How Food Standards and Global Value Chains are Transforming Agricultural Development

“Linking (Rich) Consumers to (Poor) Producers”

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Standards and certification are nothing new. They exist since the beginning of trade.
Babylon Laws – 4000 years ago

«If a wine-seller (...) makes the measure for drink smaller than the measure for corn, they shall call that wine-seller to account, and they shall drown her in the water.»

The Code of Hammurabi
Babylonian King, c. 1750 BCE
The Ten Commandments – 3500 years ago

« Do not use dishonest standards when measuring length, weight or quantity. Use honest scales and honest weights »

Holy Bible, Leviticus, Chap. 19, verses 35–36 (c. 1500 BCE)
Greece – 2500 years ago

Laws in Thasos, a Greek island reknown for its wine:

*prohibit the dilution of wine with water*

and

*forbid that small quantities of wine are sold in large amphorae.*
Private Standards in the Middle Ages
France, 1292

«Whoever puts into beer ... bay, pimento, or resin is to be fined 20 francs . . .

for such things are bad for the head and the body, for the healthy and the sick.»

Statute of the Paris Brewers, 1292
Recently:
More, More stringent, More widespread

Total amount of SPS notifications to WTO

GlobalGAP producers

Public

Private
Recent Transformation of Global Agri-food Value Chains

1. After WW II: State-controlled VC

2. 1980s and 1990s: Liberalization & privatization transformed value chains (with major disruptions in some countries)

3. Past 20 years: Rapid growth of private sector standards / certification and value chains
The Growth of Standards & Value Chains
(Domestical & international)

- **Drivers:**
  - Economic reforms
  - Income growth
  - Urbanization
  - Foreign investment (FDI)
  - Trade

- **Triggers:** Crises and Scandals!
One Example of Crises and Food Standards
“Country Life Comes to Standstill”

Foot and Mouth Disease (FMD) UK in 1995-6
Belgium 1999
Dioxin crisis
“Up to 8,000 additional cancer deaths”

“Total Chaos”
Food Safety Crises Transformed
EU Food Standards (and the world’s)

• 2002: Basic EU Food Law Regulation

• European Food Safety Authority (EFSA)

• “From Farm to Fork” approach: traceability and certification requirements throughout the value chain
Rapid Growth of Food Standards

Total amount of SPS notifications to WTO

GlobalGAP producers

Private

Public
Impact of Standards for Development: The Role of Global Value Chains

• Even if there are no/low standards/certification requirements in poor countries, developing country farmers may still be affected by “high standards” through global value chains

=> “Linking Rich Consumers to Poor Producers”
(Swinnen and Vandeplas, JGD, 2011)
## Changing structure of trade

### Product Share in Agri-Food Exports from Developing Countries (%)

<table>
<thead>
<tr>
<th>Product Category</th>
<th>1980</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tropical products (Cocoa, tea, coffee, sugar, …)</td>
<td>39.2</td>
<td>16.7</td>
</tr>
<tr>
<td>Temperate products (Meat, milk, grains, …)</td>
<td>28.8</td>
<td>27.0</td>
</tr>
<tr>
<td>Seafood, Fruit &amp; Veggies</td>
<td>21.6</td>
<td>44.1</td>
</tr>
<tr>
<td>Other Processed (tobacco, beverages, …)</td>
<td>10.4</td>
<td>13.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Horticultural exports from developing countries

Export value (1 million current USD)

- Africa
- Asia
- America

Graph showing the export value from 1995 to 2013 for Africa, Asia, and America.
Another Example of Scandals and Food Standards

• In 2000-01: British press report on child/slave labor in West African cocoa production → Public outrage

• Harkin-Engel Protocol (embodied within the ICI):

Cocoa-chocolate companies committed to “developing industry-wide standards of public certification that cocoa has been grown without any of the worst forms of child labor”.
Rapid Changes: Certifications

Third party certifications:

- Rainforest Alliance, UTZ Certified, Fairtrade Labelling
- 25% of annual cocoa crop certified in 2013
- Rainforest Alliance and Utz Certified more than doubled the volume certified each year since 2010
Sustainability and Social Standards

Combined effect of *ethical* and *commercial* concerns

→ Emergence of ‘socially responsible’ cocoa production
A Changing World of Agri-Food Value Chains
The Cocoa-Chocolate Trade between Africa and EU
In summary ...

Rapid and dramatic changes

• in standards & certification

• in global value chains
Is this good or bad for developing countries & the poor?

• Do modern standards & value chains marginalize poor farmers who cannot satisfy the requirements?

• Do standards induce concentration in value chains and does this lead to rent extraction by agribusiness?

• If not, does it have any impact?
Empirical evidence *

1. Smallholder inclusion is mixed
   (much more than typically argued)

2. Smallholders can have significant benefits if included, even with concentrated supply chains

3. Benefits from employment are ignored

4. Benefits from certification per se are unclear

* See reviews by Maertens and Swinnen (JDS, 2012; WTO 2014; ARRE 2015)
Standards/Certification & Commodity Characteristics

Governance and Organization of Value Chain

Surplus Creation & Surplus Distribution along the Value Chain (Impact on Farmers)
Standards & Vertical Coordination in Value Chains

- **Standards** imposed by “rich consumers” require specific **investments/inputs** by “poor producers”

- Farmer investments are difficult because of various constraints and market imperfections

- This induces **vertical coordination & complex contracting** in the value chains
Implications for farmers & rural households

• **Vertical coordination can imply:**
  – **Transfer** of technology, inputs, know-how, ... to poor
    • (arguably more important than many government technology programs)
  – Efficiency **premia** for poor suppliers
  – **Employment** opportunities for poor households

• **Potentially major implications for farm productivity and poverty (employment)**
<table>
<thead>
<tr>
<th></th>
<th>Small-holders</th>
<th>Industry structure</th>
<th>High value exports to EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Madagascar green beans</td>
<td>100% contract</td>
<td>Monopoly</td>
<td>yes</td>
</tr>
<tr>
<td>Senegal green beans</td>
<td>Mixed &amp; changing</td>
<td>Competition</td>
<td>yes</td>
</tr>
<tr>
<td>Senegal cherry tomatoes</td>
<td>0%</td>
<td>Monopoly</td>
<td>yes</td>
</tr>
</tbody>
</table>
1. Green Bean Exports in Madagascar (to EU)

- **Strict EU standards**, but contracting with very **poor and illiterate local farmers**

- **Rapid growth**
  - 100 farmers in 1990
  - 10,000 small farmers on contract in 2005

- **Major technology** (fertilizer) adoption effects

- **Important productivity spillovers**
  - Rice **productivity** increased by 70%
  - Length of **lean periods** falls by 2.5 months
    (with contract: 1.7; without contract: 4.3 months)
2. Green Bean Exports in Senegal

% household participation in region

- Employed
- Contract
- Participation

Year:
- 1990
- 1991
- 1992
- 1993
- 1994
- 1995
- 1996
- 1997
- 1998
- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
2. Green Bean VC's in Senegal

- **% household participation in region**

- **Average household income (1,000 F CFA)**

- **Income Effects**
  - Total sample
  - Non-participants
  - Agro-industrial employees
  - Contract farmers

- **Average household income**
  - Income from farming
  - Income from agr. wages
  - Income from non-agr. sources
3. Vertical Integration
Worst Case Scenario?

Tomato export chain in Senegal

1. Very **stringent standards**
2. Poor country
3. Complete **exclusion of smallholders**
4. Extreme consolidation
5. Foreign owned multinational

*(Maertens, Colen and Swinnen 2011 ERAE)*
Standards, Value Chain Employment & Incomes of Poor

Worst Case Scenario?

- Strong employment growth: 40% of households in the region employed

- HH incomes double: strong income and anti-poverty effects
Gender Effects

Case-study "Les Niayes"

Case-study "Senegal River Delta"

Share of households

Year


Employees  Female employees  Male employees
Income effect of employment by income group

THE POOREST
Employment effects

• Especially important for the **poorest** and for **women**

• Our hypothesis:

  ... **women and the poor may benefit more and more directly from employment in large-scale production and agro-industrial processing, than from smallholder contract-farming.”**

  (Maertens & Swinnen, 2012 JDS)

• Note that in this perspective **indicators that look only at “participation of small farmers” may be (double) misleading** in terms of welfare and poverty effects
Impact of Certification: The case of Voluntary Sustainability Standards (VSS) (incl. FairTrade etc) in coffee in Ethiopia

Joint study of Bart Minten and colleagues from IFPRI & LICOS
VSS Certification in Coffee

Globally:
- VSS rapidly taking off (4% in 2005, now 20%)
- Coffee leading agricultural commodity in VSS

In Ethiopia:
- VSS low and slow
- Coffee most important export product: 25% of its forex earnings
- 4 million coffee farmers

![Graph showing VSS certification in Coffee over years with comparison to global percentage.](image-url)
Previous VSS certification impact studies

- Relatively few studies, mixed findings: some positive, some no effect

- Impact of VSS on coffee producers: Few studies, Mixed findings:
  - some positive (Ruben and Fort; 2012; Wollni and Zeller, 2007);
  - some no effect (Jena et al., 2012; Cramer et al., 2014)
Quality premiums VSS certification

Export level

Farm level
Quality premiums VSS certification
Transmission to farms = 1/3

• Where does the rest go?

• Certification costs = +/- 20%

• Overhead and marketing costs of cooperatives and unions = +/- 30%
Why low uptake of VSS certification?

• Average coffee farmer in Ethiopia, if all coffee certified: income increase with 7.5 USD (per year!)
  – With 100% premium transmission, increase of 20 USD per year...

• Impact of certification on coffee producers’ welfare is small.

• Combined with implementation costs: low adoption of Fair Trade in Ethiopia
Conclusions

• Dramatic changes in standards and global value chains
• Potentially important implications for poor farmers
• Actual effects are mixed and nuanced
• There is much need for better empirical research to understand what the actual effects are (in contrast to the “stories”).