




# The World That Moves Food And Agricultural Markets

## The Emerging Agricultural World

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Trends and Successes Redefining Agriculture  
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# The Knowledge Revolution: A World of Cutting Edge Technologies

- Curing Diseases
- Cultivating Crops
- Calculating Climate Change
- Connecting Continents



# The Industrial Revolution: 19<sup>th</sup> Century High-Tech

- Mechanized “Steam” power
- Refrigerated shipping
- Telegraph and telephone
- Model-T automobile powered by ethanol

**The Nature of Markets is Dynamic Change**



# Trends or Events: The Top 10 Questions

- Global energy markets
- Agricultural energy (ethanol or biofuels)
- Biotechnology
- Climate Change
- Terrorism
- Emerging & yet to emerge Markets (China, India and ROW)



# Five Market Trends

- Agriculture markets are shifting
- Consumer tastes and food products are changing
- People and purchasing power are emerging
- Supply chains are growing
- Managing risks are key to maximizing results

# Agriculture's Markets Are Shifting, Not Only Due to Farm Policy and Trade Negotiations



- Farm revenue insurance
- Both market based insurance products and environmental payments will not be unique to US policy development



# Agriculture & Energy

Ethanol and Biofuels are  
changing the face of  
agriculture and the market  
structure.



# Climate Change Can Mean Big Benefits To Agriculture and Rural Economies



# Climate Change and Emissions Trading

- New sources of agricultural revenues from carbon credits in farming operations
- Producers delivering offsets to CO<sub>2</sub> emissions in industries
- Developing integrated operations to reduce farming emissions
- The Chicago Climate Exchange (CCX) trading platform



# What is Chicago Climate Exchange?

Chicago Climate Exchange (CCX<sup>®</sup>) is the world's first and North America's only voluntary, legally binding greenhouse gas reduction and trading program for emission sources and offset projects worldwide.

➤ Note: No other North American trading system in the next 3-5 years minimum





# CCX Offset Program

Offset projects sequester or eliminate GHGs, which can then earn credits that sell on CCX to buyers seeking reductions

Eligible Project types include:

- Landfill methane destruction
- Agricultural (livestock)
- Methane destruction
- No-till agriculture
- Forestry
- Renewable Energy





# Canada and CCX Trading

- CCX in Canada
  - Abitibi-Consolidated and Manitoba Hydro: CCX Members
  - CCX and Bourse de Montreal Partnership
- Agriculture Soil Sequestration From No-Till Agriculture
  - Saskatchewan enrollment operation
  - Alberta and Manitoba to be offered



# Wind Means Money and There is Wind

- A clean energy source
- Enhances farm income
- Adds off-farm employment opportunities
- Adds to the tax-base



# Diverse Agriculture and Land Use Means Revenue **Not** Prices Support

Market-based products may transform  
commodity safety nets...

- Ex ante risk management versus ex post response to managing shock
- Global index insurance facility
  - Index based price, weather and disaster insurance and reinsurance for developing countries



# Consumer Tastes and Food Products are Changing, Not Only Because of the “Food Police”



# The Modern 21<sup>st</sup> Century Wars Are Wars Against:

- Calories
- Food allergies
- Fats
- Ageing
- Diseases
- Bioterrorism

# Laboratory (not Battlefield) Technology

- Fat- friend or enemy?
- Nutritional health benefits
- Red wine connoisseurs, your time has come!



# Agriculture and Farm IT /Innovation Hits the Mainstream

- Gene Marker Technology
- GMO/ Biotech



# Nanotech for the Food Industry

- Synthetic food coloring
- Frying oil preservatives
- Packaging coated with antimicrobial agents



# Demand for Organic Food is on the Rise

- U.S. organic sales grew 15% last year- 5 times the growth rate of conventional packaged food
- “Which Cows Do You Trust?”
- We are now serving “Idealism for breakfast”



# World Population & Purchasing Power

## Population

- 1.6 billion people added to world by 2025; 96% of which are in developing countries.
- 6 billion people in 2001; 9-10 billion in 2050.
- More than 40% of people today in developing economies under 15 years of age.
- 1950-developed countries had 30% of world population; by 2050 only 10%.

## Purchasing Power

- Asia's share of global GDP will reach 50% of total GDP by 2050
- Latin America's share of global GDP will rise by 3-4%
- Europe's share of GDP will decline substantially
- USA share of GDP remains constant.



# People + Urbanization = Purchasing Power

- In 2003, the urban population in developing countries was twice that of the rich countries, by 2030 it will be four times larger.
- Income equals food demand:
  - Mexico City has 14% of the population but one-third of the income
  - Shanghai has 1.2 percent of China's population but generates 12.5 percent of the nation's GNP.

# Mega-Cities

● = 10 million+ in 2005

● = 10 million+ in 2015

## Cities with over 10 million inhabitants in 2005

|                         |             |
|-------------------------|-------------|
| Tokyo, Japan            | 35.3million |
| Mexico City, Mexico     | 19          |
| New York City, USA      | 18.4        |
| Mumbai, India           | 18.3        |
| São Paulo, Brazil       | 18.3        |
| Delhi, India            | 15.3        |
| Calcutta, India         | 14.2        |
| Buenos Aires, Argentina | 13.3        |
| Jakarta, Indonesia      | 13.1        |
| Shanghai, China         | 12.6        |
| Dhaka, Bangladesh       | 12.5        |
| Los Angeles, USA        | 12.1        |
| Karachi, Pakistan       | 11.8        |
| Rio de Janeiro, Brazil  | 11.4        |
| Osaka, Japan            | 11.2        |
| Cairo, Egypt            | 11.1        |
| Lagos, Nigeria          | 11.1        |
| Beijing, China          | 10.8        |
| Manila, Philippine      | 10.6        |
| Moscow, Russia          | 10.6        |

291 m.

## Cities with over 10 million inhabitants in 2015

357 m.

### Hypermarkets and Supermarkets

|                 |              |                |      |
|-----------------|--------------|----------------|------|
| Tokyo, Japan    | 36.2 million | Buenos Aires   | 14.5 |
| Mumbai (Bombay) | 22.6         | Cairo          | 13.1 |
| Delhi           | 20.9         | Los Angeles    | 12.9 |
| Mexico City     | 20.6         | Shanghai       | 12.6 |
| Sao Paulo       | 19.9         | Manila         | 12.6 |
| New York        | 19.7         | Rio de Janeiro | 12.3 |
| Dhaka           | 17.9         | Istanbul       | 11.3 |
| Jakarta         | 17.4         | Osaka          | 11.3 |
| Lagos           | 17           | Beijing        | 11   |
| Calcutta        | 16.7         | Moscow         | 10.9 |
| Karachi         | 16.1         | Paris          | 10   |

UN World Population prospects 2003



# Physical and Financial Capacity

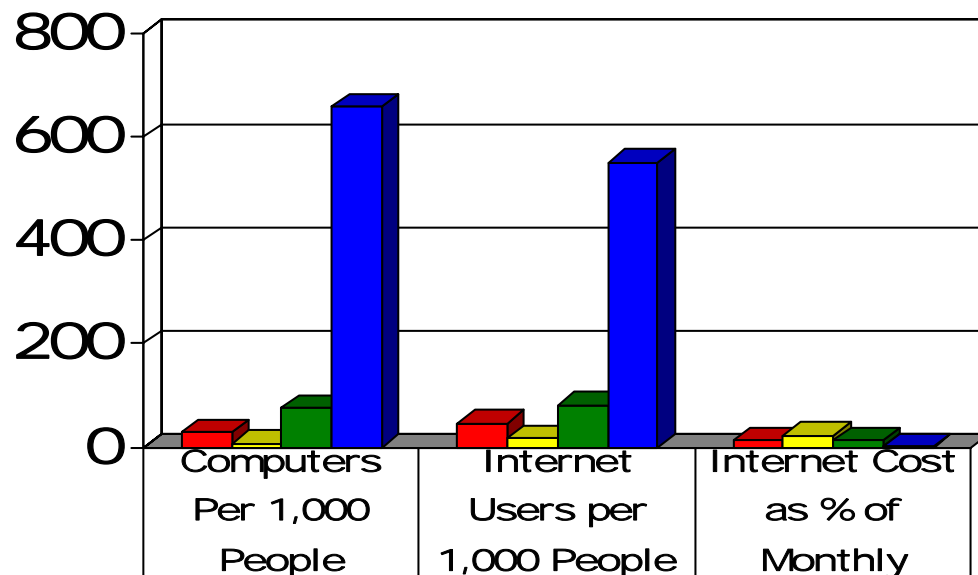
## Infrastructure

- **Roads**
- **Power**
- **Ports**
- **Water/sanitation**
- **Telecommunications**
- **Financial**



# Technological Deficit

■ China ■ India ■ Brazil ■ USA



|          |       |     |      |
|----------|-------|-----|------|
| ■ China  | 27.6  | 46  | 13   |
| ■ India  | 7.2   | 16  | 21.9 |
| ■ Brazil | 74.8  | 82  | 11.8 |
| ■ USA    | 658.9 | 551 | 0.5  |



# Basic Infrastructure Gaps

|             | Population (mlns) | Electricity Usage per cap (kilowatt hours) | Fixed Line & Mobile Subs (per 1000 people) | Paved Roads (% total) |
|-------------|-------------------|--|--|-----------------------|
| China       | 1.280             | 893  | 328  | 91                    |
| India       | 1.049             | 365  | 52   | 45.7                  |
| Brazil      | 172               | 1,891                                      | 424  | 5.5                   |
| Ecuador     | 12                | 5,656                                      | 231  | 18.9                  |
| Kenya       | 30                | 128  | 52   | 12.1                  |
| Russia      | 144               | 4,270                                      | 362  | 67.4                  |
| USA         | 288               | 11,714                                     | 1,134                                      | 58.8                  |
| Argentina   | 36                | 2,107                                      | 396  | 29.4                  |
| Egypt       | 66                | 1,046                                      | 177  | 78                    |
| Philippines | 80                | 489  | 233  | 21                    |
| Vietnam     | 80                | 325  | 72   | 25                    |
| Turkey      | 70                | 629  | 629  | 35                    |

Source: World Bank, Little Data Book 04, (latest statistics available for either 2001 or 2002)



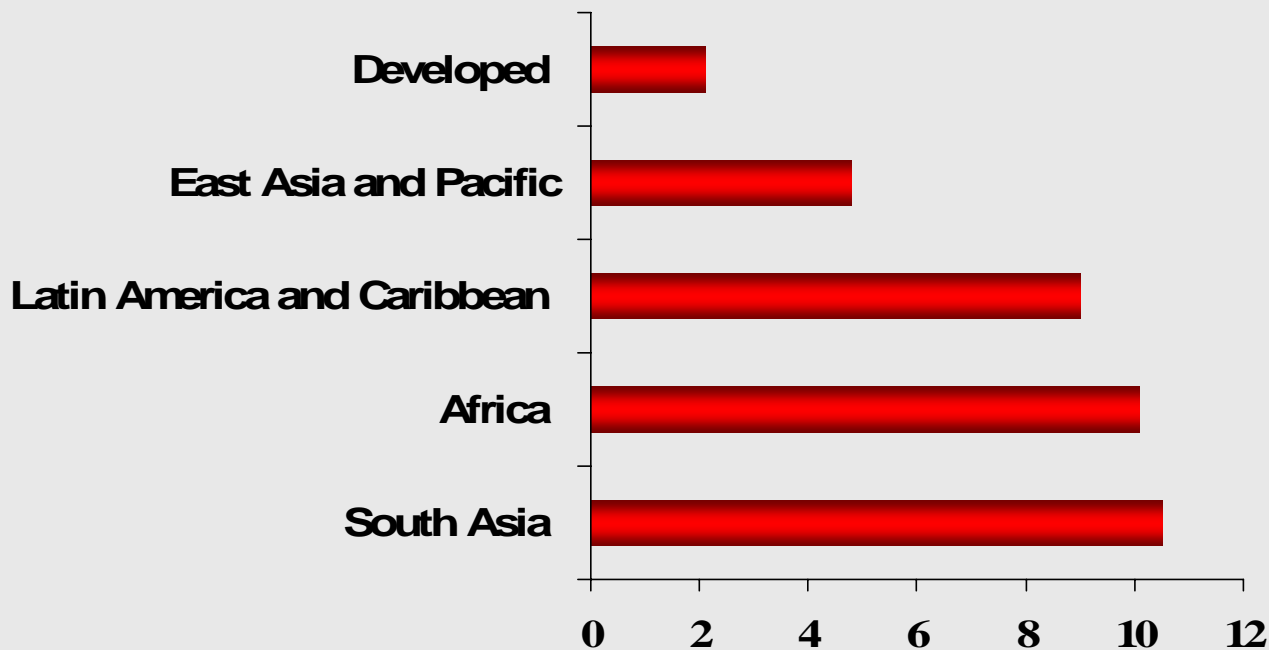
# Infrastructure

- Can Emerging Countries Emerge in the World Trading System?
- Trade Platforms, not Paper Agreements Move Products Into Real Trade



# Improving trade logistics: as important as market access

Average number of days to clear customs for sea cargo



**Development assistance is key to improving ports, customs and trade infrastructure**

Source: International Exhibition Logistics Associates, based on a sample of countries in each region

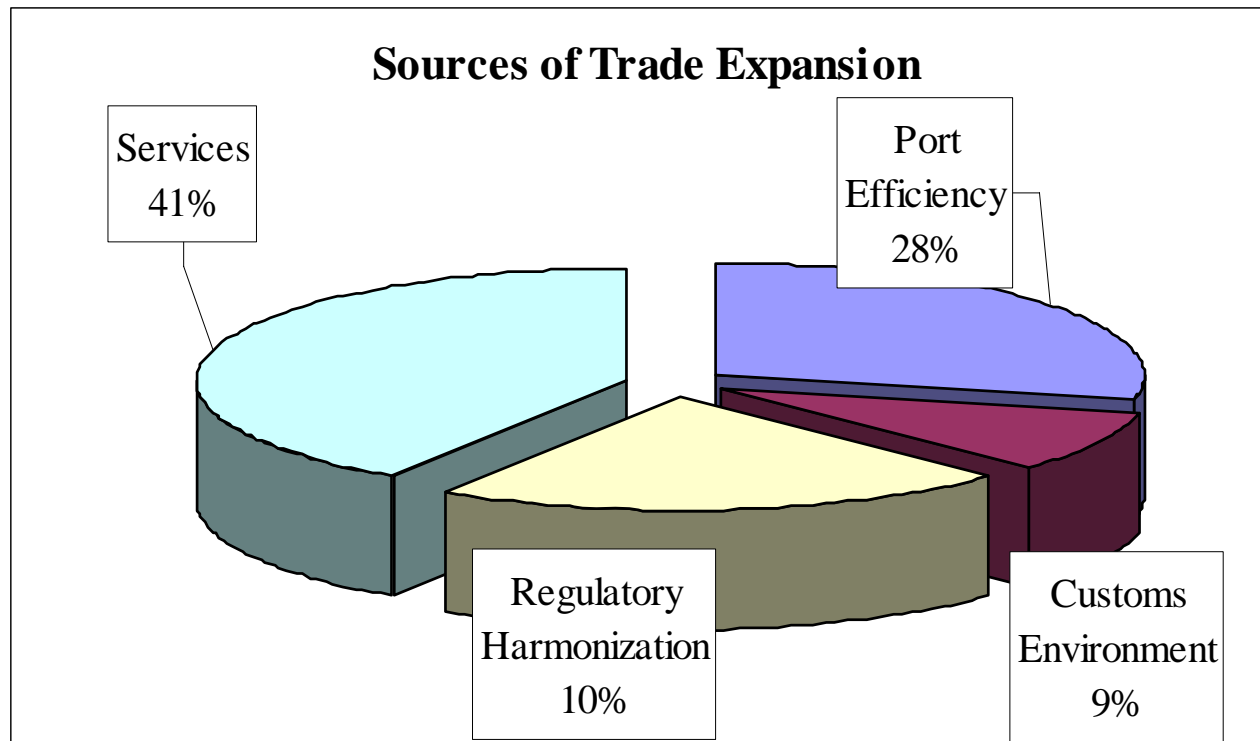




# Trade Gain: Raising Capacity Half-way to average (One-time gain)

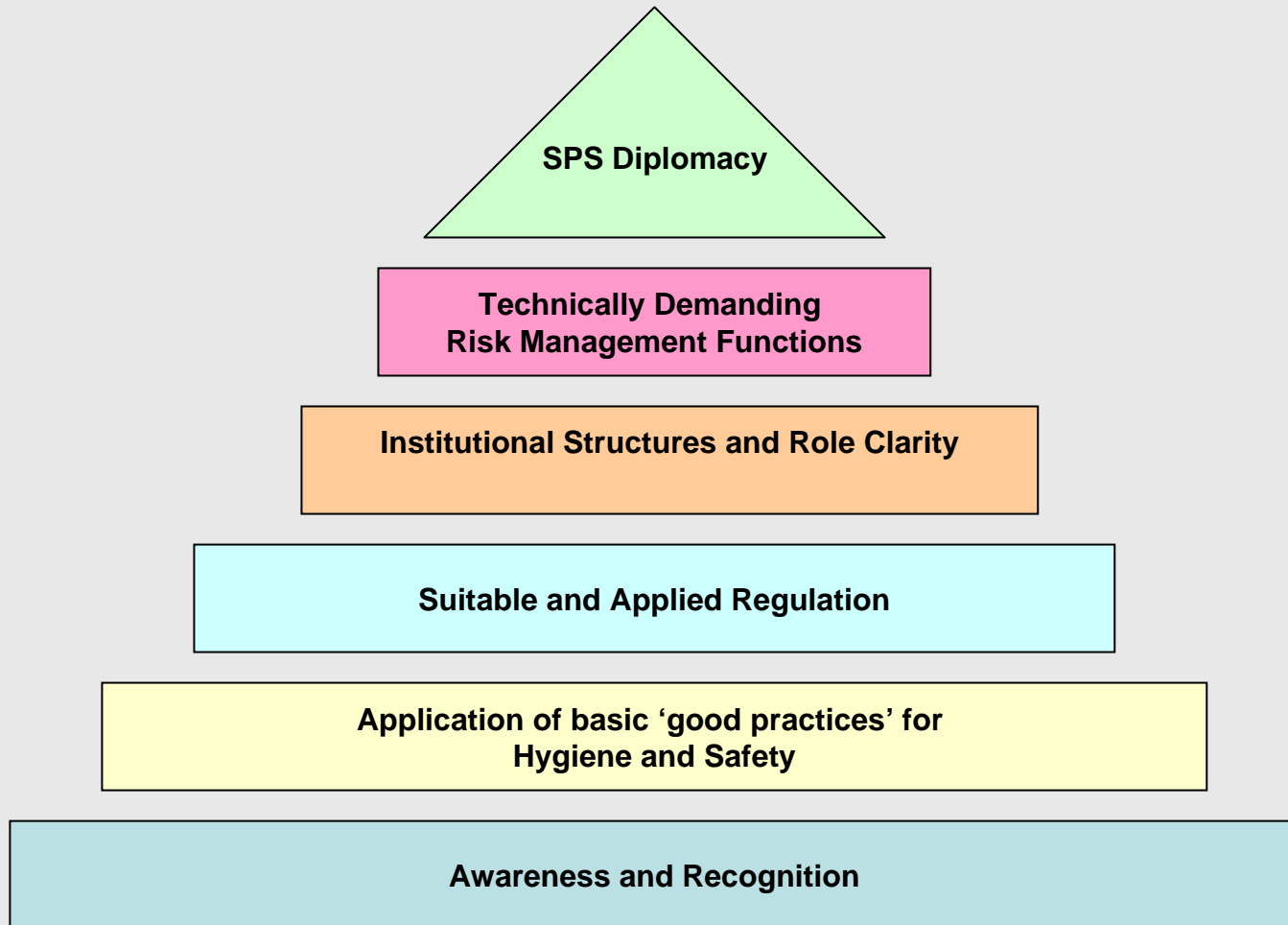
\$377 billion increase in 75 developing countries

(Wilson, Mann, Otsuki 2004)





# Hierarchy of Trade-Related SPS Chain to Manage Risk





# Governance Matters

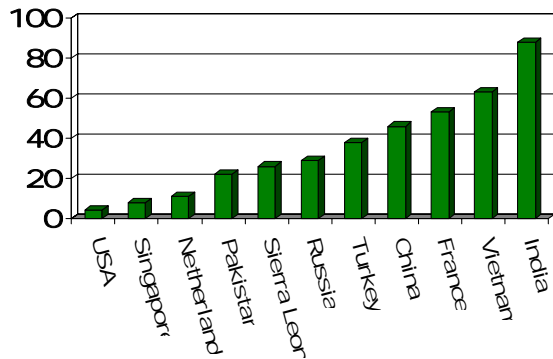
## Institutions that Work

- **Good Governance**
- **Rule of Law**
- **Regulatory Enforcement**
- **Regulatory Transparency**
- **Dispute Resolution**

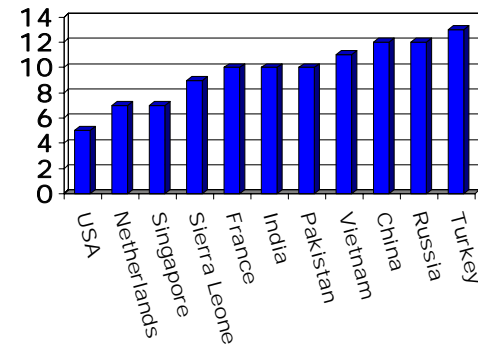


# Impacts on Business

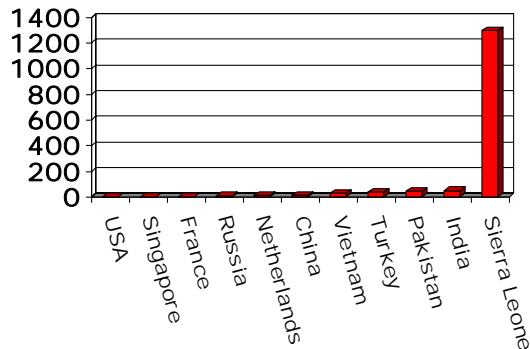
### Days to Start a Business



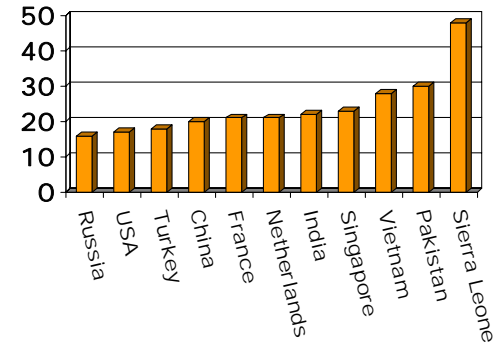
### Number of Procedures



### % of Income to Start Business



### Procedures to Enforce Contract





# Doing Business 2007

| Rank 1-155 | Canada | Brazil | India | Turkey | Mexico | China |
|------------|--------|--------|-------|--------|--------|-------|
| Ease       | 4      | 119    | 134   | 91     | 73     | 93    |
| Start      | 1      | 98     | 88    | 59     | 84     | 128   |
| License    | 32     | 115    | 155   | 110    | 49     | 153   |
| Hire/Fire  | 13     | 144    | 112   | 92     | 125    | 78    |
| Property   | 22     | 105    | 110   | 71     | 74     | 21    |
| Credit     | 7      | 80     | 65    | 101    | 68     | 101   |
| Invest     | 5      | 53     | 33    | 151    | 125    | 83    |
| Taxes      | 22     | 140    | 158   | 139    | 95     | 168   |
| Trade      | 8      | 107    | 139   | 39     | 39     | 38    |
| Contract   | 16     | 70     | 173   | 40     | 100    | 63    |

Source: World Bank *Doing Business 2007* , Nation Ranking



# Creating Human Capacity

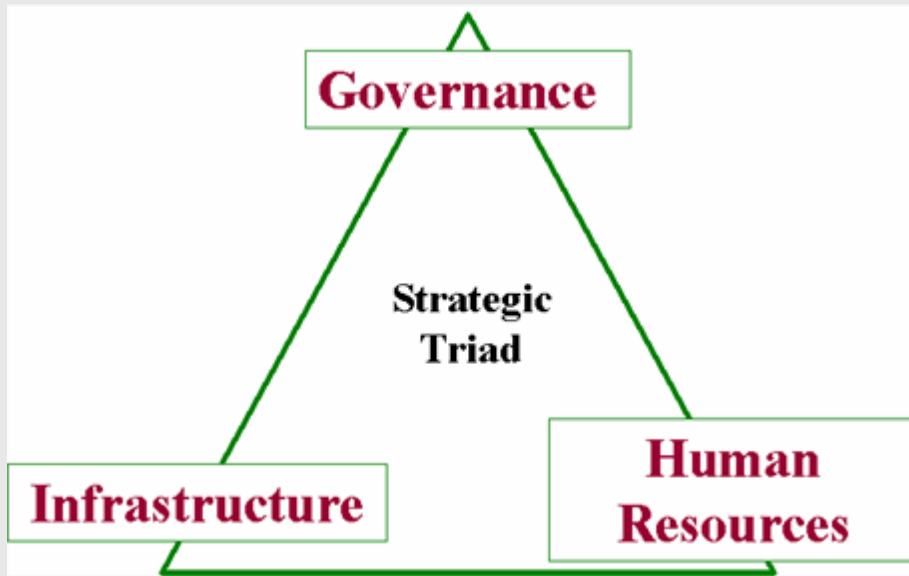
## Human Resources

- Education
- Health
- Technological Competence

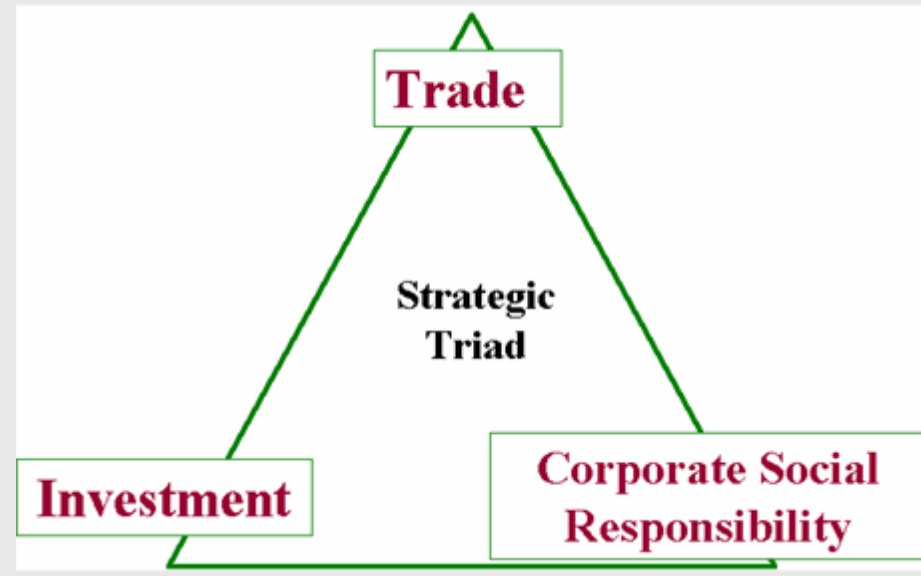


# ***Smart Engagement*** in Emerging Markets

## **Managing Country Risks**



## **Maximizing Business Results**



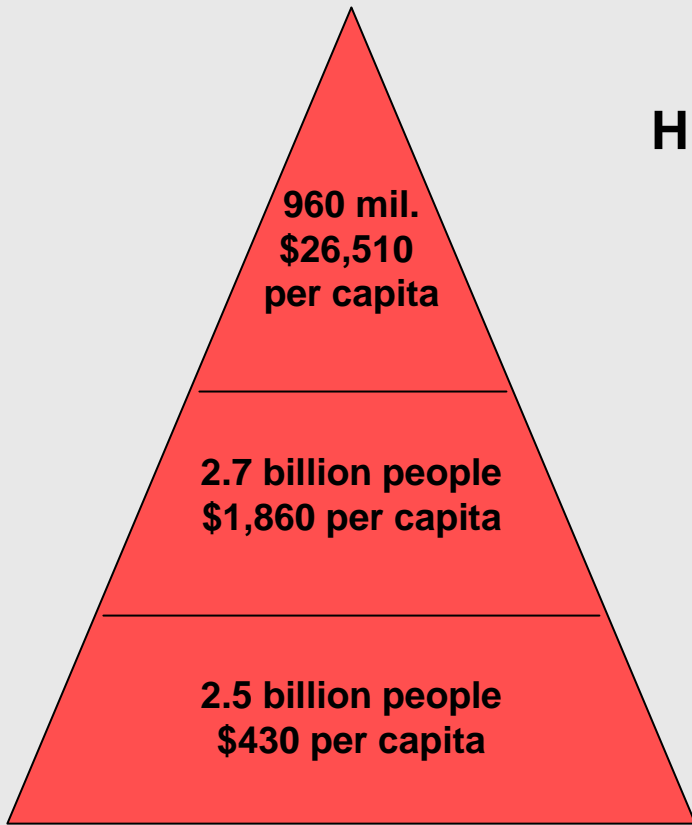


# Our Goal: Add One Billion People Into the Middle Class by 2015

Current



Potential



High Income

Middle Income

Low Income

