



Dynamics of Agricultural Markets and Trade: Poverty and Environmental Impacts

“Markets, Trade and Poverty Reduction” Seminar

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Why Talk About Agriculture in this Seminar?

- In most LDCs, ag still contributes at least 15% of GDP, sometimes much more (e.g. Benin 36%, Nicaragua 29%, Vietnam 22%)
- Both extensification of agriculture (e.g. cotton in West Africa), and intensification (e.g. high value crop or livestock) can have negative impacts on the environment
- Despite growth in NTAE products, which tends to occur near ports and/or cities, agriculture remains a largely rural sector
- While urban poverty is rising, on the whole poverty is still rural (75% in Sub-Saharan Africa and Asia, less in LAC)
- *So what happens in agriculture matters greatly to both poverty and natural resources management*

Major Themes

1. Agriculture and the environment are intimately connected
2. Agriculture is the best engine for rapid, pro-poor growth
3. Agricultural exports fuel sectoral growth
4. The determinants of export-led agricultural growth are actionable
5. Emerging standards (including environmental) are increasingly important in agricultural trade
6. Key market forces are changing the structure, conduct and performance of agriculture and trade
7. This all has great implications for development policy, strategy, programming and implementation

Many Negative Interactions Can Occur Between Agriculture and the Environment

- Conversion of marginal or fragile lands
 - Degradation of soils
 - Nutrient pollution
 - Depletion of aquifers
 - Habitat fragmentation
 - De-vegetation
- Contamination of natural resources (effluents, agrochemicals, waste)



Source: Adapted from Sara Scherr, The Relation Between Poverty and Resource Degradation, Poverty and NRM Seminar #1, October 2004

Yet There Can Also Be Positive Interactions...

+ Industries based on renewable natural resources

- + Raw silk
- + Brazil nuts
- + Shea butter
- + Marula oil

+ Natural inputs

- + Beekeeping
- + Biopesticides
- + Sulfur, lime, humus, etc.

+ Restorative agriculture

- + Nitrogen-fixing crops
- + Re-stocking of fish

+ Leisure/aesthetic/cultural values, e.g.

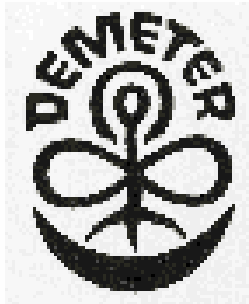
- + Coffee tours
- + Recreational ponds
- + Game farms/parks
- + U-pick fields

The “More Eco-friendly” Technologies Have Tried to Emphasize the Positive & Reduce the Negative

Main Approaches to Sustainable Agriculture

1) Organic farming

2) Biodynamic agriculture



3) Biological farming

4) Nature farming
(Regenerative agriculture)



Shared Criteria for Success

➤ Environmentally sound

➤ Economically viable

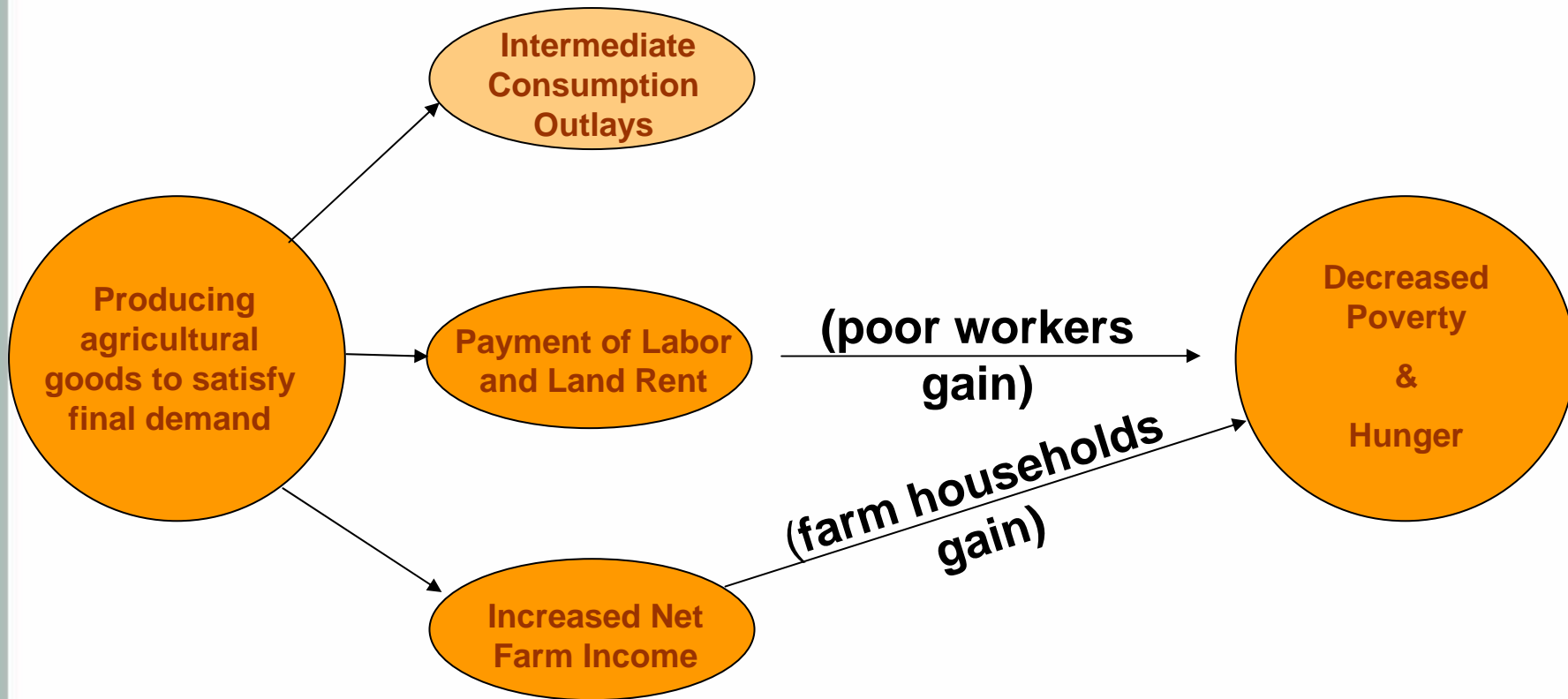
➤ Socially acceptable

Source: Steve Diver, Towards a Sustainable Agriculture, New Renaissance Magazine, Vol. 6. No. 2, 2003

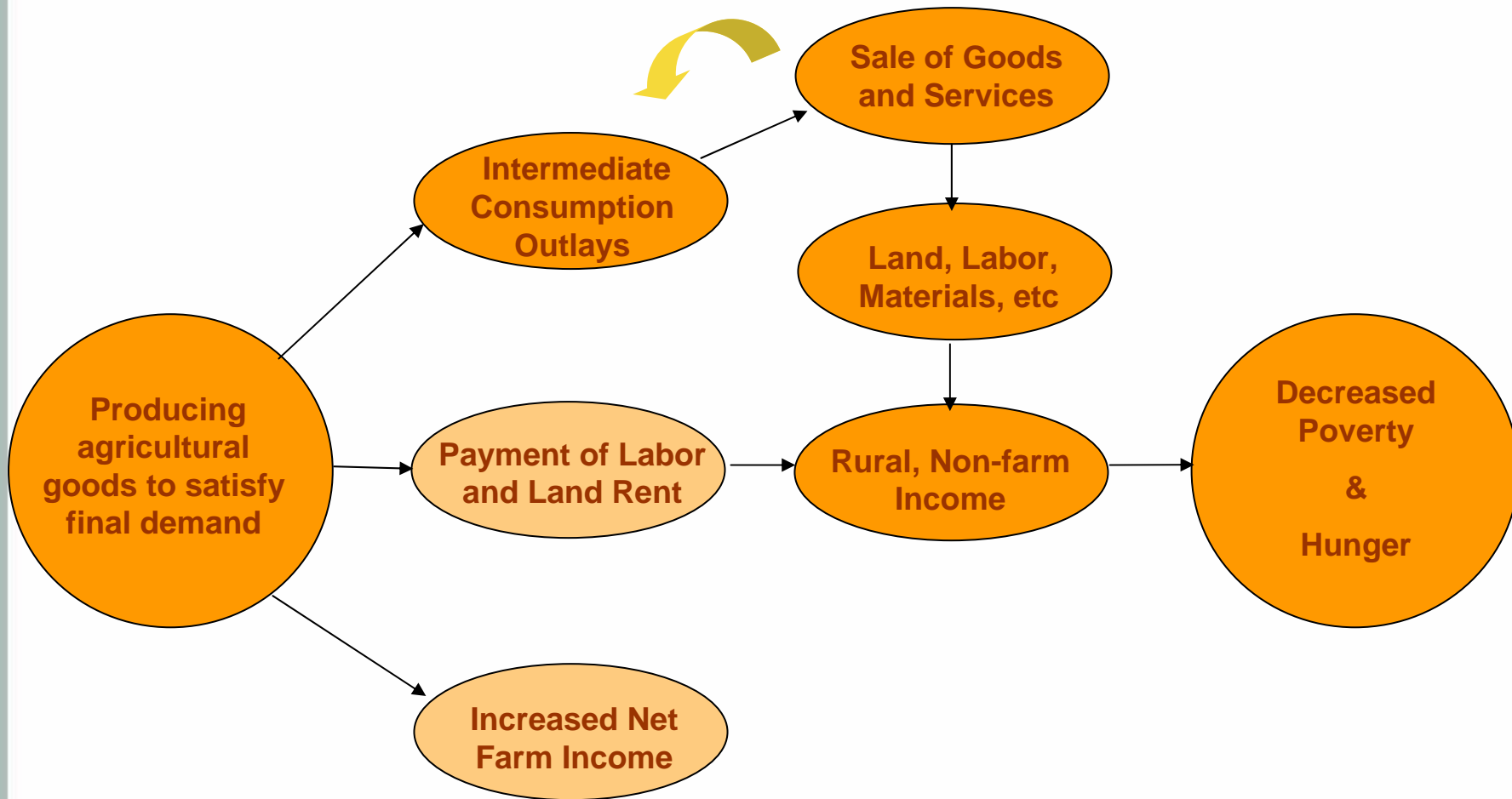
Expansion in Commercial Agriculture and Trade both Tend to Accelerate Economic Development

- Growth is good for the poor (Dollar and Kray)
- Openness to trade is correlated with faster growth (Hoekmann)
- The structure (urban vs. rural, sectors) of growth matters (Mellor)
- Agriculture is more pro-poor than (say) textiles and apparel because of where it occurs, labor intensity, and impact on food prices
- Very few countries have had rapid economic growth without ag growth preceding or accompanying it (Pinstrup-Anderson)
- In sum, agriculture is the most effective and pro-poor engine of growth in LDCs, except those that have significant mineral or fossil fuel resources, and those where access to/control over productive land is highly skewed (Delgado)

Agricultural Growth Generates Direct Impacts on Farm Households and Farm Workers



Growth in Commercial Agriculture Especially has Indirect Impacts, Via Goods and Services

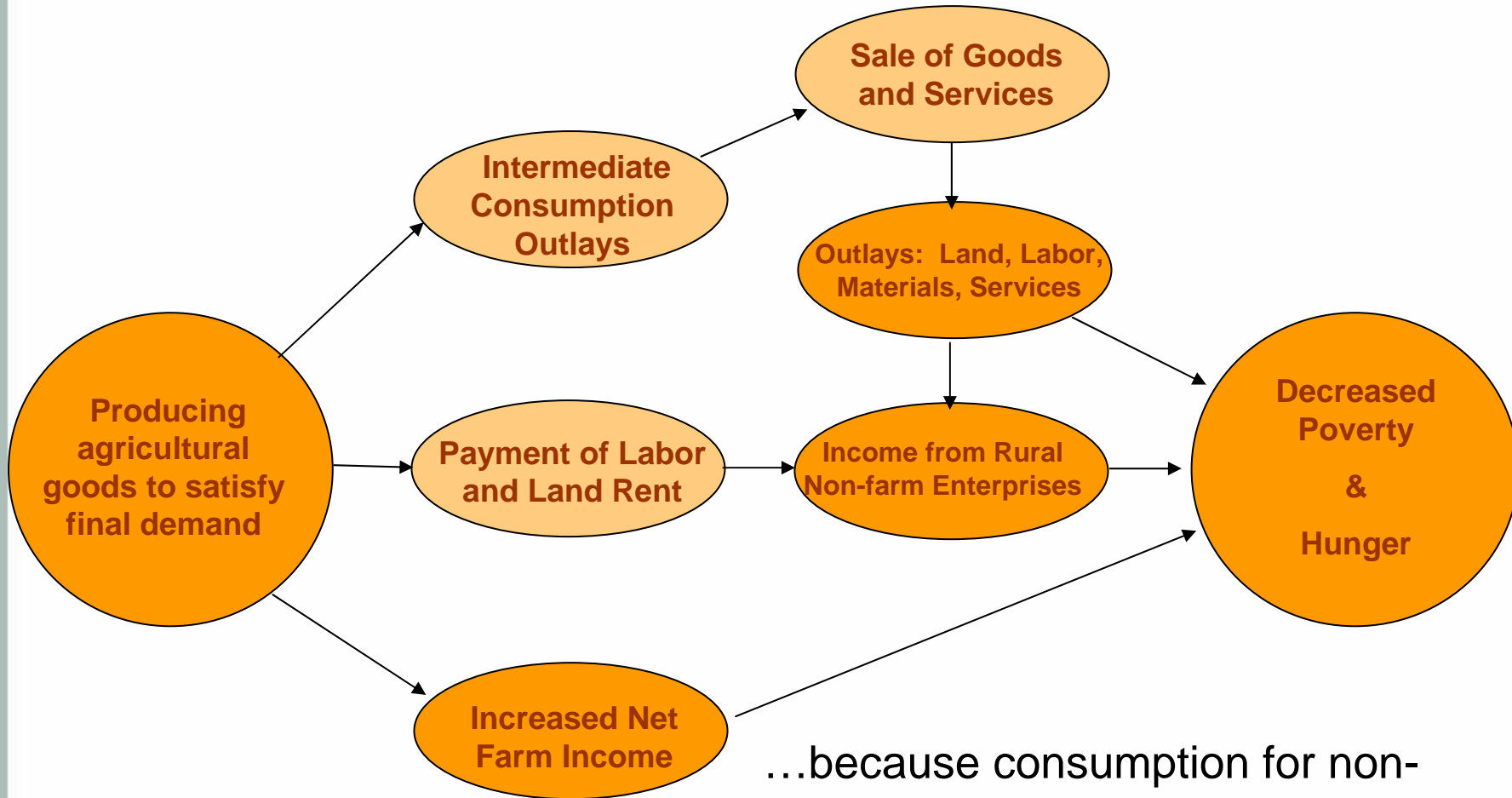


The Multipliers From Agricultural Growth Can Be Substantial, Especially for the Rural Poor

- ***Direct effects of growth:*** production changes associated with the initial change in final demand
- ***Indirect effects of growth:*** production changes in backward-linked industries caused by the changing input needs of directly affected industries
- ***Induced effects of growth:*** changes in regional household spending patterns caused by changes in household income generated from the direct and indirect effects.

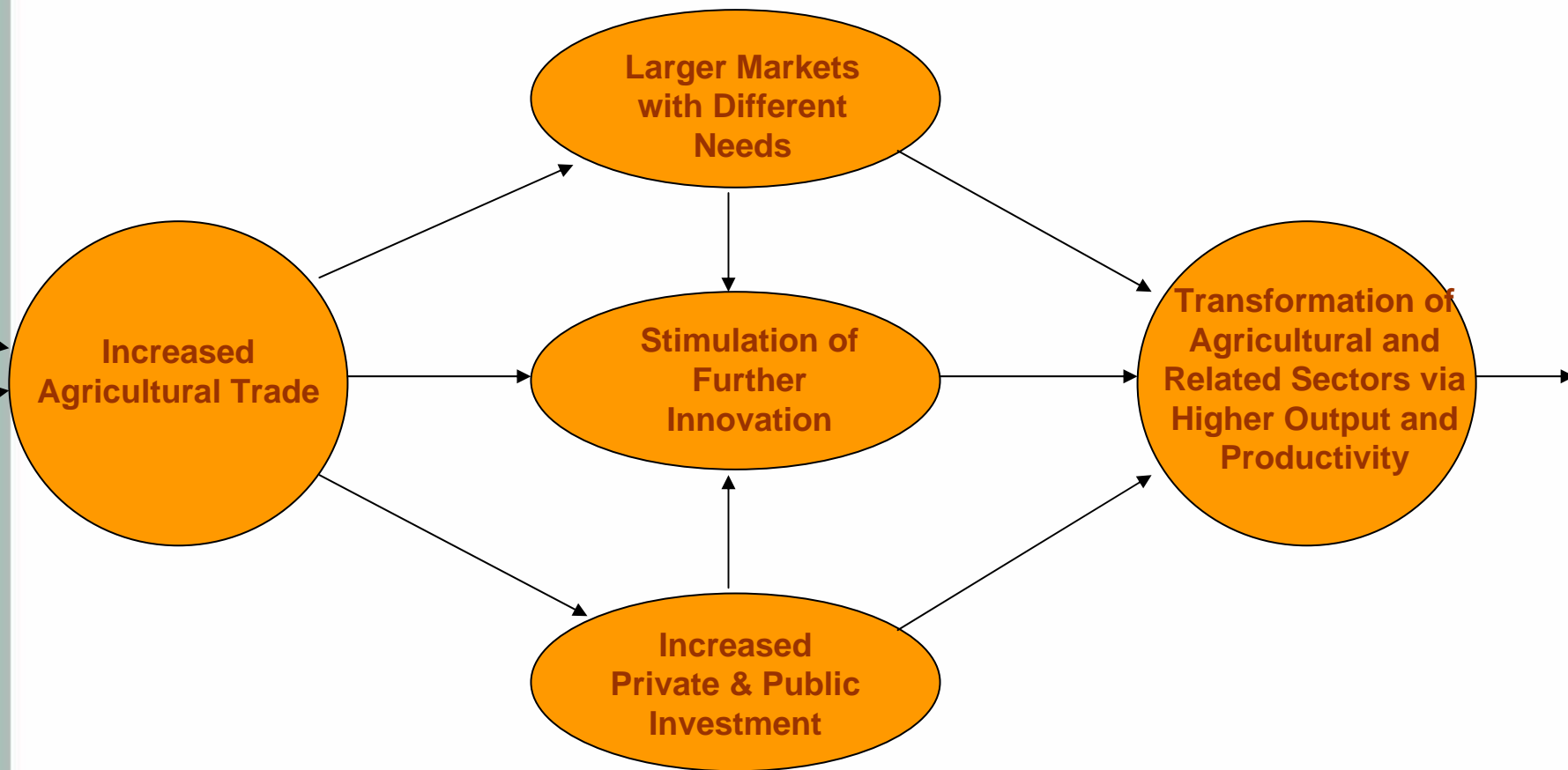
Source: Lindall and Olson, The IMPLAN Input and Output System, MIG Inc
ftp://plum.he.net/pub/implan1/documents/implan_io_system_description.pdf.

Induced Impacts Arise From Consumer Spending By Farmers, Workers, Micro-entrepreneurs...

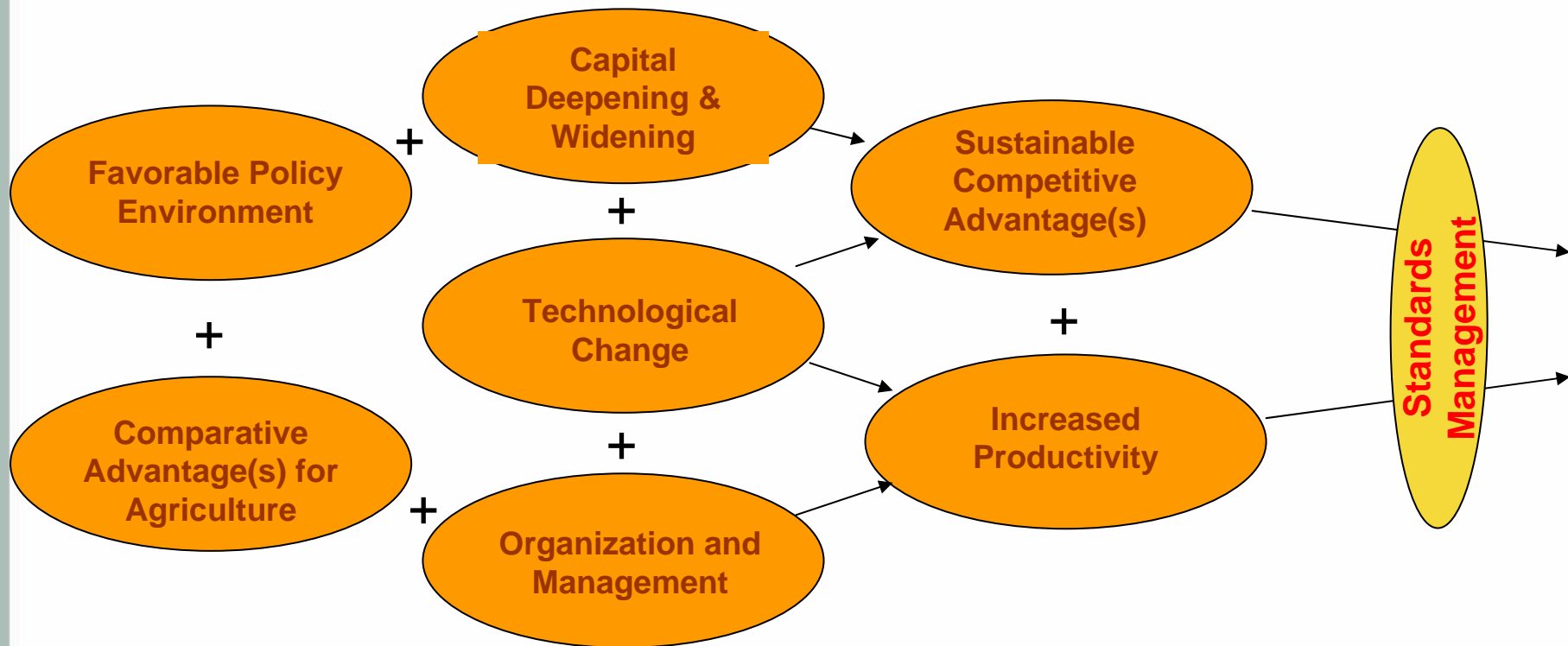


...because consumption for non-tradables (and some savings or investment) occurs locally

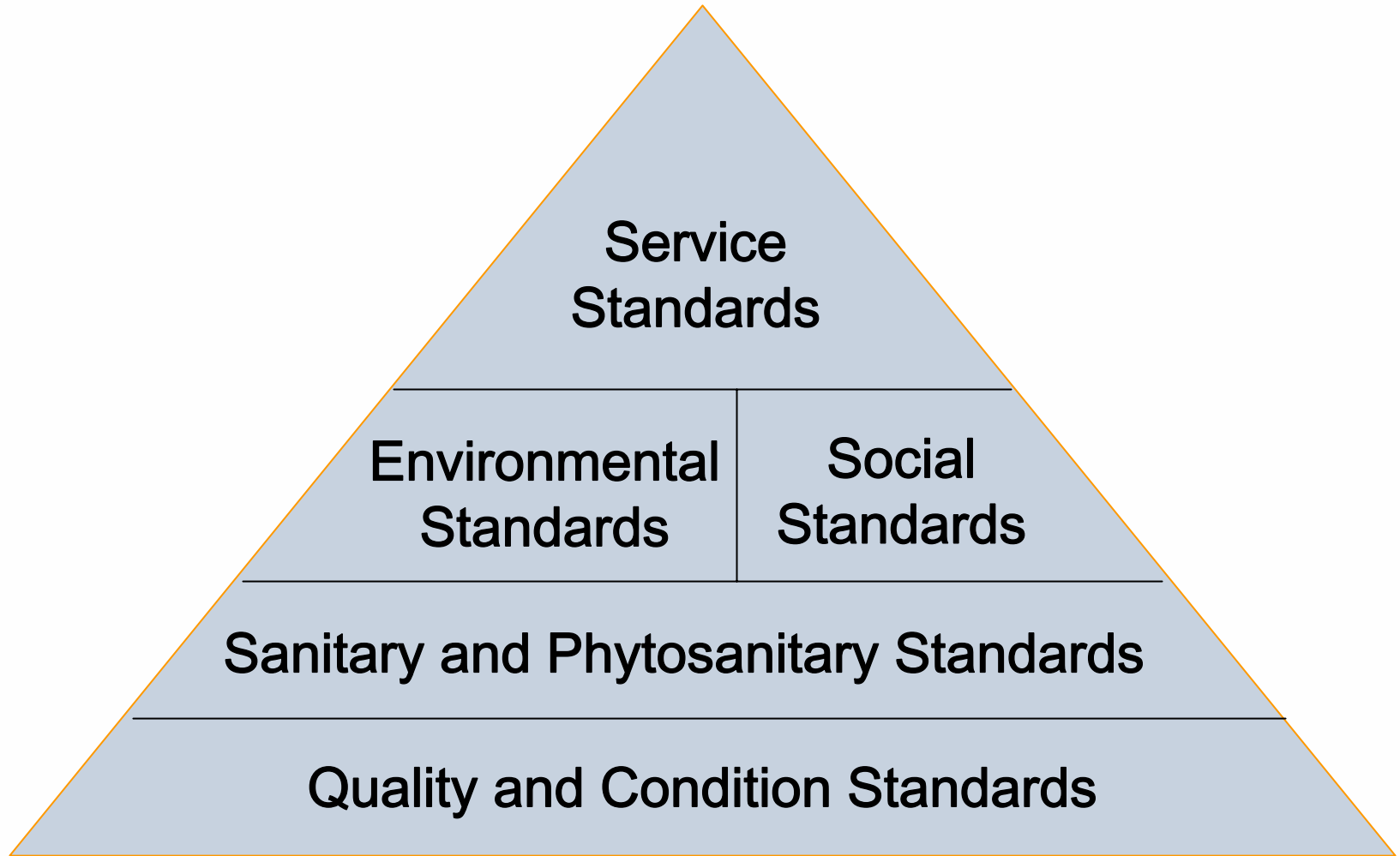
Agricultural Exports (And Also Imports) Fuel Sectoral Growth



The Determinants of Rapid, Export-led Agricultural Growth are Fairly Well-Known



Standards are Changing the Rules of the Game as Larger Volumes are Procured at a Distance



Market Forces at the Consumer Level Affect the Structure, Conduct, Performance of Agriculture

- **Developed Markets**

- Aging of the population
- Slowdown in population growth in general
- Rise in share of ethnic groups due to immigration and faster birth rates
- Declining share of disposable income for food
- More travel and exposure
- Desire for variety and convenience
- Desire for healthy food

- **LDC Markets**

- Faster population growth
- Youth bubble
- Increases in disposable income for middle class
- More travel and exposure
- Dietary upgrading toward fish, meat, poultry, produce
- Urbanization of the population

Market Forces at the Industry Level Also Affect Ag Sector Structure, Conduct and Performance

- On-going consolidation in chain stores, foodservice firms and food processors require buying offices to handle much larger volumes with fewer people
- In UK at least, category management is being outsourced to leading suppliers, whose decisions control access to the major retail chains
- Fewer major exporters and importers
- Elimination of middlemen that don't add value
- Prices become less volatile, but possibly lower over time

There Has Been Rapid Evolution in the Way Food Trade Is Structured and Conducted...

e.g season-long program between grower/shipper and chain, special packaging, stepped or fixed price, delivered basis

Going Direct

Multi-year Collaborative Relationship

e.g. exclusive marketing deal between grower/shipper and importer/distributor, with 50/50 split of profits after costs

Season-long Programs

e.g. one half of total production, from grower-shipper to importer/distributor, with minimum price guarantee

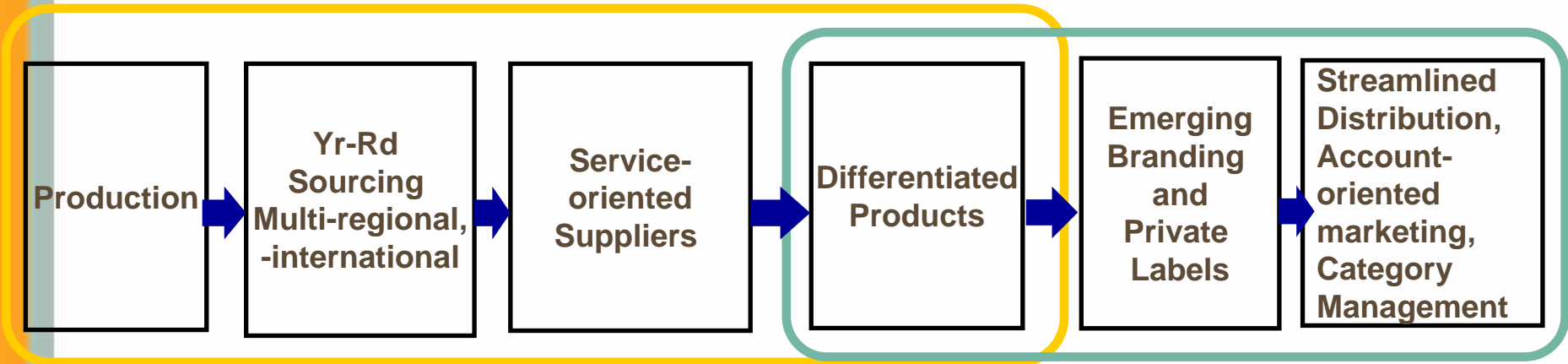
Volume-bound Deals

e.g. 250,000 boxes of mangos from exporter to receiver, price for each load set FOB port of exit

Spot Transactions

e.g. single load of mangos from exporter to commercial sales agent, shipped on consignment,

...As Cost Driven, Shipper-Controlled Supply Chains Transition to Buyer-Controlled Chains...



**Shipper-controlled,
Cost-driven Supply Chain**

**Buyer-controlled,
Profit-driven Supply Chain**

Adapted from Rabobank, Mexico



...That Are Integrated and Coordinated

- Increasing use of partnership and preferred supplier agreements
- Shared strategic planning processes
- Collaborative product development (new forms, presentations, line extensions)
- Joint production and delivery scheduling (even across suppliers who used to be competitors)
- More efficient logistics and distribution (chartered carriers, dedicated warehouses, Efficient Consumer Response, in-store replenishment)
- Seamless information flow via electronic data interchange
- Joint marketing, promotional and merchandising efforts (grow the category, promote the brand, shave peaks in supply)

How Is This New and Different?

1. Longer-term vision
2. More stable relationship between two companies, not based so much on personal relationship between salesman and buyer
3. Joint responsibility and accountability
4. Bottom line is profitability and growth of the category as a whole—year-end, not weekend results
5. Fewer players control more of the volume
6. Heavy emphasis on enterprise-wide use of Information Technology
7. Shared staff, dedicated facilities

What Exactly is an Agricultural Supply Chain?

- Extended enterprise that comprises the entire set of processes and activities required to produce a food or agricultural product and then deliver it to a target market
- The term “produce” encompasses growing, transforming, or manufacturing
- The entire chain goes from “farm to fork,” but development projects are usually concerned with a subset of links within the chain
- For the chain to work, numerous supporting activities are also required, such as input supply and transport
- Good access to factors of production is critical to success

A “Supply Chain” is Not Synonymous with “Value Chain”, Because...

- Value chains are concerned with what the market will pay for a good offered for sale
- The main objectives of value chain management are to maximize gross revenue and sustain it over time
- Supply chains are concerned with what it costs and how long it takes to present the good for sale
- The main objectives of supply chain management are to reduce the number of links and to reduce friction (bottlenecks, costs incurred, time to market)

Weaknesses of Small Farmers in Global Supply Chains for Food and Agricultural Products

- Shortage of capital and lack of collateral with which to borrow
- Lack of access to technology
- Difficult access to good land
- Environmental degradation, especially soils and water
- High pest/disease pressure in tropical and subtropical areas
- Inputs often not available, or late
- Power usually expensive
- Time, distance and cost to market
- Transport infrastructure and services often inadequate
- Small scale of farm units, difficulty delivering volumes needed
- Inability to speak English
- Lack of know-how and know-who for export markets
- Policy and enabling environment
- HIV/AIDS scourge

Strengths of Small Farmers in Global Supply Chains for Food and Agricultural Products

- + Vocation for agriculture
- + Low wage rates, and after training, low cost of labor
- + Good growing conditions for some crops
- + Extended growing season in tropical and subtropical areas
- + In some cases, low cost of production
- + Lack of options means often means strong motivation
- + In many places, a tradition of working together (e.g. “minga” in Ecuador and Peru)
- + Nearness to growth market of the future for food products, which is developing countries in general, and urban markets in particular



Small Farmers Can Still Aspire to Participate in Global Supply Chains But They Will Need to:

- ✓ Better understand markets and marketing
- ✓ Identify value chains worth developing
- ✓ Eliminate friction in the corresponding supply chains
- ✓ Select and deal with export catalysts and channel captains
- ✓ Comply with official and commercial standards of all kinds
- ✓ Generate the required volumes
- ✓ Assimilate enabling technologies
- ✓ Add value once they have penetrated a market

The Trends Noted Above Have Great Implications for Development. We All...

- Need to recognize and understand what major markets want and expect
- Need to grasp the complexity of interactions between agronomic, biological, physical, economic, social systems
- Need to take whole range of emerging standards (not just environmental) into account when designing interventions
- Need to take value chain and supply chain approaches to development of clusters and deals
- Need to be creative to help small farmer-oriented agriculture and other natural-resource based economic activity be more productive, competitive, and sustainable