

Transformative Innovation in Food Value Chains in Africa & Asia

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Transformation of and innovation in value chains in Africa and Asia has

... NOT been gradual

... but instead sudden, rapid, abrupt

... image of tidal wave

1. Rapid Food system transformation driven by meta drivers & CONFLUENCE of 5 trends

Meta drivers

- **income growth**
- **policy liberalization**
- **Public infrastructure investment**
- **Massive private investment (FDI & domestic)**
- **technology change and transfer (in each segment of supply chains) and cross cutting (e.g. internet)**

PULLED by Downstream demand

1) urbanization

2) diet change in urban and rural areas

“FACILITATED ” by Midstream & Downstream

**3) Transformation of the “Hidden Middle”:
processing, wholesale, logistics (large & SMEs)
... and retail (supermarket revolution! FF!)**

FED by upstream

**4) Farming intensification, commercialization,
diversification**

5) input value chain development

3. Causing a Modern Revolution in value chains

... FDI & large scale domestic investment

... supermarket revolution

... large processors

... modern wholesalers

... big seed/chemical companies

... big feed companies

4. Quiet Revolution in the “Hidden Middle”

4.0. Overall

a) Context: stages of system transformation:

Traditional → transitional → modern

b) Most of Africa & Asia food systems in “transitional” stage

... undergoing recently a sudden shift from traditional to “transitional”

... based on domestic markets & domestic investments (not FDI or exports)

4.1. Structural changes

- a) Longer supply chains driven by urbanization**
- b) Diversification & value added in supply chains driven by diet change**
- c) Proliferation of 10's of 1000's of SMEs in processing, wholesale, 3PLS (transport, warehouse, cold storage)**

... the shift from traditional system to these dynamic SMEs is the most widespread structural innovation in Africa & Asia

d) Structural change: Bangladesh aquaculture value chain

... 1500% increase in aquaculture product in 25 years (from 30 to 70% of fish consumption)

... 600% increase in fish feed segment in past 10 years

... 300% increase in 10 years in SMEs in the HIDDEN MIDDLE: in wholesale, hatcheries, logistics

➔ Fish farming ALL for domestic (mainly urban) market ... not exports

- e) Structural change: Nigerian poultry complex**
- ... development of North-South maize supply chain, 1500 km**
- ... 600% increase in maize based feed sector in past 10 years**
- ... imports only 15% of consumption**
- ... huge jump in women based SMEs supplying small towns and secondary cities**

f) India: potato cold storage boom

... Agra (Taj Mahal area) potato supply chain to Delhi, grown massively in 20 years

... 1999: 99% of farmers use traditional storage, 1% use modern cold storages

... 2009: 1% of farmers use traditional storage, 99% use modern cold storage: INNOVATION!

... Delhi potato supply from tiny to 2/3 from cold storages

... confluence of Delhi rise, roads, electricity, new storable varieties, irrigation, SME private investment

4.2. Conduct change

a) **Traditional systems up-ended, examples**

... tied output-credit arrangements with traders, are disappearing (15,000 interviews in Asia, found 2% involved in tied credit; 8,000 in Africa, 3% in tied credit)

... shift from traditional rural brokers to town-based wholesalers & 3PLS

→ 85% of volume of maize traders in Nigeria moved via 3PLS (big gap in research)

b) The most widespread deep innovation is NOT high-tech, it is basic:

... shift from pastures to feed

... shift from field storage to refrigerated

... from capture to enclosure (chicken coops, fish ponds)

... with rapid development of input supply chains

→ 90% of small chicken farmers in Nigeria using anti-biotics

→ 70% of small chicken farmers in Nigeria and 80% of Bangladesh using commercial feed