**Small Technologies in Big Countries: Political Factors in Nanotechnology Regulation in China and India**

**Abstract**

This research analyzes the role of domestic and international politics in the creation of regulatory policy governing emerging technologies, and addresses broader international issues of development and environmental, health, and safety concerns in the context of global governance. Using China and India as case studies, we evaluate divergent regulatory stances in developing countries, and place the results within the context of existing literature on the EU and US. We analyze competing factors of political motivations, global markets, powerful actors, and international networks of diffusion in shaping the adoption of national nanotechnology regulatory policies in developing countries. While a diverse group of developing countries have adopted national nanotechnology strategies, the actual policies of promotion and regulation vary substantially across sector and across country. China and India reflect a wider trend of regulatory variation across sectors, and how political motivations play into regulatory decisions. Our research contributes to a growing body of literature on how developing countries interact with international institutions.

**Results**

Main factors in determining regulatory stance

- **Political motivations**
- **Strategic value of a sector**
- **For India, relationships with international institutions especially important**
- **Regulatory Commonalities**
- **Focus on protecting market first**
- **Gradual movement toward precautionary principle**

**China**

- **Regime Orientation**: Market oriented, shift toward precautionary
- **Regime Organization**: Complex regime, multiple branches, difficult to coordinate
- **Key Legislation**: 2009 Amendments
- **Nanotechnology-specific?**: No
- **Political Structures**: State-led, local supervisory responsibility

**India**

- **Regime Orientation**: Market oriented
- **Regime Organization**: Government supports risk research, coordination is problematic
- **Key Legislation**: Patent Act Amendments, 2005
- **Nanotechnology-specific?**: No
- **Political Structures**: State-led, local structures emerging

**Background**

Nanotechnology has been hailed as the next industrial revolution, as well as a transforming technology that could repair the ozone layer, transform the food industry, clean up polluted waters, and cure cancer. To developing countries, it promises to solve their worst problems and is perceived as a means to rise in global power. Yet, manipulating matter at the atomic level poses potential risks to the environment, human health, safety, and security. Over the course of a decade, there was an explosion of nanotechnology initiatives among a surprising group of countries, from the U.S., Sweden, and Canada to Estonia, Mexico, and Pakistan.

**Nano Initiative Explosion!**

Adoption of National Nanotechnology Initiatives, 2000-2012

**Definition of Nanotechnology**

Nanotechnology refers to the understanding and manipulation of matter at nanoscale dimensions, between 1 and 100 nanometers. A nanometer is one-billionth of a meter!

**Nano Applications for Developing Countries**

Nanofood?

**References**