Mark S. Smolinski, M.D., M.P.H.
Vice President for Biological Programs
Global Health and Security Initiative

“Of all the various weapons of mass destruction, biological weapons are of the greatest concern to me...”

“…the one that scares me to death.”

General Colin Powell, Chairman, Joint Chiefs of Staff
Before the House Armed Services Committee
March 30, 1993

NTI

"Let's remember, those charged with protecting us from attack have to succeed 100 percent of the time.

To inflict devastation on a massive scale, the terrorists only have to succeed once, and we know they are trying every day

Dr. Condoleezza Rice, National Security Advisor
Before the National Commission on Terrorist Attacks
Upon the United States, April 8, 2004

NTI

“the anthrax incidents…sent two unambiguous messages:”

Our society is vulnerable to bioterrorism,
and we are not prepared.”

John Marburger, Director, Office of Science and Technology Policy
Executive Office of the President
Key note address on national preparedness, Biosecurity 2003
October 20, 2003

Institute of Medicine

Microbial Threats to Health

The best defense against any microbial threat is a robust public health system—in its science, capacity, practice, and through its collaborations with clinical and veterinary medicine, academia, industry, and other public and private partners.

Spectrum of Microbial Threats

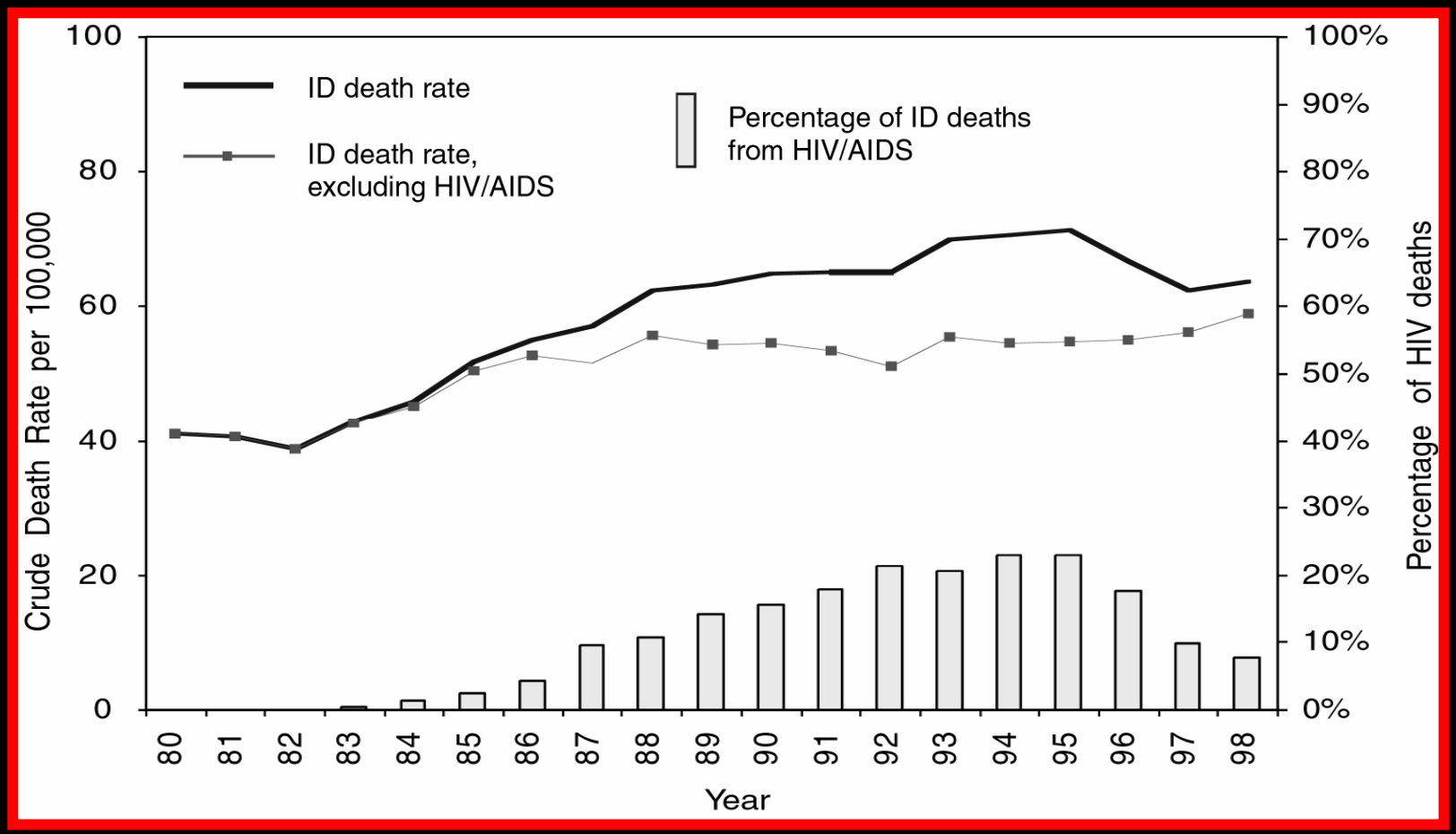
- Newly recognized pathogens
- New geographical spread
- Resurgence of endemic infections
- Antimicrobial-resistant infections
- Infectious etiology of chronic diseases
- Intentional use of biological agents

Leading Infectious Causes of Death Worldwide

Cause	Rank	~Number of Deaths
Respiratory infections	1	3,871,000
HIV/AIDS	2	2,866,000
Diarrheal diseases	3	2,001,000
Tuberculosis	4	1,644,000
Malaria	5	1,124,000
Measles	6	745,000
Pertussis	7	285,000
Tetanus	8	282,000
Meningitis	9	173,000
Syphilis	10	167,000

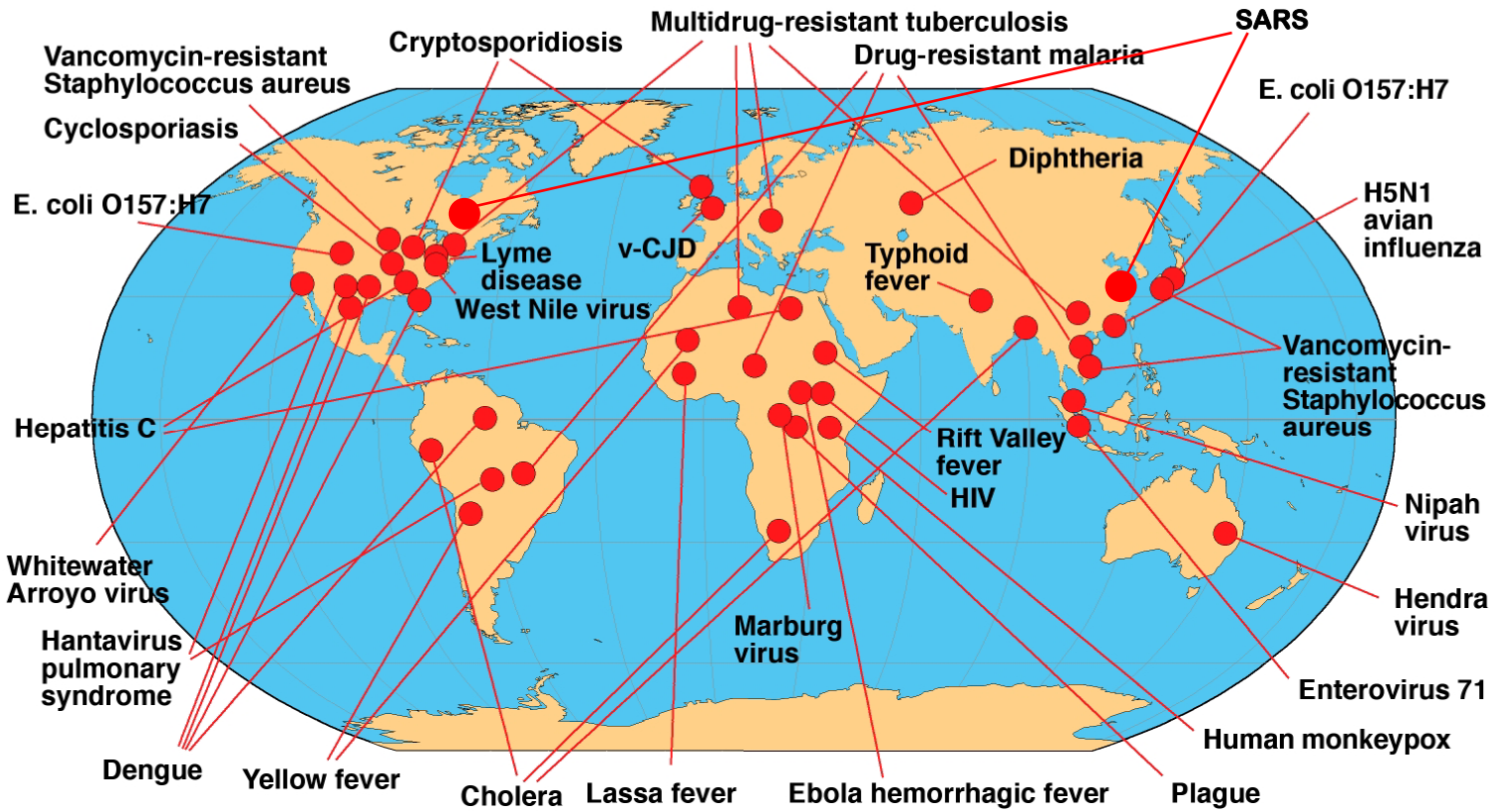
Source: WHO, 2002

Infectious Disease Deaths in the U.S.



Source: Pinner, 2002

Recent Microbial Threats



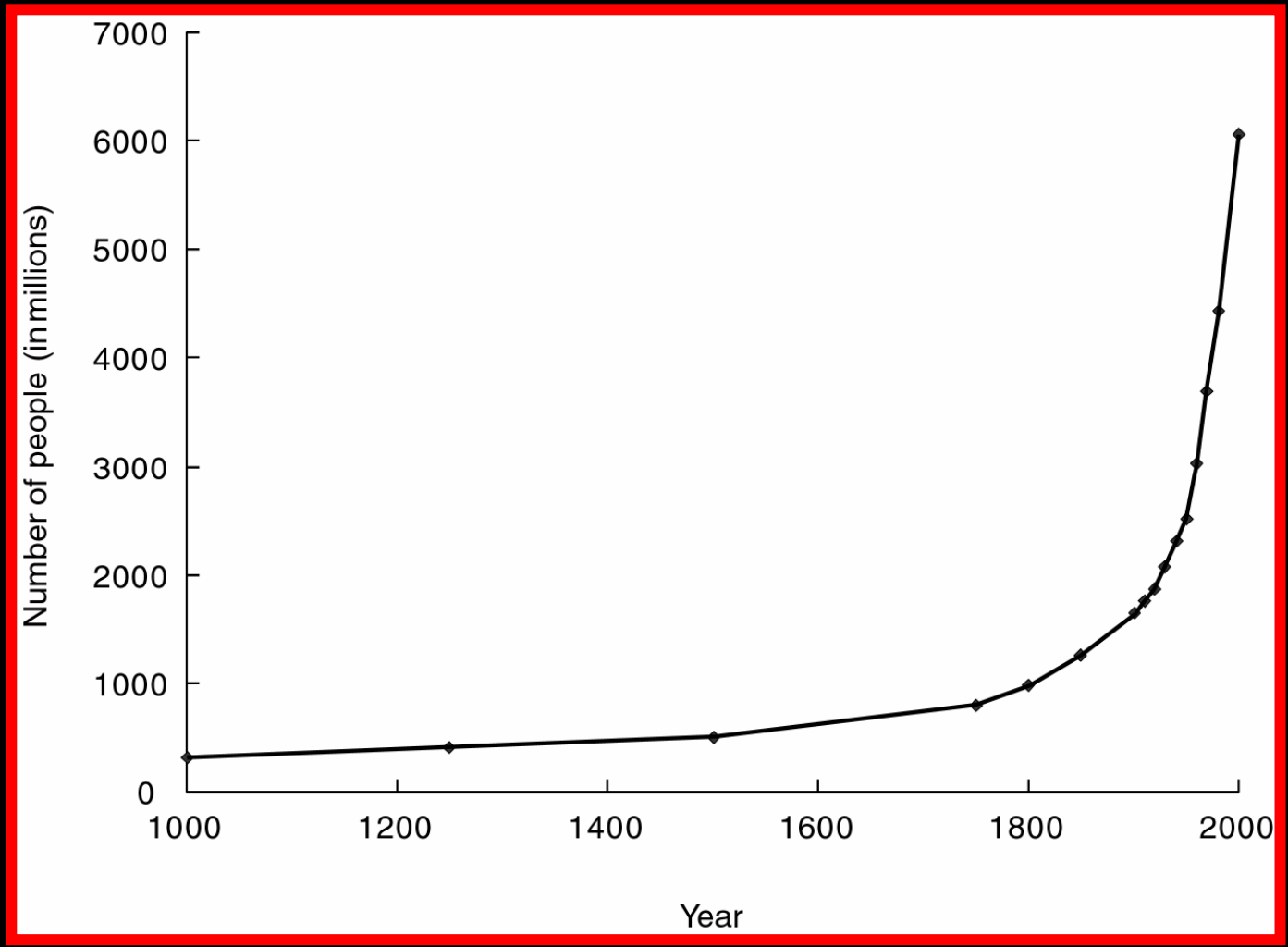
Factors in Emergence

- Human demographics and behavior
- Technology and industry
- Economic development and land use
- International travel and commerce
- Microbial adaptation and change
- Breakdown of public health measures

Factors in Emergence

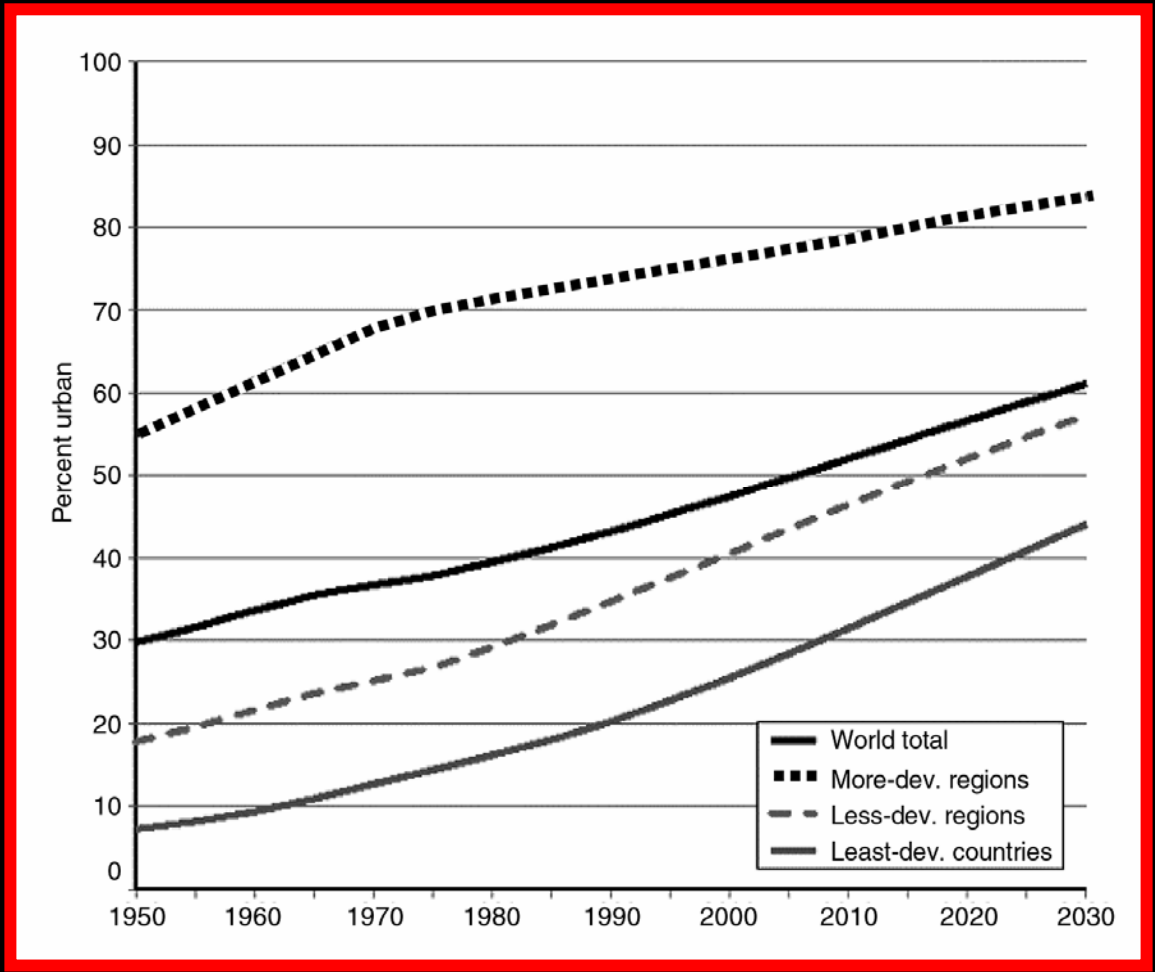
- Human susceptibility to infection
- Climate and weather
- Changing ecosystems
- Poverty and social inequality
- War and famine
- Lack of political will
- Intent to harm

The Human Population Explosion



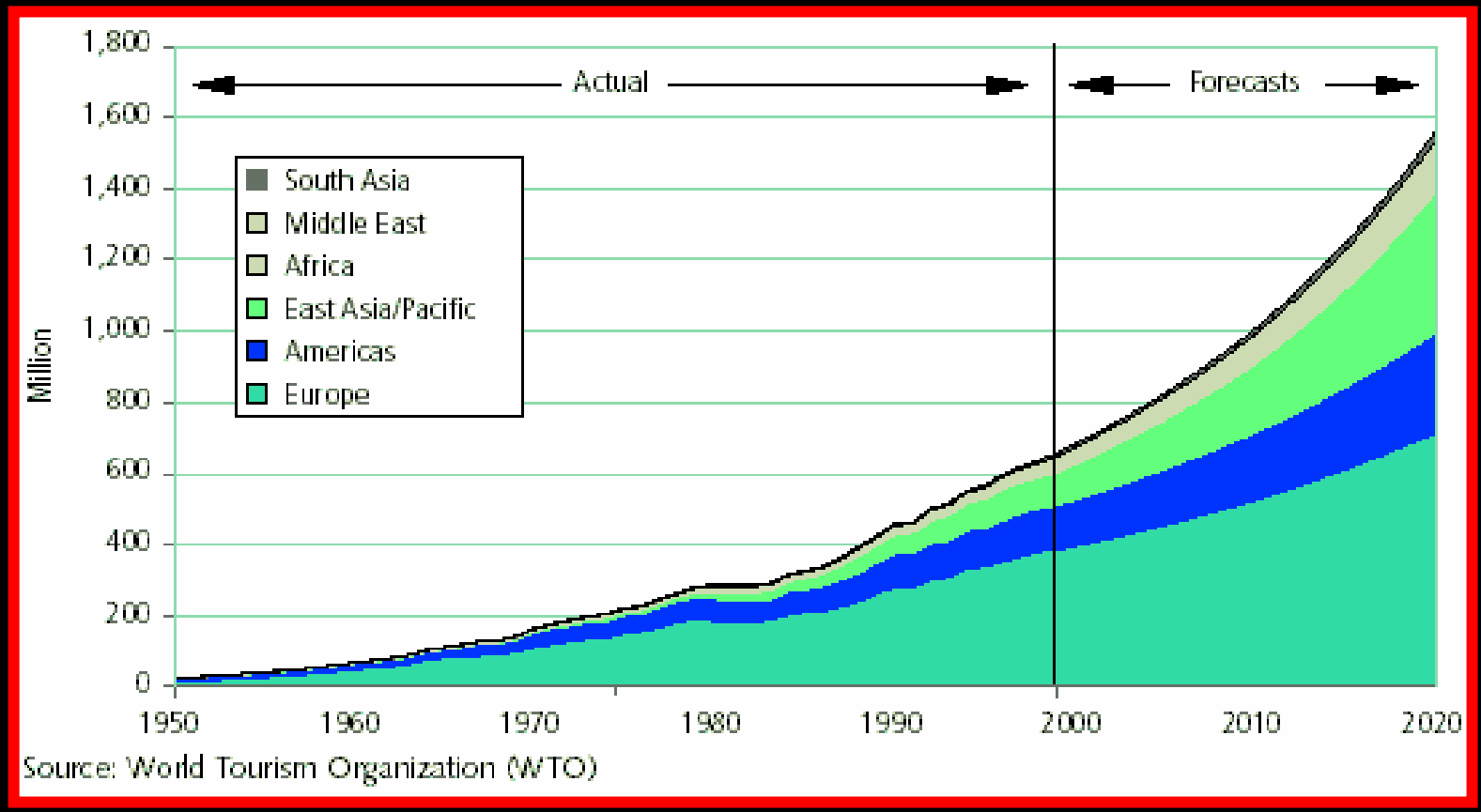
Source: UN, 1999

World Urbanization Trends



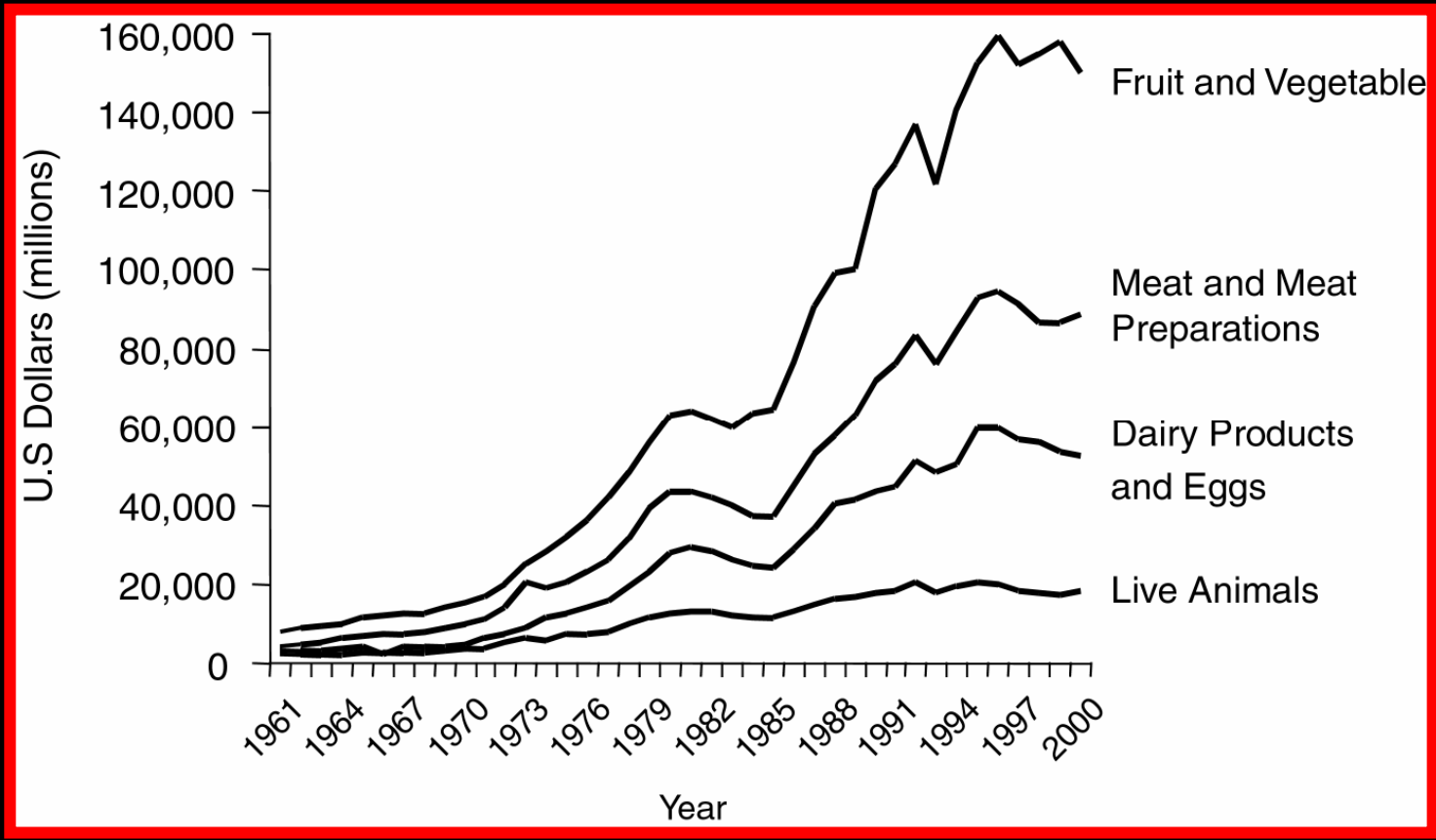
Source: UN, 1999

International Tourists Arrivals



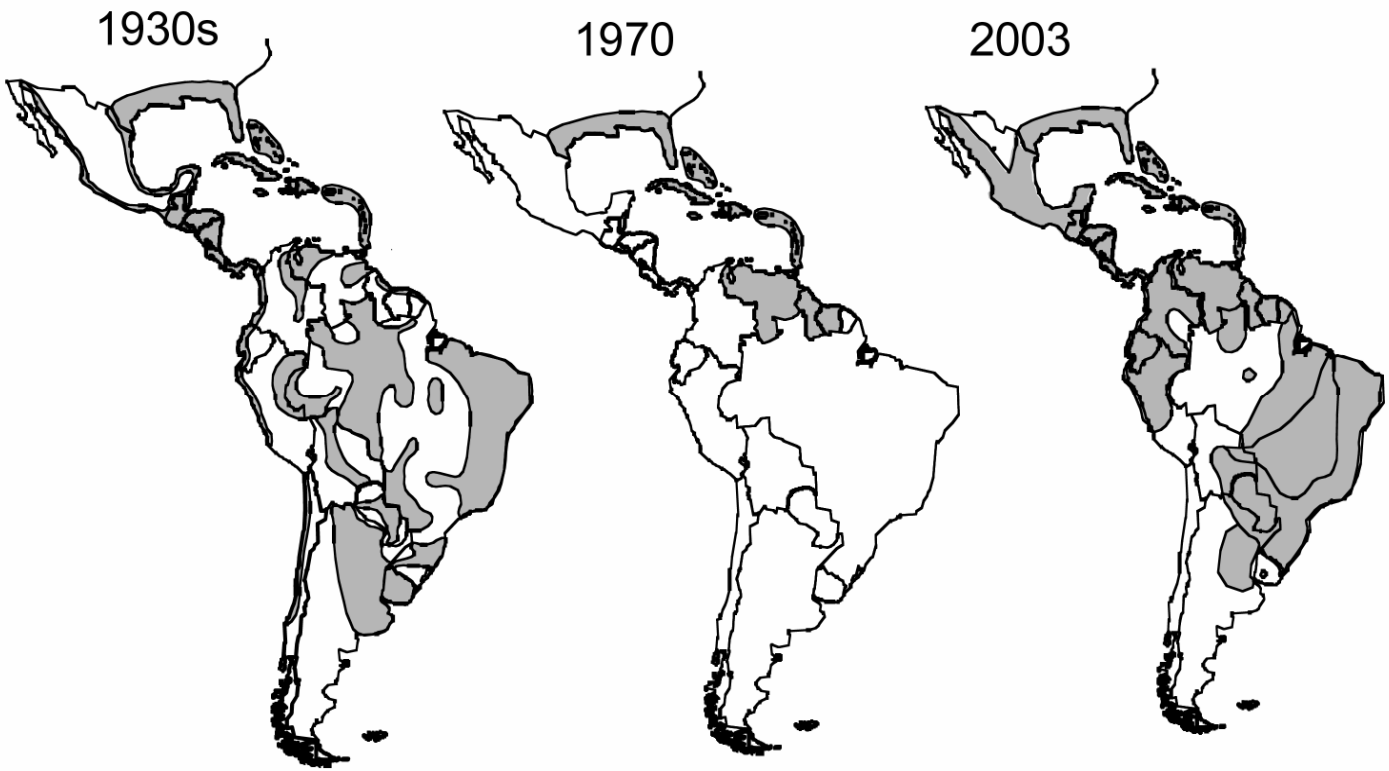
WTO, 2002

International Agricultural Trade



Kimball, 2001

Vector Control ?



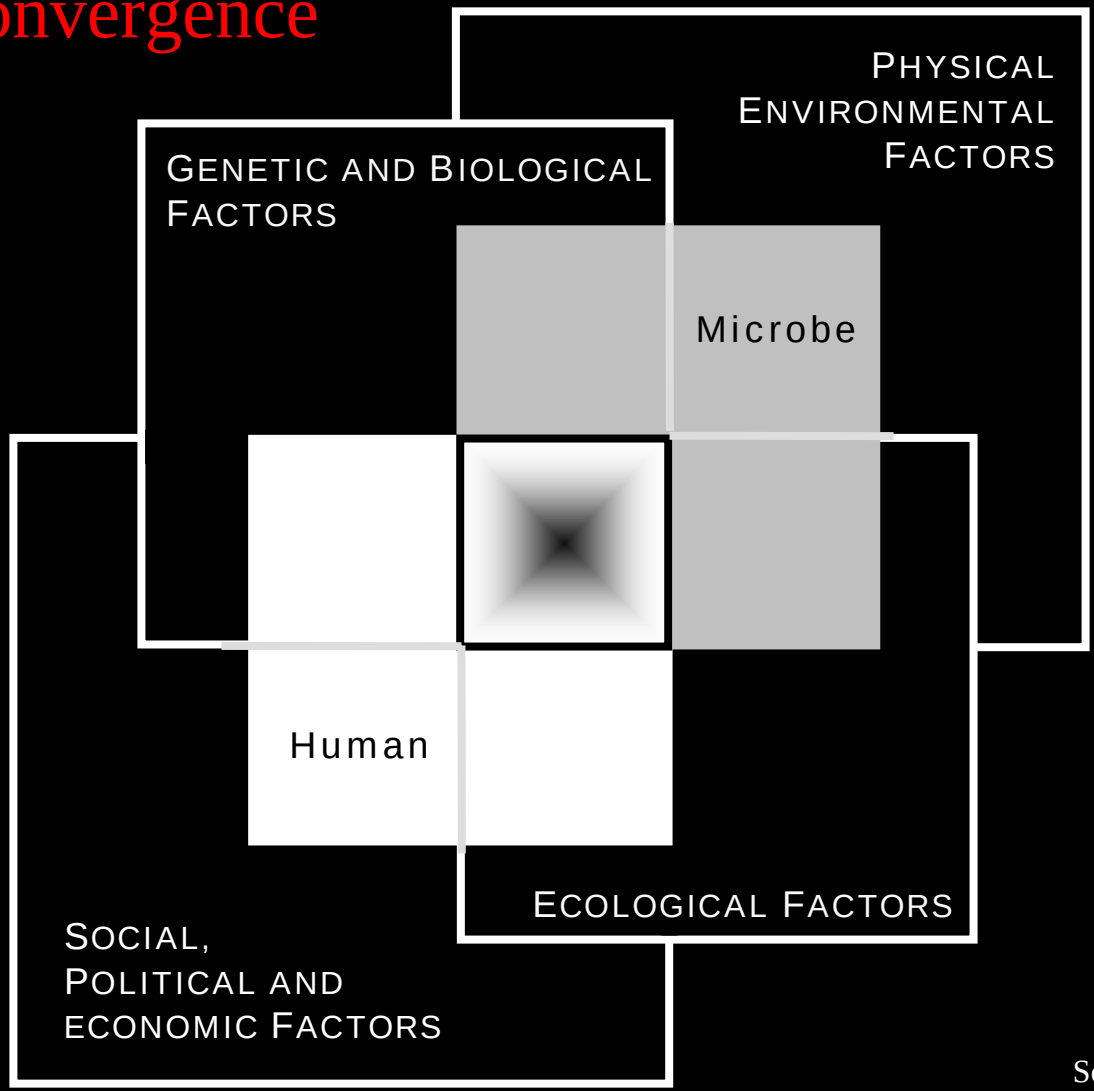
Distribution of *Aedes aegypt* in the Americas

Source: CDC

New World Hantavirus

Source: CDC

The Convergence Model



Source: IOM 2003

IOM Recommendations

- Improve global surveillance and response
- Rebuild domestic public health capacity
- Improve disease reporting
- Explore innovative systems of surveillance
- Develop and use diagnostics
- Educate and train the workforce
- Develop vaccines and antimicrobials
- Ban inappropriate antimicrobial use in animals
- Improve vector-borne disease control
- Develop comprehensive research agenda


IT'S PROBABLY MONKEY POX SARS OR THE WEST NILE VIRUS
WHATEVER HAPPENED TO THE COMMON COLD?
STAHLER.