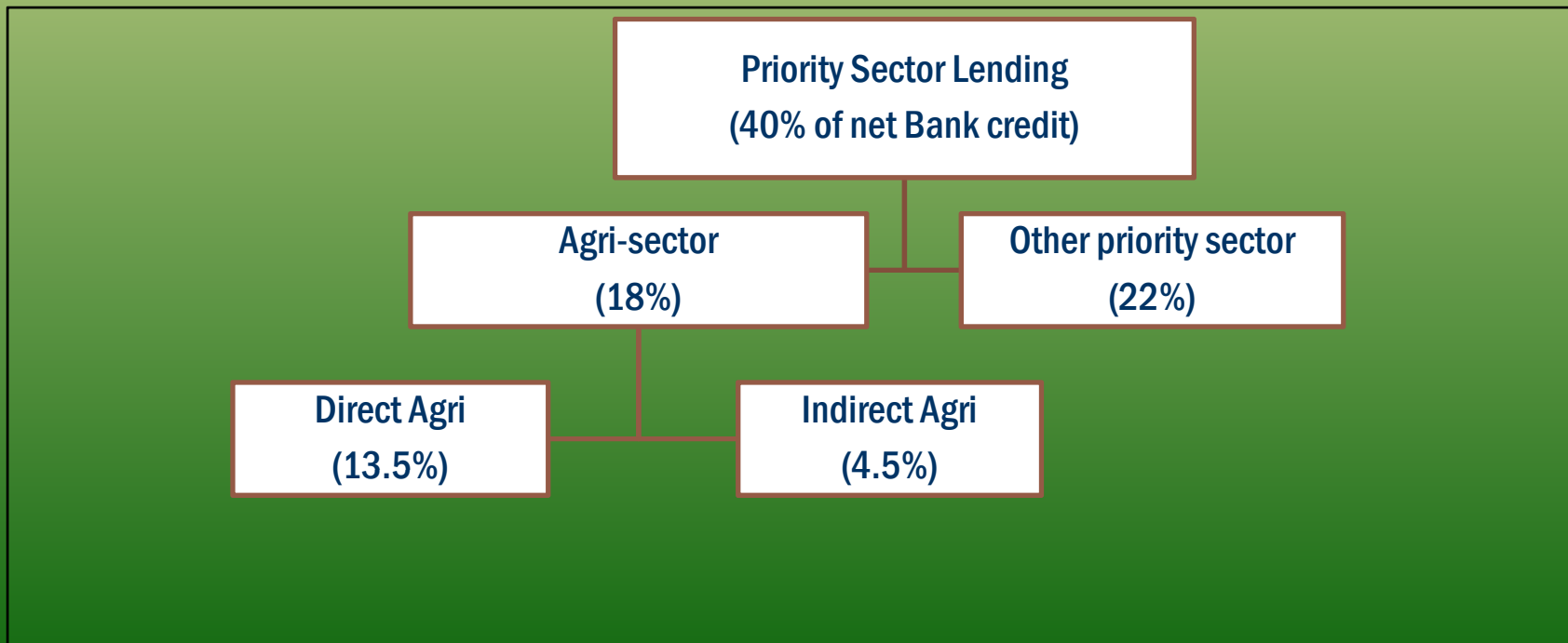


- Given the strong domestic demand and high cost of production, large scale agri exports are ruled out
- Yet, India has competitive advantage in exports of
 - Cotton, Corn, Soy meal, castor seed meal, Coffee, Tea, Riceand, going forward . . .

better production technology will help strengthen the advantage
- India is a structural importer of
 - Veg Oils 5.5 mn mt (7.5 this yr) and growing
 - Pulses 2.5 mn mt, and growing
- Import trade, logistics, risk management, trading are opportunities for business

Agri-Finance

- RBI mandates commercial banks to lend to priority sectors - Agri and allied sector
- However credit not reaching small farmers due to:
 - High cost of distribution for small size loans
 - High cost of collection and recovery
 - The modification of the Credit culture due to Govt. sponsored loan waivers



Government intervention



- Reason for high government intervention in Agri-sector
 - Food Security – Consumer more sensitive to price of food products than other goods
 - Higher dependence - Over 70% of the population depends directly or indirectly on agriculture for livelihood
 - Agri-sector bypassed in reforms, focus has been mainly on service and manufacturing sector

Attractivness of Agri-oppportunities



		Risk of Government intervention		
		High	Medium	Low
Market Attractiveness	High	Major irrigation Fertilizer	Sugar & Ethanol	Seeds
	Medium	Microfinance	Vegetable Oils Micro-Irrigation	Warehousing Cold storages Poultry
	Low	Agri -exports	Fruit & Vegetable Processing	Agri-chemicals Biomass Power

Thank You