

# Nanotechnology and Agricultural Trade

## *OECD Conference on the Potential Environmental Benefits of Nanotechnology: Fostering Safe Innovation-Led Growth*

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# Summary

1. The use of nanotechnology in agriculture and forestry will likely have environmental benefits.
2. It's critical to approach this promising technology in a rational manner (Not all nano is the same).
3. Non-Science based regulation of this technology could hurt innovation and trade without promoting health or safety.
4. Overly restrictive, non-science based measures may prevent or significantly limit all potential benefits; to farmers and the environment alike.

# Potential Environmental Benefits

1. The use of nanotechnology in agriculture and forestry will likely have environmental benefits.
  - Enabling the “Green Economy”
  - Decreasing fossil fuel consumption
  - Increasing equipment life-span
  - Increase recycling capabilities

# Agricultural Benefits

- Increasing farm sustainability while decreasing environmental impact.
  - Sensors in the fields enabling targeted, minimal application of nutrients, water and/or pesticides.
- Increasing global food security.
  - Decreasing input costs, increasing yields and decreasing post harvest loss.
- Post-harvest, non-food biomass.
  - Cellulosic nano crystals for biofuels
- Improving food safety.
  - ‘Smart’ packaging enabling less food waste

# Forestry Benefits

- Increasing forest management sustainability while decreasing environmental impact.
  - Increasing markets for biomass, which promotes the health of the forest
- Paper products
  - Stronger, longer lasting, lighter products
- Biomass based building materials
  - Stronger longer lasting, replace petroleum based materials
- Enable better fire retardants and wood preservation
  - Less biomass needs to be harvested

# Approach

2. It is important to approach this promising technology in a rational manner.
  - Nano-scale materials have been around for awhile.
  - Nanomaterials are not all equally hazardous.
  - As with any new technology, we should ensure that regulatory approaches are risk-based and cost-effective.
  - Scientists have an obligation to help dispel unfounded rumors about nano-related hazards.

# Risk

3. Regulation that is not grounded in sound science could have harmful economic impacts without promoting health or safety.
  - Could disrupt trade and be used as a tool for protectionism.
  - May not increase levels of protection.
  - Could draw attention away from genuine risks and waste public funds.

# Regulatory Approach

The United States' current position is that, in general, ***existing statutory authorities are adequate to address regulatory oversight*** of nanotechnology and its applications in production agriculture (e.g. use of pesticides and fertilizers), food additives, and food packaging.

# U.S. Regulatory Oversight of Agriculture and Forestry

- U.S. Food and Drug Administration
  - Federal Food, Drug, & Cosmetic (FFDCA)
- U.S. Environmental Protection Agency
  - Toxic Substances Control Act (TSCA)
- USDA - Animal and Plant Health Inspection Service
  - *continues to review the science and reserves the possibility to exercise regulatory authority in the future, if necessary.*

# Other Countries Approaches to Nanotechnology Regulation

## OECD countries:

- European Union, Japan, Canada, Korea and Australia & New Zealand

## Non-OECD:

- China, India, Russia, Brazil and South Africa

# Potential Trade Disruptions

4. Overly restrictive, non-science based measures may prevent or significantly limit all potential benefits; to farmers and the environment alike.
  - Broad definition of 'nanotechnology' (size dependent)
  - Nanotech as a process triggers regulatory oversight
  - Mandatory product labeling
  - List of approved nano particles implies others are hazardous without any evidence.

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