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CAST Commentary 2016-2-QC
December 2016
Material excerpted from original CAST document

The Impact of Asynchronous Approvals for Biotech Crops on Agricultural Sustainability, Trade, and Innovation

Crops produced through modern biotechnology are strictly regulated, and regulatory approaches differ across countries.

- Governments regulate biotechnology and its products in an attempt to minimize any potential environmental and animal or human health risks that new biotech events might present.
- Associated regulations involve administrative, compliance, and other social costs that must also be taken into account.
- The time required to review and approve new biotech events varies significantly from one country to another.
- Regulatory review times for new biotech events have increased in key jurisdictions and approvals have become more asynchronous in recent years.

On a few occasions, regulatory asynchrony has led to a situation in which new biotech crops have been approved and commercialized in some key markets although still being unauthorized for use in others.

- Most countries have “zero tolerance” for unapproved biotech events.
- Asynchrony in regulatory approvals between importing and exporting countries puts large volumes of trade worth billions of dollars at risk.
- Under zero tolerance, low-level presence (LLP) incidents can lead to trade disruption and, ultimately, trade distortions.

The most immediate effects of LLP incidents caused by asynchronous approvals fall directly on the trading parties.

- Shippers experience substantial economic losses.
- In extreme cases, they may lose the value of the entire shipment.
- The impact of any LLP incident propagates quickly across the international agrifood supply chains.

Asynchronous approvals have further impacts by delaying the commercialization and adoption of new biotech events.

- Delayed commercialization of new biotech events imposes additional social costs by denying producers and consumers benefits from innovation.
- A few studies that have estimated the social costs from delayed or foregone biotech innovation in agriculture due to regulatory delays have also pointed to large social costs.
- Some potentially profitable innovations may be neglected if regulatory delays and higher costs decrease the net present value of a prospective biotech innovation.

Given the significant and multifaceted impacts of regulatory asynchrony and LLP on the global economy, the issue has attracted significant attention and alternative policy solutions have been proposed.

- An LLP policy alternative that has been proposed is the establishment of nonzero commercial tolerances for asynchronous events that are present at low levels in the agrifood supply chain.
- Recognition of safety assessments and regulatory approvals of trading partners have also been proposed as possible solutions to regulatory asynchrony.

More research is needed into the decision-making process of biotech developers in order to clarify the impacts of regulatory asynchrony on their calculus for which projects to proceed with and which to abandon.

- As long as the current situation persists, agricultural biotechnology will be prevented from delivering the full range of promised benefits of improved standard of living and food security.

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