

Quiet Revolution in India's Food Supply Chains

From paper by

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And ADB/IFPRI book forthcoming:

“The Quiet Revolution in Staple Food Value Chains in Asia: Enter the Dragon, the Elephant, and the Tiger,” (Reardon, Chen, and Minten, 2012) November 2012.

Preliminary points

- a) DOMESTIC supply chains in rice: 98% of rice in Asia (trade is 2%): focus on domestic
- b) Focus on rural to urban supply chains: urban food economy is roughly 65-75% of food economy in Asia

c) Focus on transformation of supply chains in all segments – downstream (retail), midstream (processing & wholesale), upstream (farming and input supply): rapid transformation in all 3

... post-farm gate segments (downstream + midstream) = 40-60% of food price cost formation

... as important to Indian food security as farm productivity

d) But the transformation is NOT evenly distributed: we find there are 2 rural India's:
... dynamic/commercializing zones (7-8 hours from Tier 1&2 cities – perhaps half of Indian food economy)
... less in hinterland areas

e) Transformation is driven by the “private sector” (traditional & modern): government direct intervention in only 7% of India’s food economy about 15% of input supply

f) Data from detailed large “stacked” surveys (IFPRI-MSU, supported by ADB, USAID, FAO, WB) of
... input shops, state stores & PACS, and RBHs
... farms
... rural and urban traders
... mills & cold storages,
... urban retailers (traditional and modern)
... in UP, MP, AP, Bihar

1. Downstream: Retail

1.1. Rapid change in Downstream Segments

a) **Supermarket Revolution** (49% sales growth per annum → 5x rate of GDP growth)

.... Penetration of staples (7% in Delhi)

... penetration of fresh produce (5% in Delhi) →
but early by international standards

b) Food security effects: cheaper staples in Delhi in supermarkets compared with traditional retail

1.2. But constraints downstream

- a) Retail FDI not yet liberalized
 - b) And midstream constraints to retail procurement system modernization (APMC not fully reformed; Storage Control Orders under Essential Commodity Act)
- ➔ Means India foregoes what China is seeking (Ricardian advantage of lowering food prices via modern retail leads to cost competitiveness in nonfarm sectors)

2. Midstream (Processing, Wholesale)

2.1. Rapid change in Midstream segments

2.1.1. Modern Sector Midstream

- a) **Processing:** Rapid growth, concentration, and capital/labor increase
- b) Rise of modern wholesale/logistics companies
- c) Big retail and big processing growing in symbiosis
- d) Nascent direct sourcing (collection centers) and contract farming: pays farmers well

2.1.2. Quiet Revolution in “traditional” midstream

- a) **Dis-intermediation in wholesale** (massive decline of rural broker/village trader role with shortening of chain, direct sale by farmers to mills and city mandis)
- b) **Rapid development of cold stores** for potato in UP and Bihar, raising farm prices and reducing seasonality for consumers

... displacing (regardless of APMC regulation...) the mandis (as venue for intermediation)

... providing credit to farmers

c) **Disappearance of tied credit-output markets**
of wholesalers with farmers, freeing farmers to
choose best buyer

... in UP and MP surveys, only 2-5% of crop
market transactions linked to credit from traders
(advances)

2.2. But constraints midstream

- a) Lack of infrastructure such as power grids key to cold stores: UP, 25%, Paras Dairy
 - b) Partial/slow liberalization of wholesale markets (APMC reform partial)
- ... compared to China which privatized/liberalized wholesale markets and using them as logistics modernization dynamos now

3. Upstream: Farming & Input Supply

3.1. Rapid change in Farming

a) Context (contrary to common view...):

... big difference between dynamic areas & hinterland areas: **TWO RURAL INDIAS**

... **sharp inequality in farm sizes and non-land asset** distribution; in dynamic areas, farm land concentration (“30/70 rule”)

b) Most of technology & market transformation concentrated:

... dynamic/commercial areas (West & Central UP -- vs East)

... semi-medium, medium, small – vs marginal

... small farmer in dynamic zone better off than medium farm in hinterland zone

c) **Farming intensification**, examples:

... Quality differentiation and hybrid diffusion in rice

... horticulture boom (golden potato-triangle)

... rapid uptake of pesticides and herbicide
(linked with nonfarm employment and
opportunity cost of time)

3.2. Input Markets Development

a) Rapid development: Farmers linking to input markets

... Land rental markets

... farm chemical markets

... Water markets

... Cold storage market

b) PRIVATE: State/coops play MINOR role:
market share of 5-25%

c) **DE-LINKED from CREDIT MARKET**: tiny share of input transactions with credit

d) **STARTING to Modernize**: RBHs rise (but still 10% share in dynamic areas)

3.3. Upstream Challenges

a) Asset-poor (marginal farmers) are participating less in the change/benefits of supply chain modernization

... while the asset-elite of small farmers and medium farmers are so far the winners

b) Subsidized-Farm services distribution is skewed:

... concentration of (subsidized) tubewells (UP): 80% to medium, sell half of water to small farmers.

... concentration of (subsidized) fertilizer & seed (marginal/small 70-80% of population, 20-30% of state/coop store sales)

c) **Public credit schemes, skewed:**

... KCCs in UP: 30% of farmers

... 17% of marginal to 58% of medium farmers

... 35% in west, 29% in east

... total loan flow: 75% in the west, and other 25% in center and east

d) **Extension, skewed distribution**

... UP: 18% of farms used extension (public or private):

... 18% in west, 30% in center, 7% in east.

... in UP only 7% of any extension was from state extension officers: means touched 1% of farmers

4. Conclusions

- a) Rapid change and ferment/churning
- b) Modern sector AND transforming traditional chain
- c) Implications for consumer food security and farmer incomes
- d) Importance of off-farm segments of supply chain
- e) But nagging constraints in public goods and regulations
- f) Need differentiated strategies for the TWO INDIAS & marginal farmers vs. others