

# *Food Security in the 21<sup>st</sup> Century*

**Daryll E. Ray**

University of Tennessee  
Agricultural Policy Analysis Center

**A Chatham House International Conference**

London, England

October 7, 2008

# *Why is There so Much Interest in This Conference?*

- **Food crisis is the worst since 1973**
  - sharp increases in food prices
  - immediacy of addressing food security problems
- **Short-run and long-run dimensions**
  - Long-run supply and demand conditions have received the bulk of the attention
  - But preventing the next acute food crisis may be what needs our attention

# *Not to Say There Are Not Long-Term Issues*

- **If this conference been held four years ago, we may have focused on...**
  - **Sufficient staples are produced to conquer world hunger**
  - **So why do 800 million go to bed hungry?**
    - **Income level/income distribution/health**
    - **Local production/marketing/credit/governance/infr astructure**
    - **Policy—domestic/trade/other countries**
    - **Bunches of other issues too**

# *In the Long-Run...*

- **Will...**
  - Prices move to higher plateau
  - (Or) demand outrun supply causing crop prices to increase (even faster than inflation)
- **That is, “It’s different this time.” “It’s a New Era”** (This would be the fourth “**New Era**” in my lifetime!)
- **I have my doubts**
- **Supply growth has always caught and then surpassed demand growth** (and it does not take long)

# *In the Long-run: It's Supply, Supply, Supply*

- **US supply response**
  - **Conversion of Conservation Reserve Program Acreage and hay/pasture land to crop production**
  - **Investment in yield enhancing technology (300 bu./ac on best land in a few years—national average a decade or later?)**
  - **Conversion to cellulosic feedstocks for ethanol production**

# *In the Long-run: It's Supply, Supply, Supply*

- **International supply response—yield**
  - **Development and adoption of drought/saline/disease resistant crops**
  - **Globalization of agribusiness: Near universal access to the new technologies world-wide**
    - **Narrowing of technology and yield differentials between the developed and developing world**

# *In the Long-run: It's Supply, Supply, Supply*

- **International supply response—acreage**
  - *Long-run* **land** potentially **available for major crops**
    - **Savannah land in Brazil** (250 mil. ac. -- USDA says 350)
    - **Savannah land in Venezuela, Guyana, and Peru** (200 mil. ac.)
    - **Land in former Soviet Union** (100 mil. ac.)
    - **Arid land in China's west** (100 mil. ac. GMO wheat)
    - **Savannah land in Sub-Saharan Africa** (300 mil. ac. -- 10 percent of 3.1 bil. ac. of Savannah land)
- **Easy to underestimate supply growth**

# *Roots of the Current Food Crisis*

- **Ethanol, ethanol, ethanol**
- **Random weather events**
- **Speculation, expectations, panic, macroeconomic factors**
- **Low price regimen**
- **Dismantling of government stocks**
- **Reduced world-wide grain stocks**
- **...**

# *Roots of the Current Food Crisis*

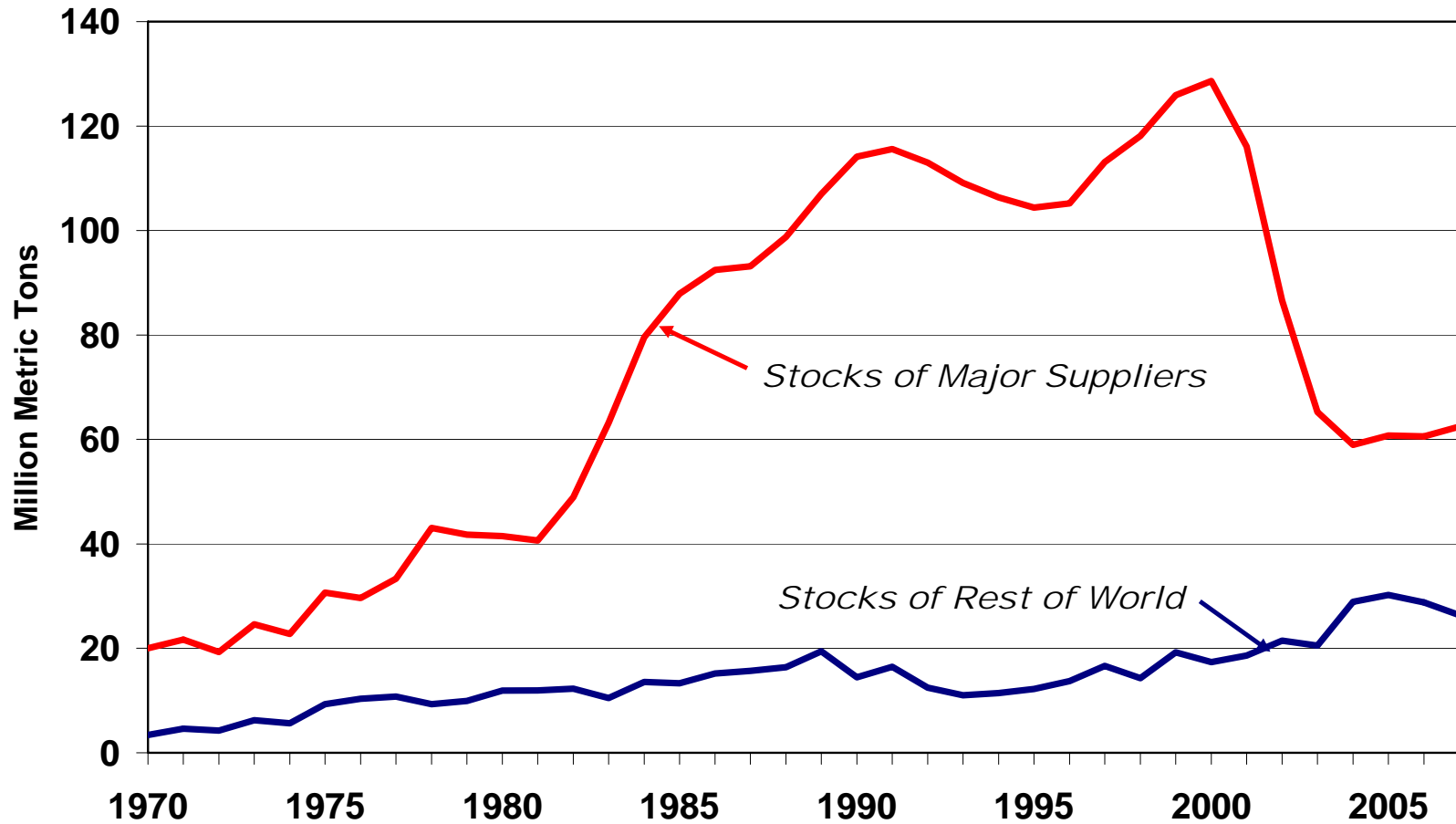
- **Low price regimen**
  - **US farm program design suppressed prices**
  - **Leaving little incentive to invest and expand production**

# *Roots of the Current Food Crisis*

- **Dismantling of government stocks**
  - Expectation that commercials would hold any needed stocks
  - Concerns about cost of government stocks programs
  - Concerns that stocks weighed down crop prices
  - No need for stocks program because with freer trade there will always be multiple sources

# Rice Ending Stocks

World and Major Suppliers: US, China, Thailand,  
India, Phillipines, and Indonesia



Source: USDA PS&D

# *Policy for All Seasons*

- **Assume the unexpected will happen**
  - Random policy and weather events do occur—**Plan for them**
- **Establishment of International Grain and Oilseed Reserve**
  - Moderate impacts of random policy and weather events by providing stable supply until production responds
  - Operated by an international commission—decision making/oversight
  - Stores strategically purchased/stored

# *Policy for All Seasons*

- **Keep productive capacity well ahead of demand**
  - Public investment in yield enhancing technologies and practices
- **Provide means to hold arable land in rotating fallow during periods of overproduction**
  - This land can then quickly be returned to production in the case of a crisis

# *Thank You*

---

## **Agricultural Policy Analysis Center**

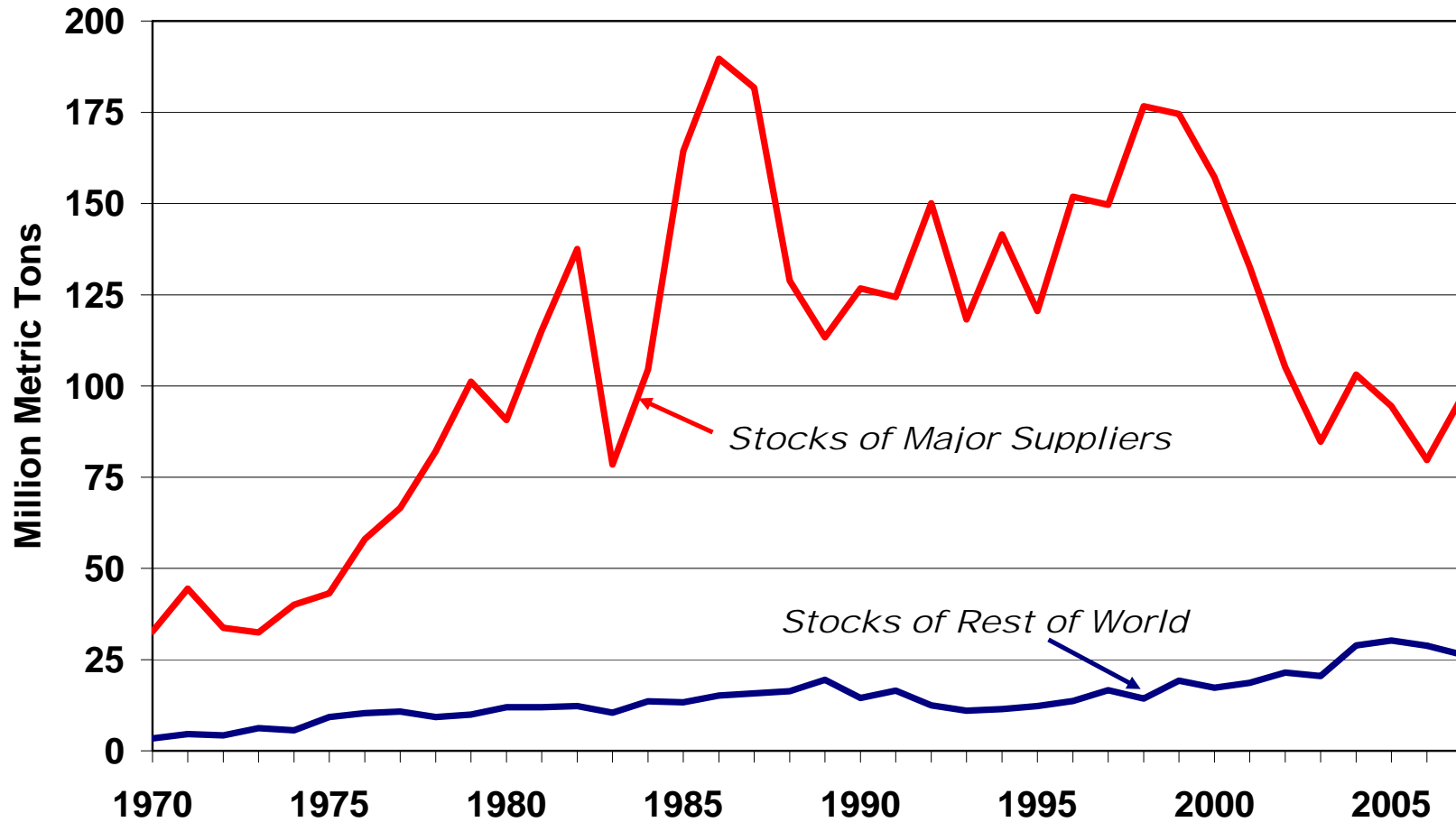
**The University of Tennessee  
310 Morgan Hall  
2621 Morgan Circle  
Knoxville, TN 37996-4519**

**[www.agpolicy.org](http://www.agpolicy.org)**



# Corn Ending Stocks

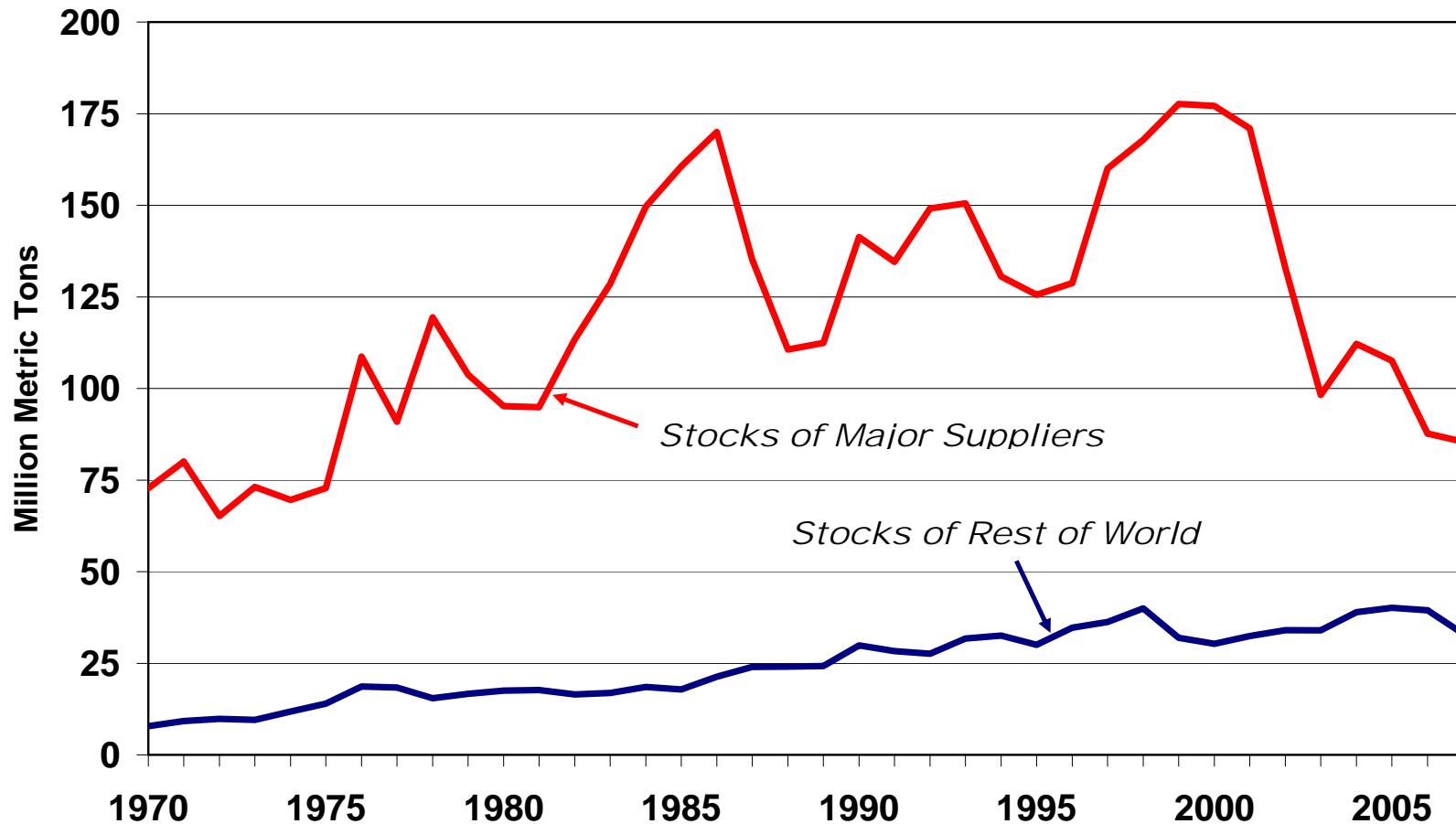
World and Major Suppliers: US, China, EU, Brazil, Mexico, Argentina



Source: USDA PS&D

# Wheat Ending Stocks

*World and Major Suppliers: US, China, India, Canada, Australia, Kazakhstan, Russia, Pakistan, Ukraine, Argentina*



Source: USDA PS&D