“Low Level Presence, Trade, Biosafety and Decision Making: Issues for Developing Countries”

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IFPRI’s Mission and Expertise

• IFPRI mission as an international non-governmental organization
  “To Provide Research-Based Policy Solutions That Sustainably Reduce Poverty and End Hunger and Malnutrition”

• IFPRI conducts research in policy relevant topics:
  – Trade related impacts
    • Impacts of labelling and low level presence policies
    • Private contracts and standards
    • Compliance ability
  – Ex ante and Ex post socioeconomic impact assessments of adoption
  – Regulatory issues
    • Effects of cost of compliance with biosafety regulations and regulatory delays
    • Coexistence, segregation, identity preservation
    • Regional harmonization approaches

• IFPRI provides operational and research based policy support to biosafety regulatory agencies and competent authorities in their decision making

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Sources of LLP

- **Asynchronous**: at least one cultivating country has already authorized a GM crop while other countries have not approved for importation.

- **Asymmetric**: a cultivating country has authorized a GM crop, but its developer does not seek approval in potential or unattractive importing countries.

- **Accidental admixture**: a country has authorized the cultivation of a GM crop in field trials only. Traces of the commodity end up in the commercial crop supply.

GM food trade and asynchronous approval

- Growing market shares and trade of GM commodities
- Increasing pipeline of new GM crops and events
- Lack of policies and definitions
  - Slow down import regulations
  - 0% tolerance for imports of unapproved GM products
- Focus on implementation issues
  - Codex Annex: simplified procedure
  - Incentives to move forward

**Source:** Gruere 2011

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Policy options and decision making variables affecting economic welfare

Policy Options

1. 0% tolerance level for unapproved GM products
2. A threshold (t %) low level presence policy
3. 100% tolerance

Optimal Policy Option

The cost of enforcing the regulation
The potential risk of the product
The price of the product

Source: Gruere, G. 2011.
Some issues identified for consideration on the evaluation of economic welfare of LLPs

**Price**
- Tolerance level
- Probability of rejection
- Timing of approval
- Premium differentials

**Risk**
- Tolerance level
- Trust in exporter regulations
- Availability
- Type of product and use

**Cost of compliance**
- Tolerance level
- Import volumes
- Cost structure enforcement
- Approval delays
- Enforcement capacity

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Qualitative implications for key decision parameters identified in assessment studies of economic welfare

1. Tolerance level
2. Approval delays
3. Degree of confidence in domestic and exporter’s regulation

<table>
<thead>
<tr>
<th>Increase in</th>
<th>Price</th>
<th>Risk</th>
<th>Cost of implementation</th>
<th>Total economic welfare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tolerance level</td>
<td>↓</td>
<td>↑ or →</td>
<td>↓</td>
<td>↓ or ↑</td>
</tr>
<tr>
<td>Approval delay</td>
<td>↑</td>
<td>→</td>
<td>↑</td>
<td>↓</td>
</tr>
<tr>
<td>Confidence</td>
<td>→</td>
<td>↓</td>
<td>→</td>
<td>↑</td>
</tr>
</tbody>
</table>

Best outcomes with **high confidence & low delays**, but the optimal **tolerance level** depends on tradeoff **cost versus relative risk** perceptions.

Source: Gruere, G. 2011.

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Limitations to studies on the impact of low level presence policies

• Complex issue that requires extensive data to estimate impacts

• Data issues
  – Production, prices, trade volumes, shares of affected imports
  – Testing costs relative to volume...

• Many available studies based on assumptions and relatively simple models

• Obtain an idea of qualitative direction and a sense of the magnitude of impacts...with known limitations
Example from Developing Countries-
soybean imports in Vietnam

In average across simulations and range of assumptions, implementation cost for different tolerance levels are:

- 0% $18 million,
- 1% $4.1 million,
- 5% $580,000 per year

Some, but not limited to, relevant question for a regulator could be:

Is maintaining a 0% tolerance level - costing an average of $14 million more-in order to address perceived safety concerns better than a 1% presence of an unapproved event that has gone through safety authorization in the country of export?

Is the 0% level worth roughly $17+ million more than a 5% level?

Source: Gruere, G. 2011.
## Summary selected issues and policies related to economic welfare impacts of LLPs

<table>
<thead>
<tr>
<th>Option</th>
<th>Probability trade disruption</th>
<th>Price</th>
<th>Risk</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>0% LLP</td>
<td>High</td>
<td>High until approval</td>
<td>Some variability</td>
<td>Very high</td>
</tr>
<tr>
<td>t % LLP</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Some variability and possible low risk</td>
<td>Moderate to high</td>
</tr>
<tr>
<td>100% pass</td>
<td>0</td>
<td>0</td>
<td>Larger variability and potential risk</td>
<td>None</td>
</tr>
</tbody>
</table>

Low level presence policies are valid intermediates between 0% tolerance level and 100% pass.

*Source: Gruere, G. 2011.*

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Broader regulatory cost of compliance: Issues and Implications identified in existing studies

• Regulatory delays have a negative impact on returns to investments

• Projected trigger point is year 6 of regulatory delays for suspending a typical investment of $136 million in new R&D projects

• Average regulatory approvals of 48 months implies reaching suspension point likely

• Regulatory delays increase investment risk

• Uncertainty increases likelihood that an investment will not be made

Source: Smyth, McDonald and Falck-Zepeda, 2013

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Implications increases of cost of compliance for public goods in developing countries

- Cost are not as important, exceptions
  - National research organizations
  - International research systems developing “public goods”
  - Small private firms
- Impact on the number/type of technologies
- More “higher return” products and less public good products?

Source: Beyer, Norton and Falck-Zepeda 2010
Black Sigatoka Resistant Bananas in Uganda

- Considered irreversible and reversible costs and benefits for estimation
- With one year delay, forego potential annual (social) benefits of +/- US$200 million

Summary

• LLPs are becoming an important trade issue
• Need to understand better asynchrony sources and the various approaches to manage LLPs
  ─ Critical need for reliable information and data to make the best possible judgment on the way forward
• Different thresholds have different impacts
  ─ More cost/benefit studies are needed
  ─ Existing studies indicate that lower thresholds tend to have higher costs
• Cost of compliance with regulations can impact potential stream of technologies available to developing countries especially those of a public good nature
Potential issues for discussion

• How can we reduce asynchronicity?
  – What are regulators and/or decision makers roles and responsibilities? How about developers/industry? Other stakeholders?
  – Building trust in the system including regulations

• How can information sharing improve our ability to make decisions?
  – Food/feed and environmental safety information sharing mechanisms and approaches
    • Use of Codex Alimentarius guidelines?
    • Use of FAO GM Foods Platform to share information for LLP situations? Other knowledge platforms i.e. Biosafety Clearinghouse?
  – Finance additional data/information collection needed to examine relevant policy issue in more detail?

• Developing roadmaps to the exploration of realistic solutions to LLPs?

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References


