

# Considerations in a Road-Map for Technical Cooperation for Veterinary Public Health: One Health and Sustainable Development Goals

Dr. Peter J. Fernandez

USDA, APHIS

Regional Director for Latin America and the  
Caribbean

# Background

- Food safety, emerging and re-emerging zoonoses, and environmental disasters have become a global priority
- PAHO efforts in Veterinary Public Health (VPH) and alignment with “One Health” (OH) approach have always been focused towards
  - Improvement of the population health through human health-animal health-environment interface
  - Requiring inter-sectorial and inter-institutional governance mechanisms and processes
  - Furthering health goals included in 2030 Agenda for Sustainable Development

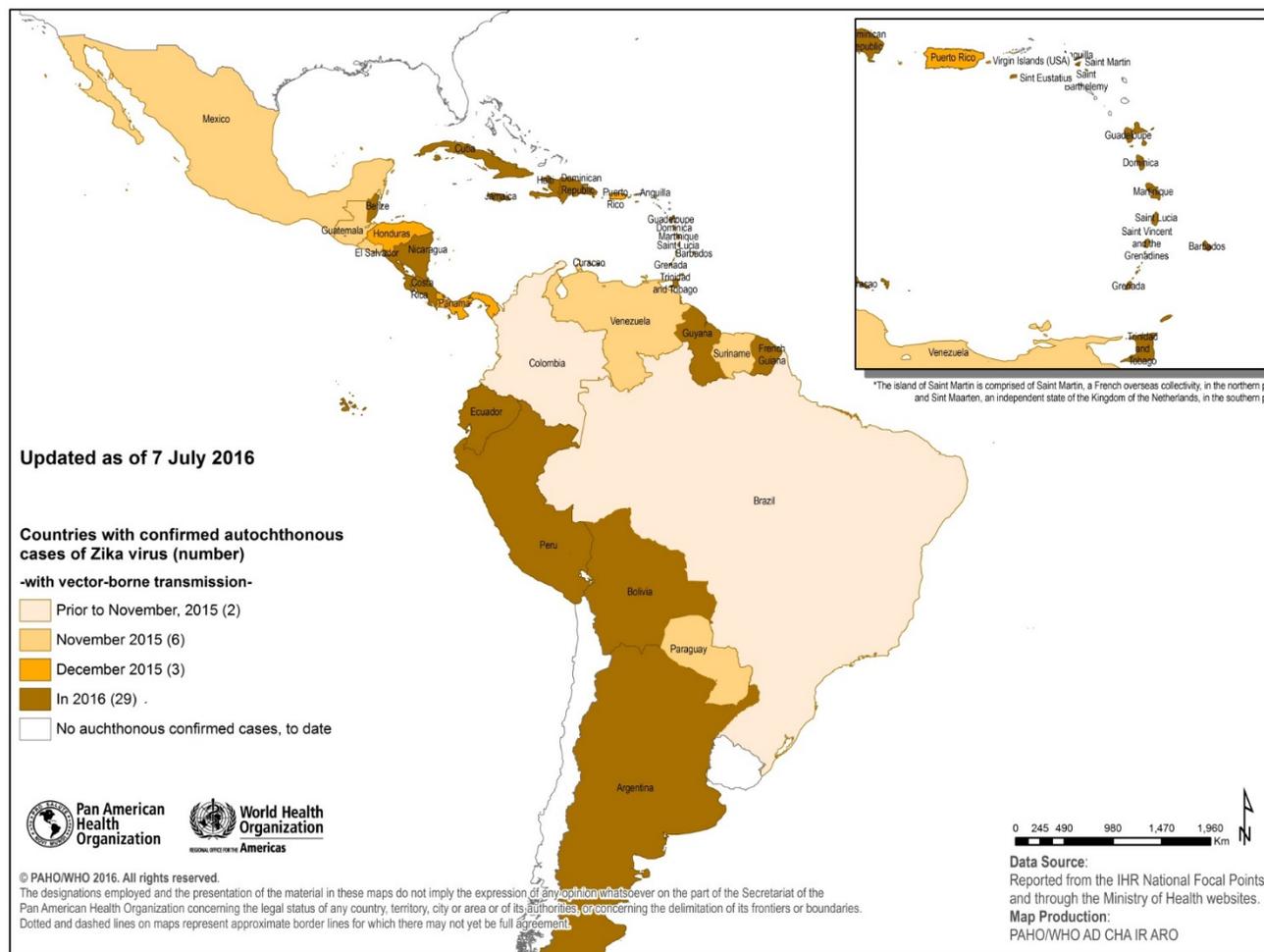
# Background

- PAHO-led cooperative programs and strategies have historically incorporated a “One Health” approach
  - Continental eradication of foot-and-mouth disease
  - Regional elimination of human rabies transmitted by dogs
  - Promotion of food safety: from farm to fork
  - Elimination of hydatid disease from Southern Cone
  - Combating neglected zoonoses related to poverty
- Supporting development of public and animal health services

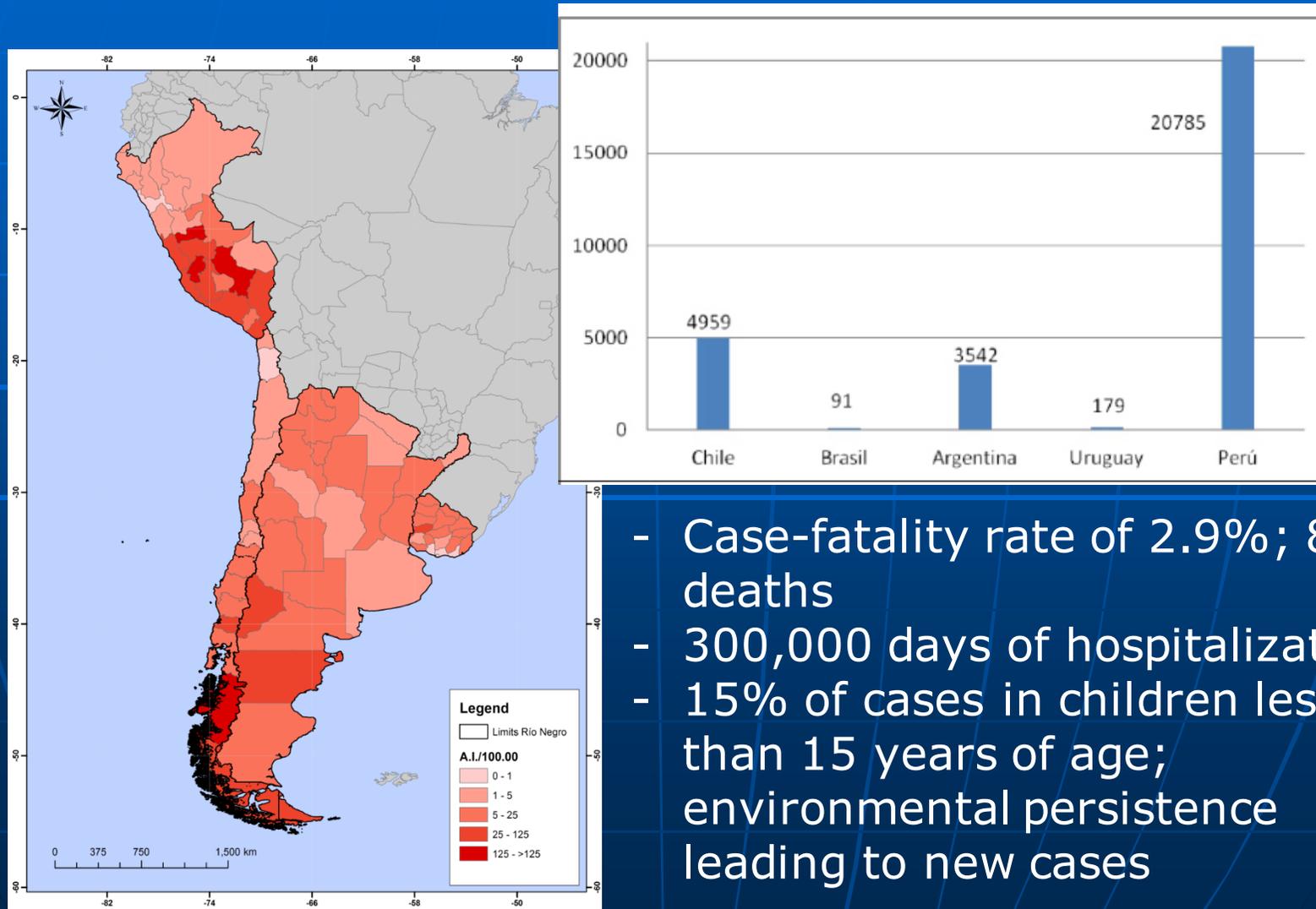
# Presentation Summary

- Recent Health Events related to PVH and OH
- The “One Health” Concept
- The Sustainable Development Goals
- The Veterinary Public Health Concept
- A “Foreseeable Future” in PVH and OH
- A Possible “Road Map” for Technical Cooperation in Veterinary Public Health

# Zika in the Americas

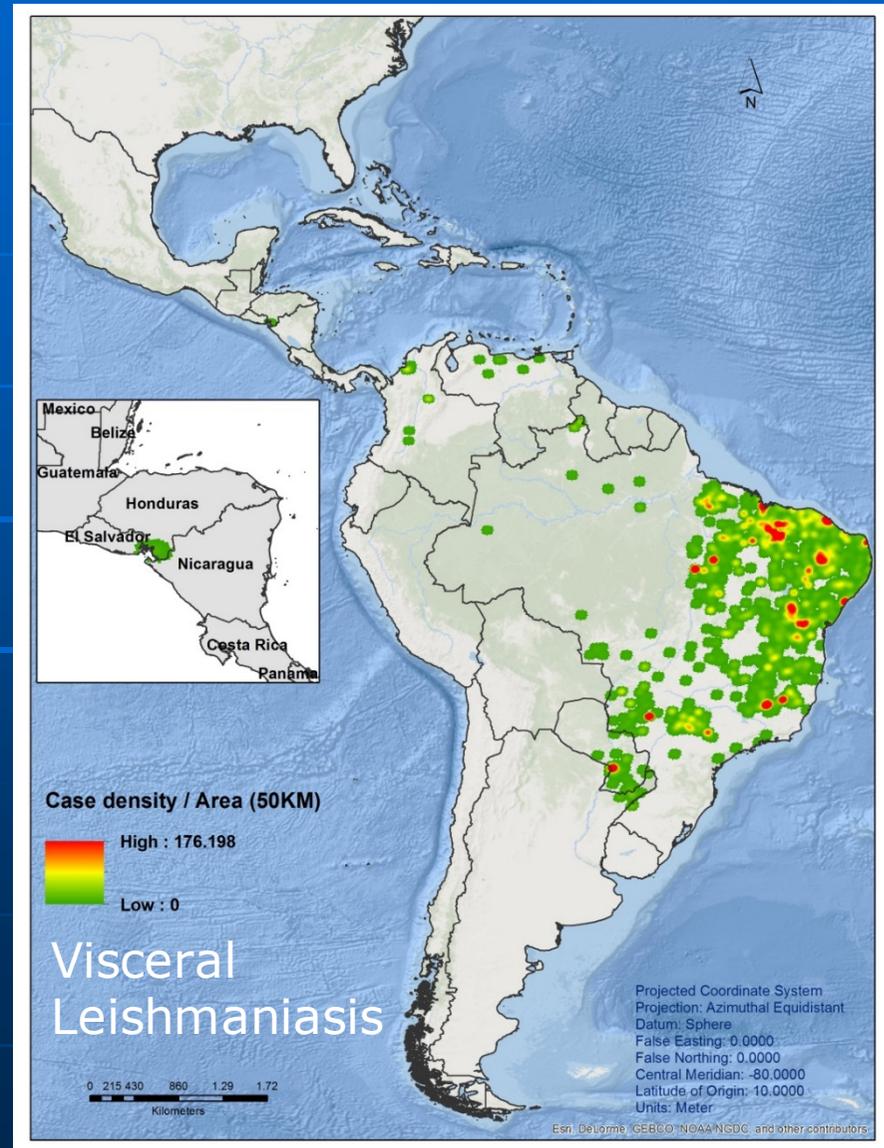
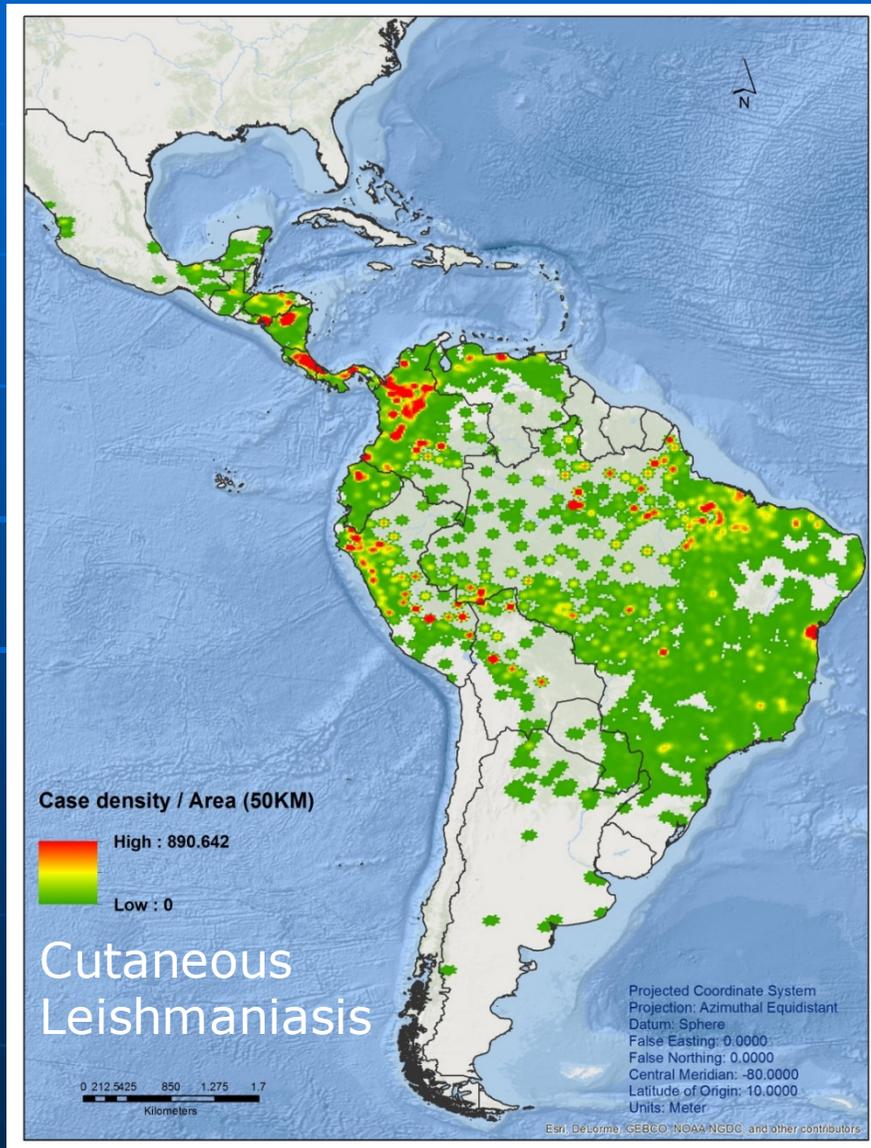


# Cystic Echinococcosis in the Southern Cone: 2009 - 2014



- Case-fatality rate of 2.9%; 820 deaths
- 300,000 days of hospitalization
- 15% of cases in children less than 15 years of age; environmental persistence leading to new cases

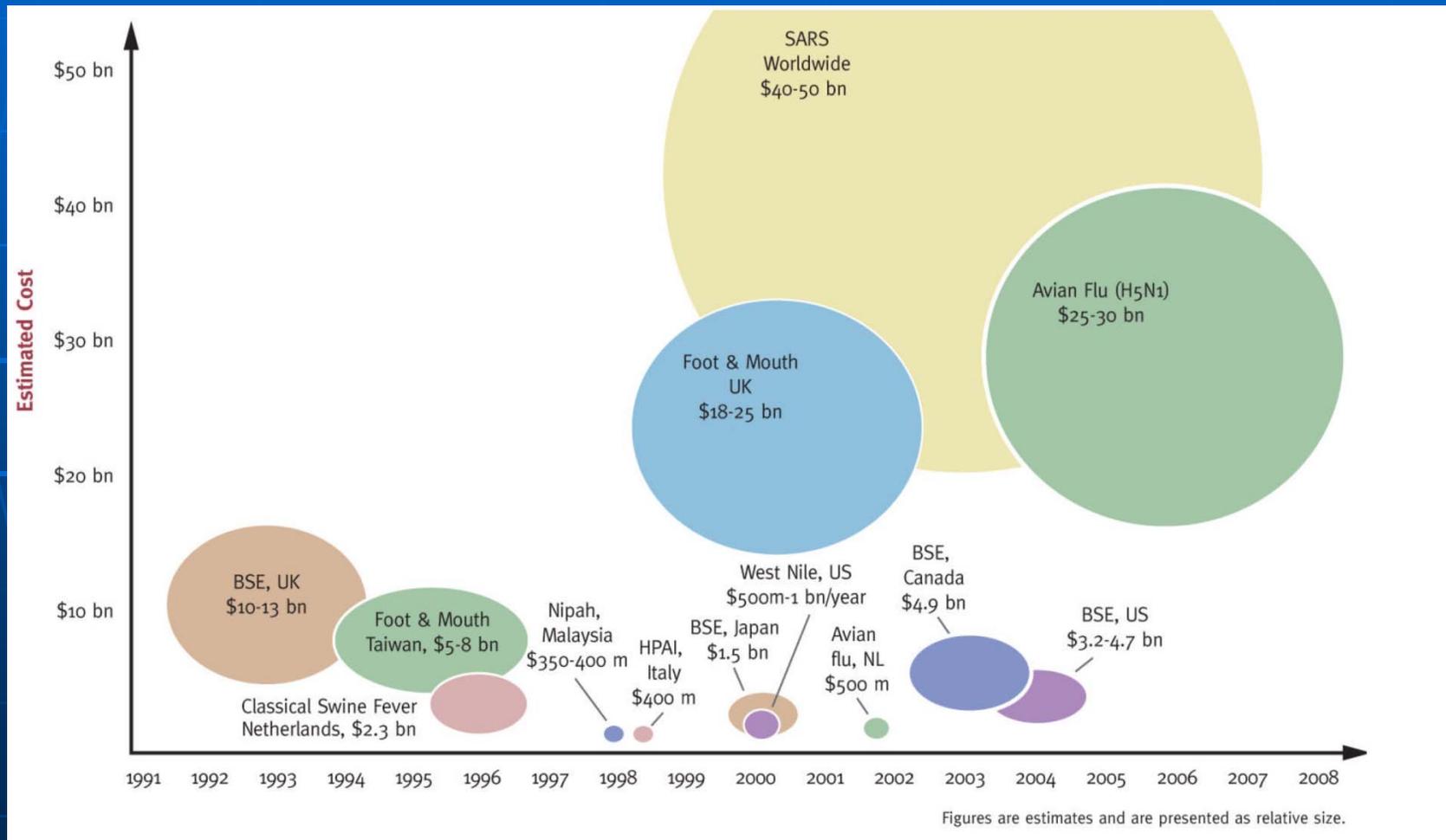
# Leishmaniasis in the Americas



# Human Rabies transmitted by Animals

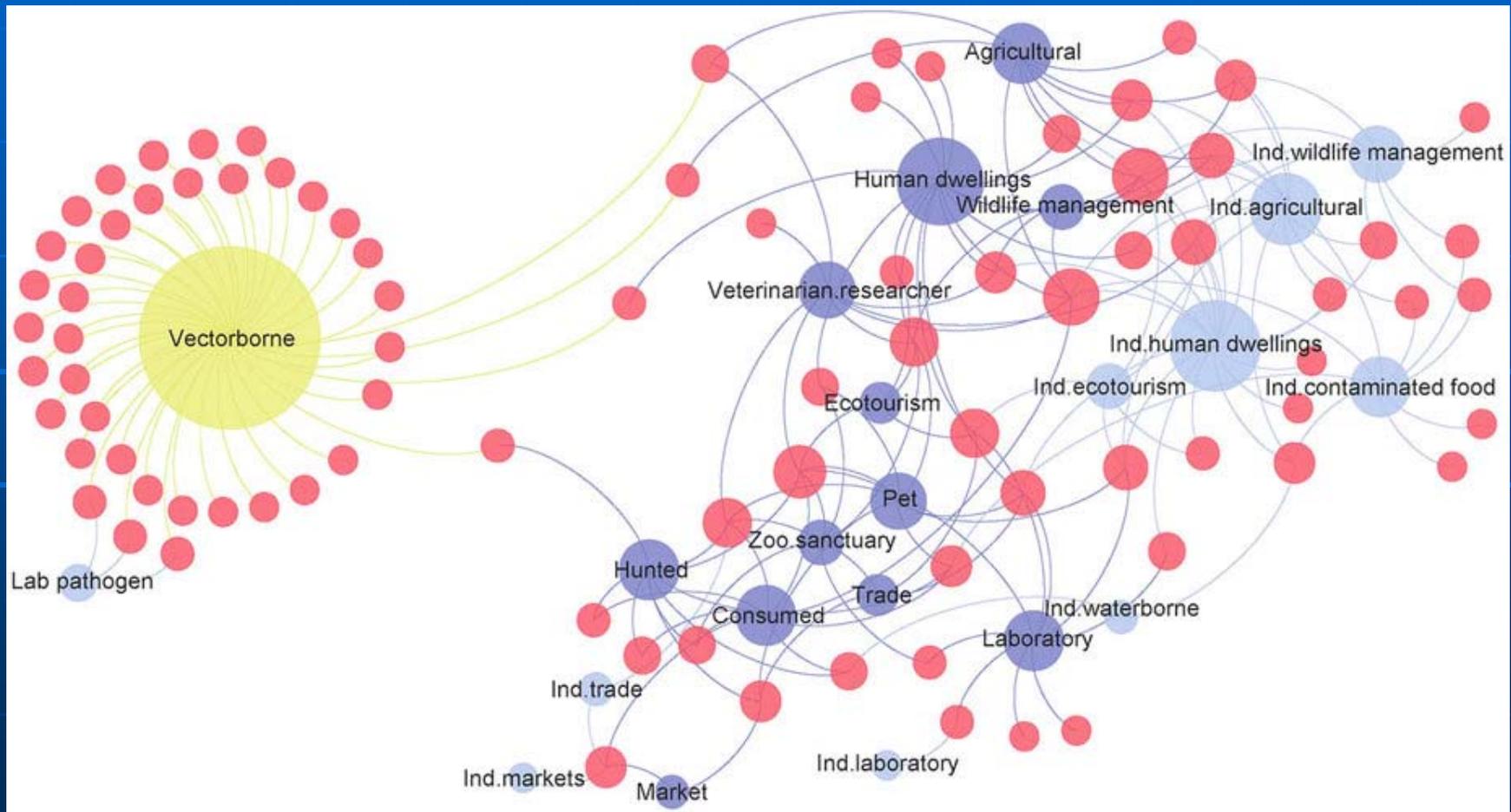


# Economic Impact of Some Recent Infectious Disease Outbreaks



From: Bio Economic Research Associates ([www.bio-era.net](http://www.bio-era.net))

# Epidemiologic Network Map: high-risk zoonotic disease transmission



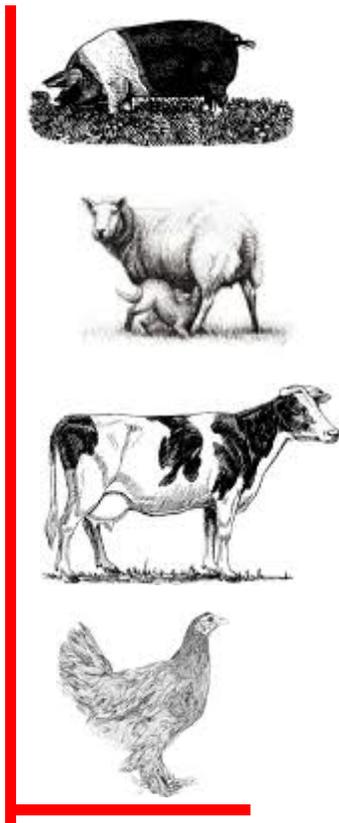
Kreuder Johnson, et. al. Spillover and pandemic properties of zoonotic viruses with high host plasticity. *Sci. Rep.* 5, 14830 (2015).

# Zoonotic Risk by Animal Groups

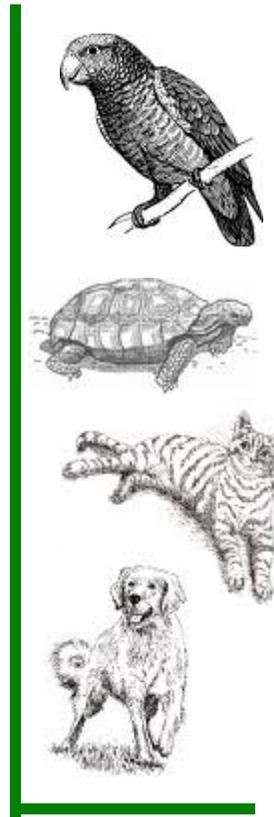
Wildlife



Farmed



Companion/  
Exotic pet

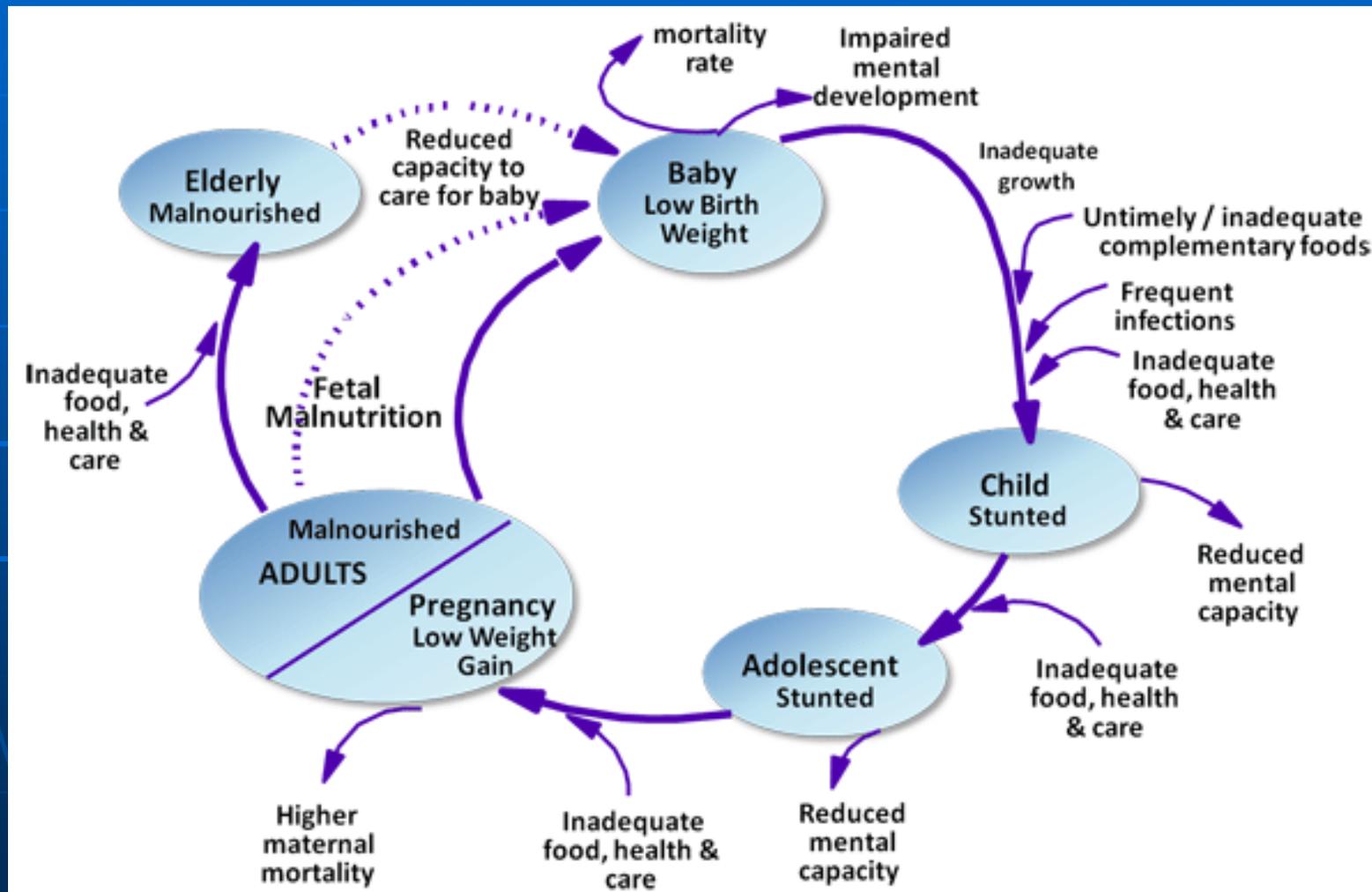


Other synanthropic



*Campylobacter*, *Salmonella*, *E. coli*, *Leishmaniasis*, *Toxoplasmosis*, *Brucellosis*, *West Nile*, *Salmonella*, *Trichinella*, *Mange*, *Tularemia*, *Rabies*, *Ringworm*, *Echinococcosis*, *Nipah*, *Leptospirosis*, *Salmonella*, *Rabies*, *Avian influenza*, *Hantavirus*, *Antibiotic resistance*, *Cryptosporidiosis*, *Q fever*, *Strep. suis*, *Cat scratch disease*, *Anthrax*

# Consequences of Malnutrition

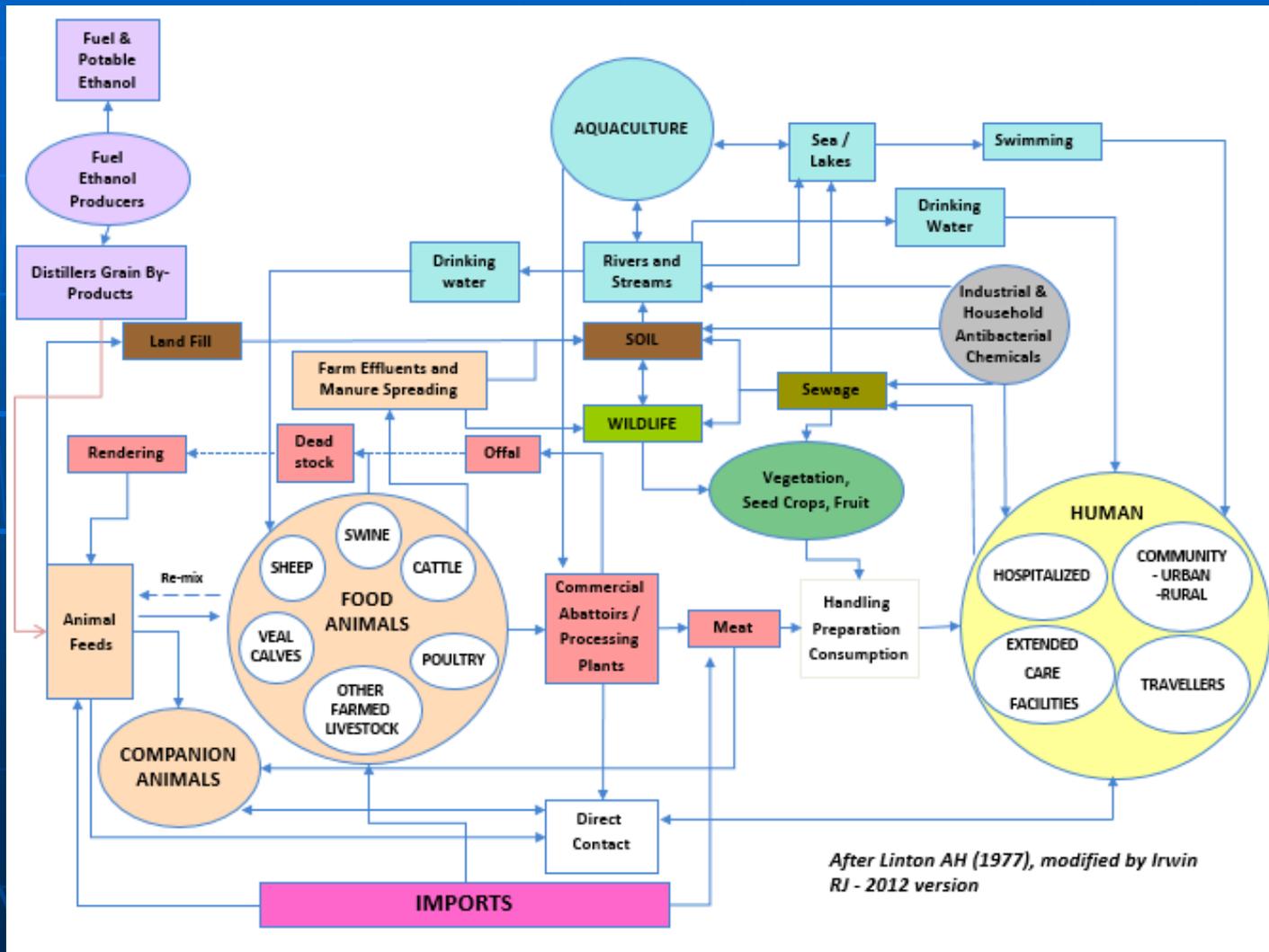


Adapted from ACC/SCN (2000) Fourth Report on the World Nutrition Situation. Geneva: ACC/SCN in collaboration with the International Food Policy Research Institute.

# Major El Niño Related Health Risk



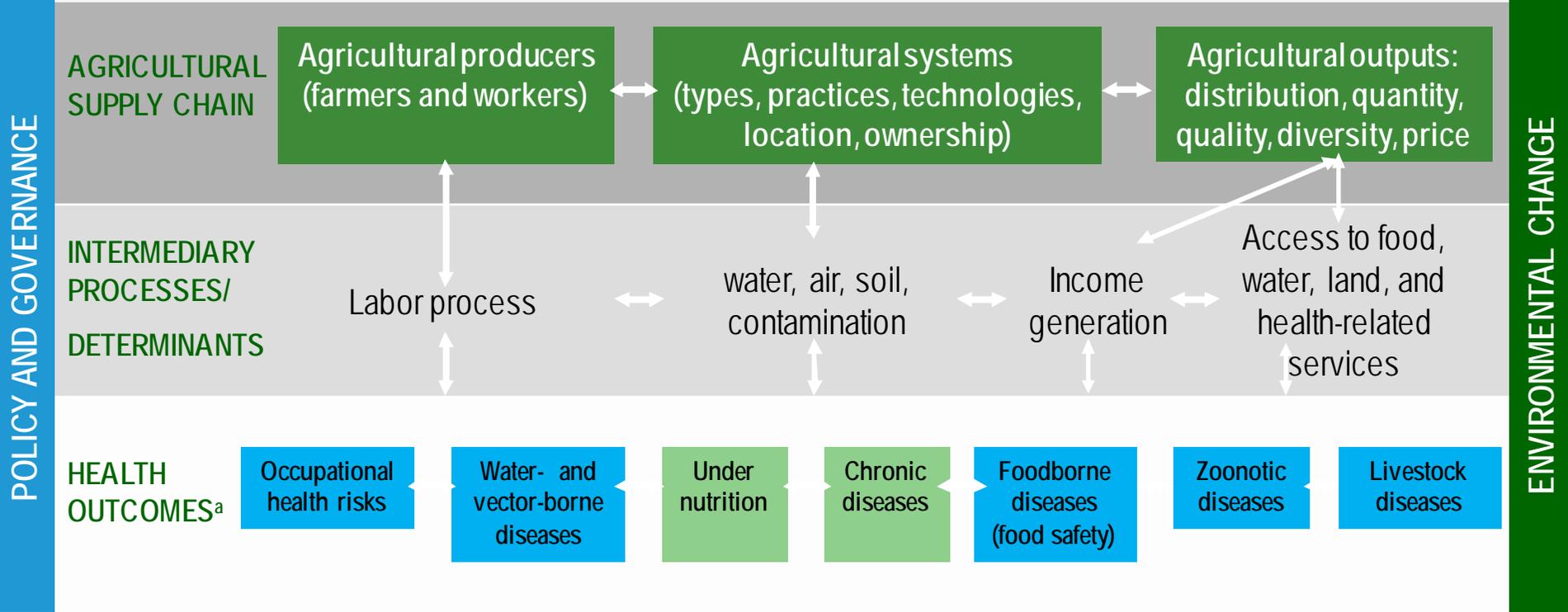
# Tangled Factors of Antimicrobial Resistance



# “One Health”

- Inextricable relation between animal, human and environment health
- Humans are part of a global habitat; sharing the world with animals and plants
- Humans and animals share the majority of known infectious agents
- Approximately 60% of emerging diseases are classified as zoonotic
- Human health also benefits from animals (e.g. animals production for food, animals as models for research of human diseases, and pet-assisted therapy)
- One Health as the base of “governance of intersectoral, inter-programmatic and interdisciplinary efforts necessary to promote and protect the health status of people, animals and the environment”

# Conceptual Framework of the Links Between Agriculture and Health



Veterinary Public Health — One Health —  
Food Security & Food Safety

# “One Health” Across Institutions

- FAO, OIE and WHO 2010 Agreement : sharing responsibilities and coordinating global activities to address the health risks at the human-animal-ecosystem interface
- Region of the Americas context:
  - Mechanism for technical cooperation that allow the integration of the OH concept
  - Through Tripartite Agreement, PANAFTOSA promotes leadership of health-agriculture-environment partnerships
  - Other important regional and sub-regional partners



# Challenges to “One Health”

- Human innate resistance to change
- Institutional silos and interests of their constituencies
- Contested institutional leadership to drive change
- Engagement with the environmental sector
- Identification and quantification of the benefits within and among the three sectors animal health, public health and the environment

# Sustainable Development Goals (SDG)

- First incorporation of concept in Brundtland Report (1987) by the UN World Commission on Environment and Development:

*“... the development that meets the needs of the present without compromising the ability of future generations to meet their own needs”*

- These Goals are "three-dimensional" in nature, bringing together the three pillars of sustainable development:
  - **Economic:** continuing to produce wealth to meet the needs of the world population;
  - **Social:** reducing inequalities between peoples;
  - **Environmental:** preventing degradation of the environment that future generations will inherit

# Sustainable Development Goals (SDG)

- The 2030 Agenda for Sustainable Development, approved by the General Assembly of the UN (2015), provides for a Plan of Action that includes 17 goals and 169 targets
- SDGs are integrated and indivisible, balancing three pillars of sustainable development (the economic, social and environmental) of global application while taking into account the different realities, capacities and levels of development of each country, respecting their national policies and priorities



**1** NO POVERTY



**2** ZERO HUNGER



**3** GOOD HEALTH AND WELL-BEING



**4** QUALITY EDUCATION



**5** GENDER EQUALITY



**6** CLEAN WATER AND SANITATION



**7** AFFORDABLE AND CLEAN ENERGY



**8** DECENT WORK AND ECONOMIC GROWTH



**9** INDUSTRY, INNOVATION AND INFRASTRUCTURE



**10** REDUCED INEQUALITIES



**11** SUSTAINABLE CITIES AND COMMUNITIES



**THE GLOBAL GOALS**  
For Sustainable Development

**12** RESPONSIBLE CONSUMPTION AND PRODUCTION



**13** CLIMATE ACTION



**14** LIFE BELOW WATER



**15** LIFE ON LAND



**16** PEACE AND JUSTICE STRONG INSTITUTIONS



**17** PARTNERSHIPS FOR THE GOALS



# Veterinary Public Health (VPH)

- Veterinary science has a long and distinguished history of contributing to promote and protect public health

*"the sum of all contributions to the physical, mental and social well-being of humans through an understanding and application of veterinary science" (WHO, 1999)*

- Human health is inextricably linked to animal health and production
  - Especially amongst developing regions where animals provide transportation, draught power, fuel and clothing as well as high value proteins (meat, eggs and milk)
- Risks for developing and industrialized countries at the human-animal interface can lead to serious public health and economic consequences

# PAHO VPH Contributions

- PAHO established its VPH program in 1949
- Technical unit consolidated at PANAFTOSA, Brazil, with technical assessors at country level, supported by policy and technical committees

# PAHO VPH Contributions

- PAHO's wide scope for VPH:
  - Multi-disciplinary: not only involving veterinarians
  - Intersectoral: food, agriculture, health, environment, wildlife, pet owners, animal welfare, others sectors
  - Range of Contributions:
    - Zoonotic and foodborne diseases surveillance and control
    - Food safety
    - Antimicrobial resistance of animal origin
    - Food security, nutrition and agricultural outputs
    - Socioeconomic development (trade, employment)
    - Subsistence farming
    - Commercial livestock sector
    - Rural (urban) enterprises (indigenous people/vulnerable groups)

# VPH and the SDGs

- The VPH contributes to most of SDGs, particularly
  - **SDG 1** to end poverty in all its forms
  - **SDG 2** to end hunger, achieve food security and improve nutrition and promote sustainable agriculture
  - **SDG 3** to ensure healthy lives and promote well-being for all at all ages,; and
  - **SDG 13** to take urgent action to combat climate change and its impacts

1 NO POVERTY



2 ZERO HUNGER



3 GOOD HEALTH AND WELL-BEING



13 CLIMATE ACTION



# VPH and the SDGs

- Two of the nine targets and one of the four means of implementation of **SDG 3** have a direct relationship with PANAFTOSA'S technical cooperation:
  - Zoonoses and emerging infectious diseases
  - Food safety, foodborne diseases, integrated surveillance of antimicrobial resistance/responsible use
  - Eradication of Foot-and-Mouth Disease and strengthening of veterinary services

1 NO POVERTY



2 ZERO HUNGER



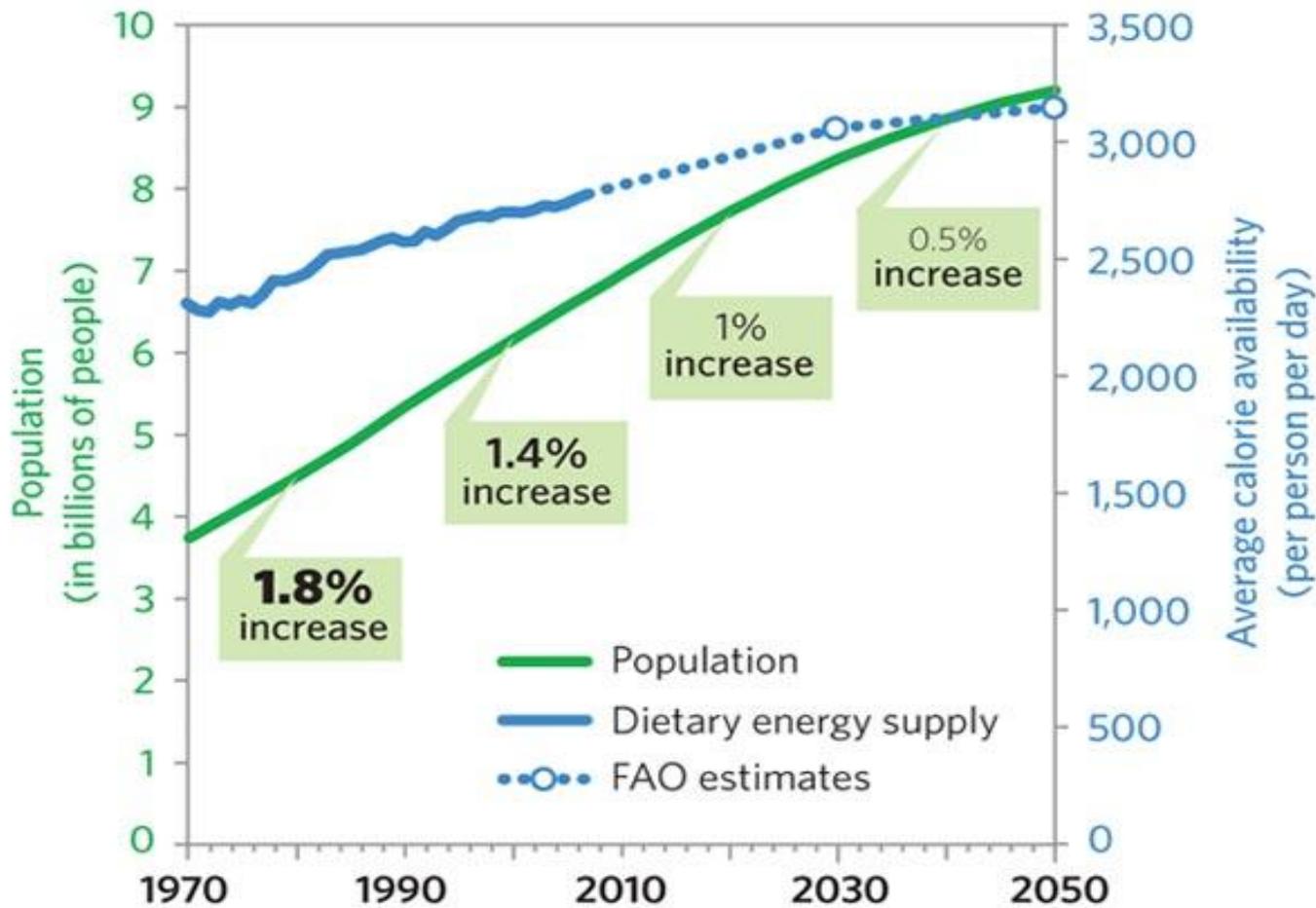
3 GOOD HEALTH AND WELL-BEING



13 CLIMATE ACTION



# Food Security Threat

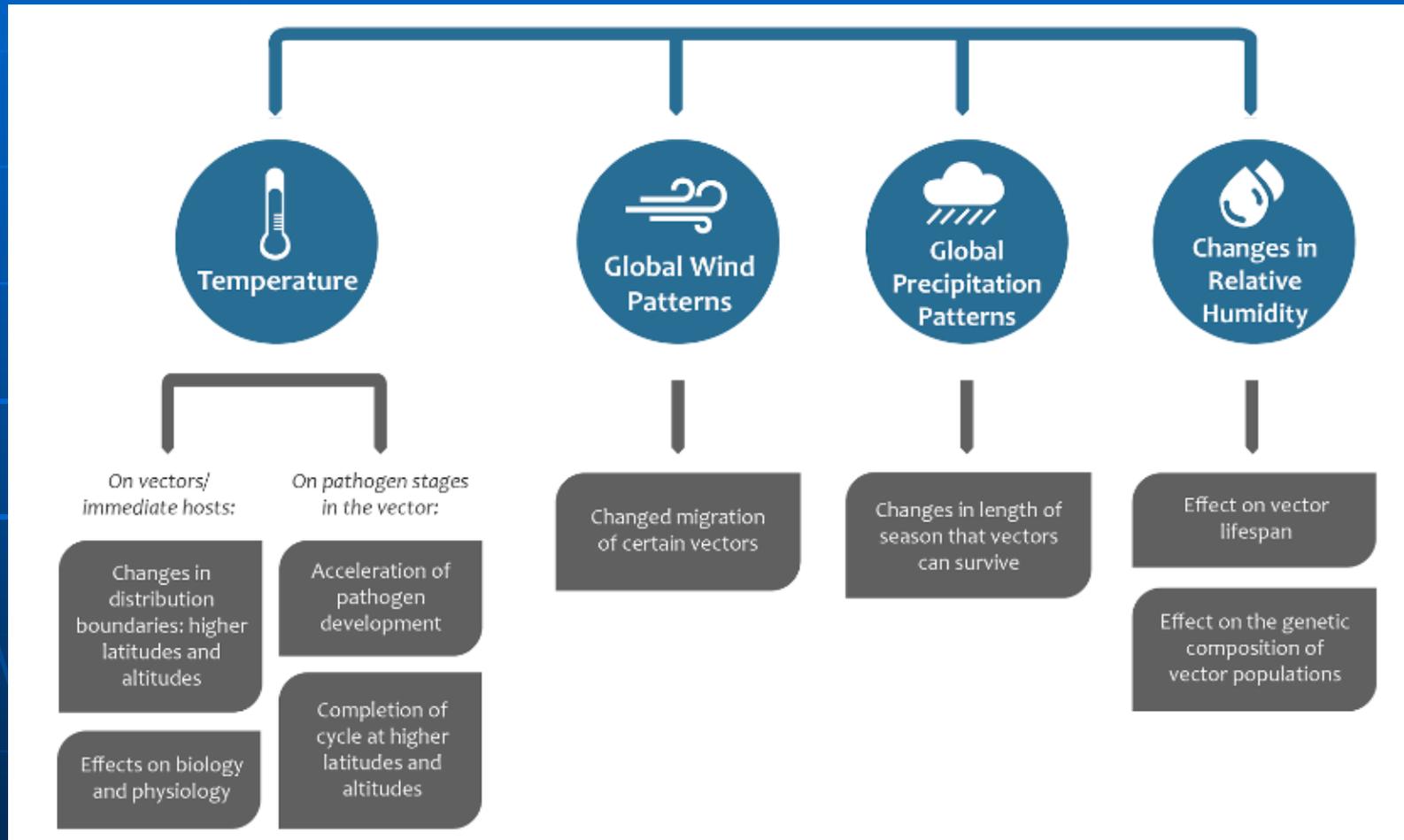


# Americas Free of FMD



The Region of the Americas, particularly South America, is working towards the final elimination of FMD, and in the near future we foresee the whole Region being free from FMD without vaccination

# Impact of Climate Change on Disease Vectors

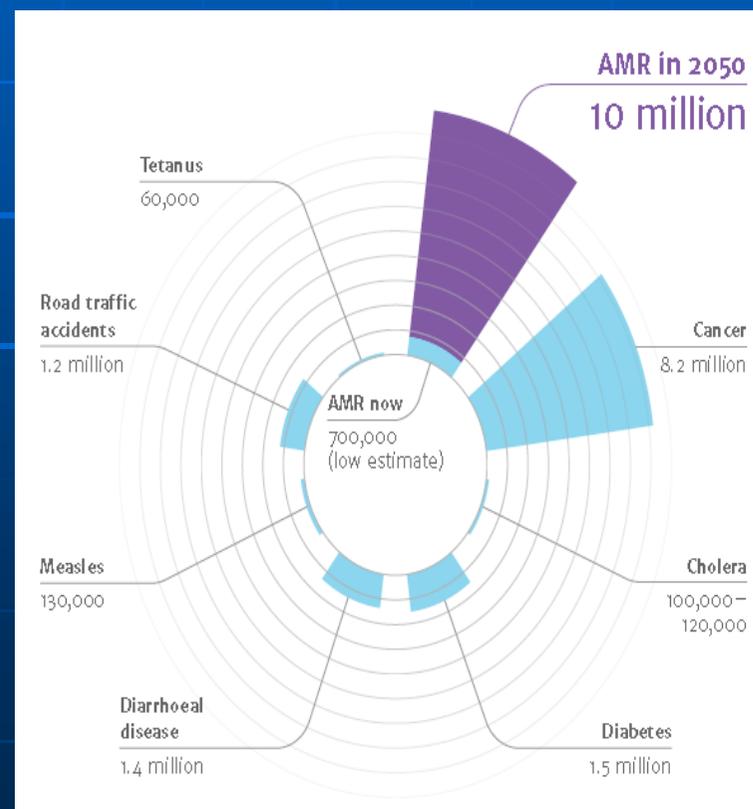


Source : <http://climatenexus.org/learn/public-health-impacts/climate-change-and-vector-borne-diseases> with data from [Earth\\_Institute\\_at\\_Columbia\\_University \(http://www.ciesin.org/docs/001-007/fig5.gif\)](http://www.ciesin.org/docs/001-007/fig5.gif)

# The Elephant in the Room



“ Indeed, even at the current rates, it is fair to assume that over one million people will have died from AMR since I started this Review in the summer of 2014. ”



# Strategic Considerations for a “Road Map” for Technical Cooperation in Veterinary Public Health

- To incorporate the Veterinary Public Health and "One Health" approach into the strategy of governance among institutions and players involved in interface health-agriculture-environment thus contributing to achievement of objectives of sustainable development;
- To promote specific strategies of collaboration and coordination that include an integrated approach for Veterinary Public Health in the various activities carried out by the health services
  - At regional, national and local level; including research, diagnosis, surveillance, control, alert and response and prevention;

# Strategic Considerations for a “Road Map” for Technical Cooperation in Veterinary Public Health

- Promote, inter-sectoral and inter-programmatic initiatives that lead to the development of internal rules and operational guidelines facilitating exchange of health information and experiences between appropriate professionals
- The International Agencies, and PAHO in particular, should focus technical assistance to Member States:
  - Identifying areas where the approach of Veterinary Public Health can be incorporated
  - Promoting intersectoral, inter-programmatic and interdisciplinary governance
  - Strengthening Veterinary Public Health technical teams within the health services through training

Thank you

Gracias