

# Veterinary Public Health Challenges and Opportunities

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Food and Agriculture Organization



# The Food and Agriculture Organization of the United Nations, Headquarters in Rome, Italy



# Food and Agriculture Organization of the UN

- 192 member countries  
+ 2 associate members  
+ EU
- Ministers of Agriculture
- Staff 3600 total
- Budget 2012-2013  
2.4 billion USD
- 90 FAO country offices





# FAO Regional and subregional offices



# FAO's Mandate

- Helping to build a **world without hunger**
- Raise levels of **nutrition** and standards of living
- Improve **agricultural productivity**
- Better the conditions of **rural** populations
- Contribute to the expansion of the world's **economy**



# Millennium Development Goals

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV/AIDS and other diseases
7. Ensure environmental sustainability
8. Global partnership for development



# Two families



## Germany: The Melander family of Bargteheide

Food expenditure for one week:  
375.39 Euros

## Chad: The Aboubakar family of Breidjing Camp

Food expenditure for one week:  
685 CFA Francs or \$1.23



# Number and percentage of undernourished persons

- 2010-2012      870 million (12.5%)
- 2006-2008      850 million (13%)
- 2000-2002      836 million (14%)
- 1995-1997      792 million (14%)
- 1990-1992      848 million (16%)
- 1979-1981      853 million (21%)
- 1969-1971      878 million (26%)





# The global food situation

- The world is able to produce sufficient food for 7 billion people
- Still **one person in eight** suffers from hunger and malnutrition
- 98 percent of hungry people live in developing countries
- Aprox. 24,000 persons die every day from hunger or poverty related causes and malnutrition
- Over 60% of these deaths are children under 5 years of age



# Hunger is the world's No. 1 health risk

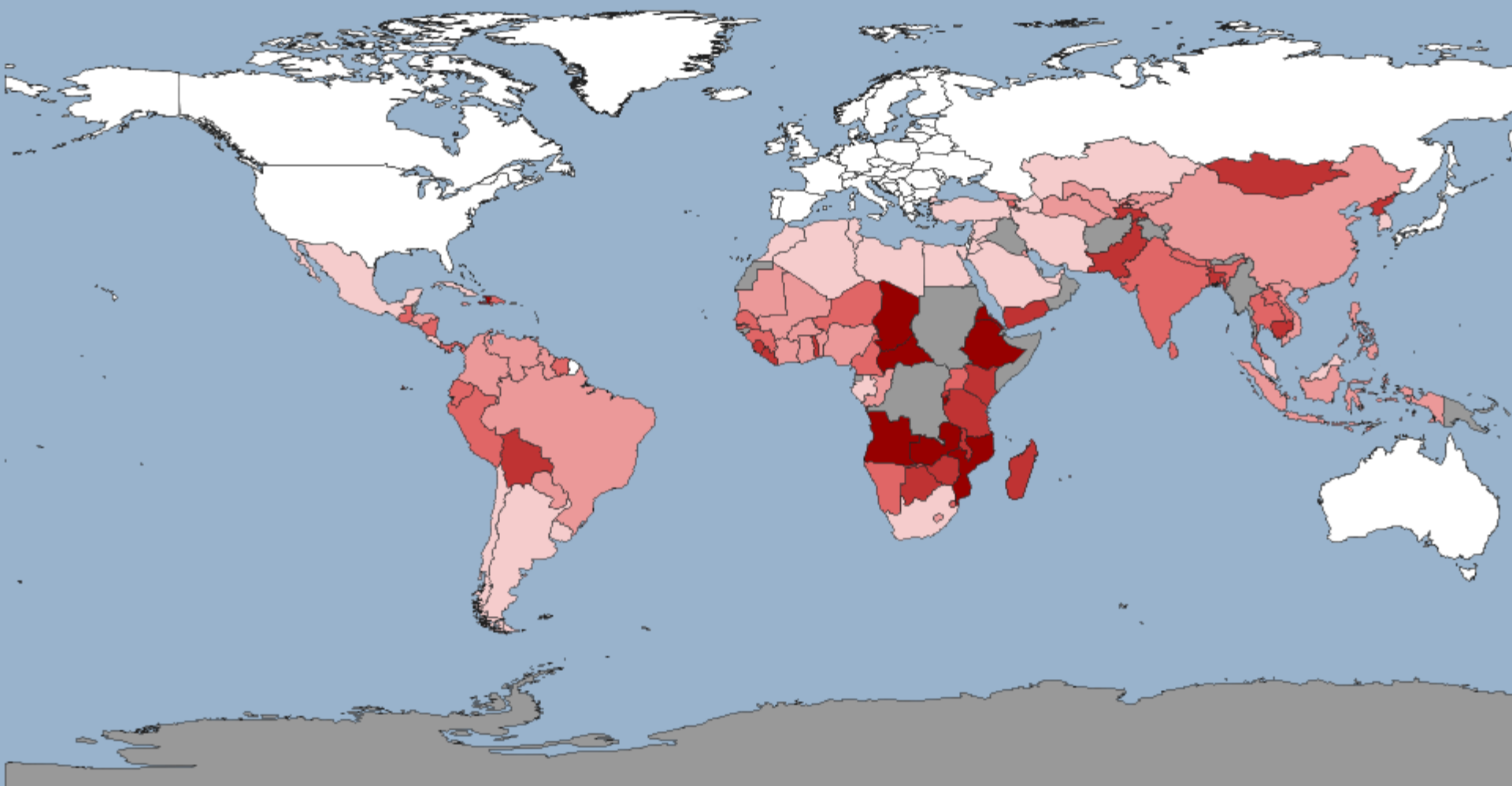
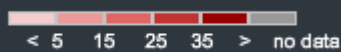
It kills more people every year than  
HIV/AIDs, malaria and tuberculosis  
combined





## Prevalence of Undernourishment in Total Population (%)

2006 - 2008



# Food security

- **Food availability**: sufficient quantities, appropriate quality, supplied (domestic prod. or imports (incl. food aid))
- **Food access**: access by individuals to nutritious diet.
- **Stability**: a population, household or individual must have access to adequate food at all times.
- **Utilization**: adequate diet, clean water, sanitation and health care → nutritional well-being

Source: FAO,



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*Source: FAO,*

# Migrations: conflicts, disasters



**Safe and nutritious food  
is a prerequisite for health**



# Causes for soaring food prices

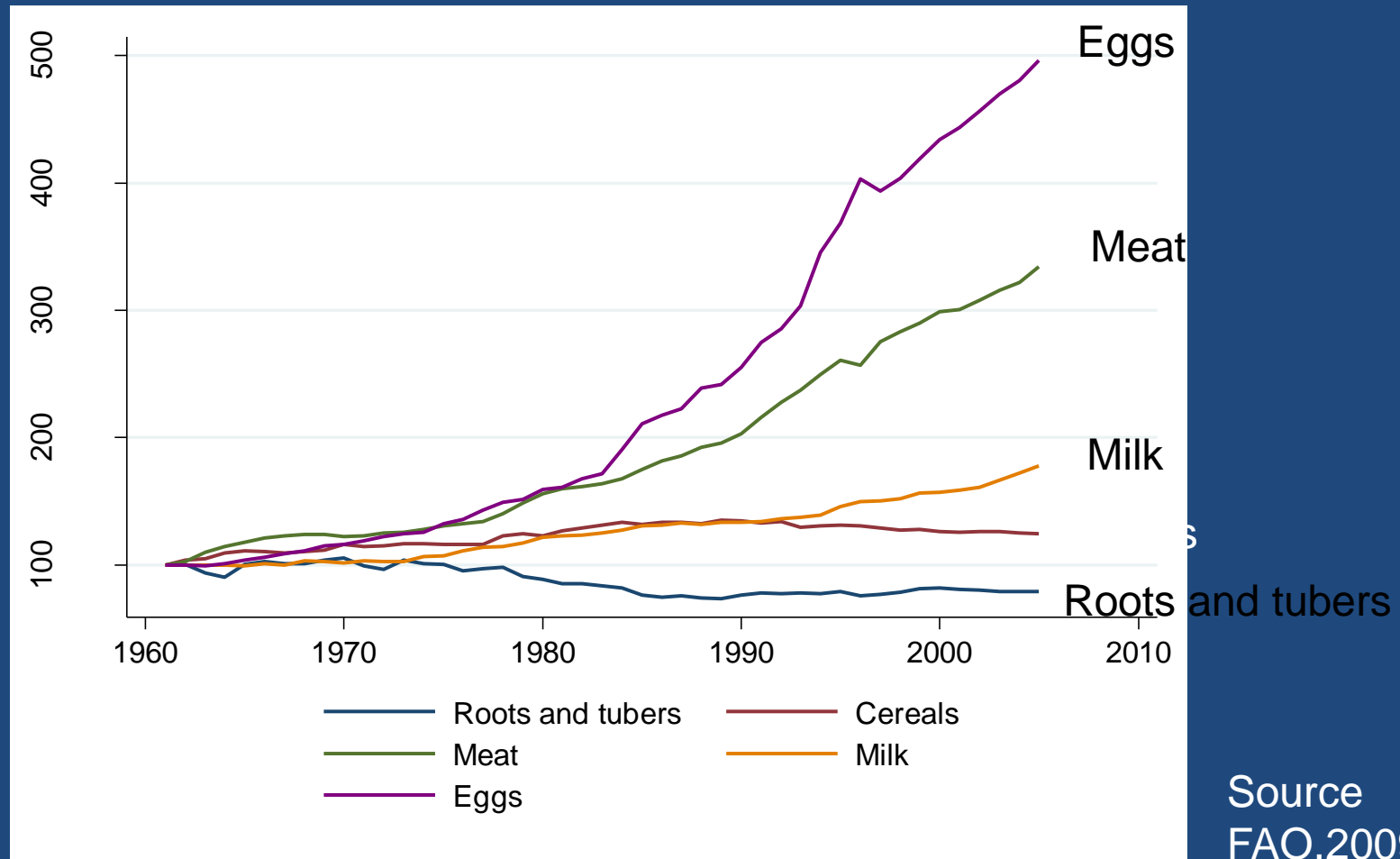
2008 and 2012

- Drought/flooding
- High fuel costs
- Low stocks of cereals
- Biofuels
- Changing food consumption patterns in upcoming markets
- Trade (export bans)
- Hoarding (panic buying)
- “Speculation”





# Consumption of livestock products is growing rapidly...



Source  
FAO.2009

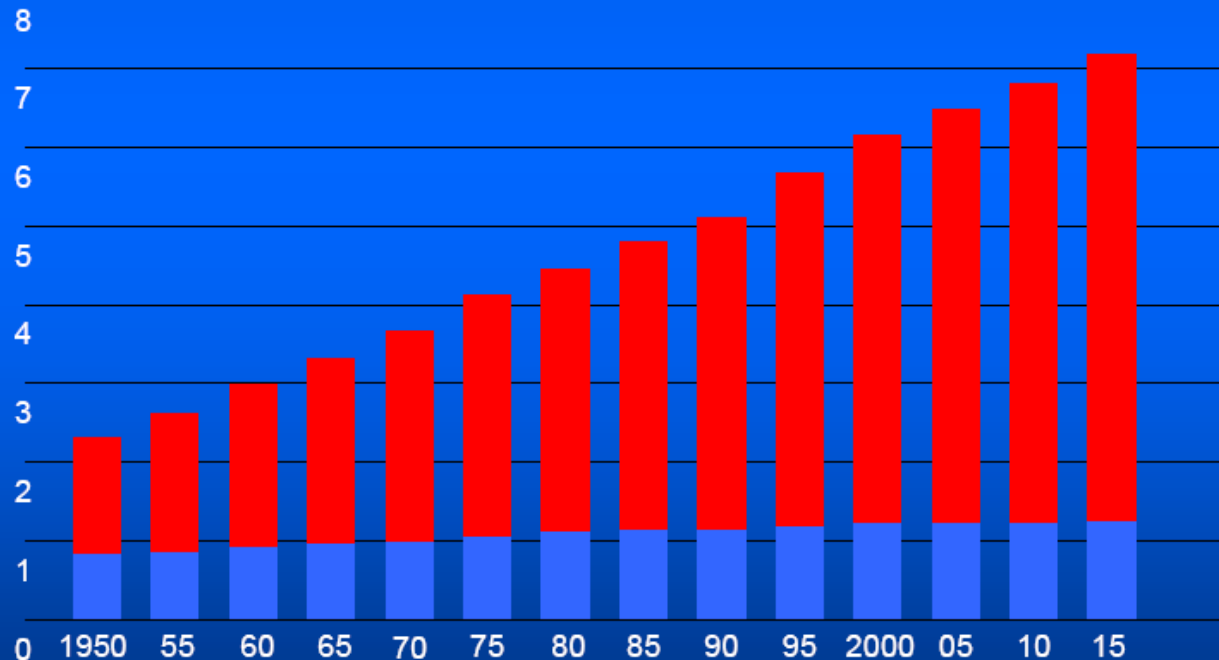
Per caput consumption of major food items in developing countries – kg per caput per year (index numbers 1961=100)

# Trends in Global Population

Global Population: 1950-2015

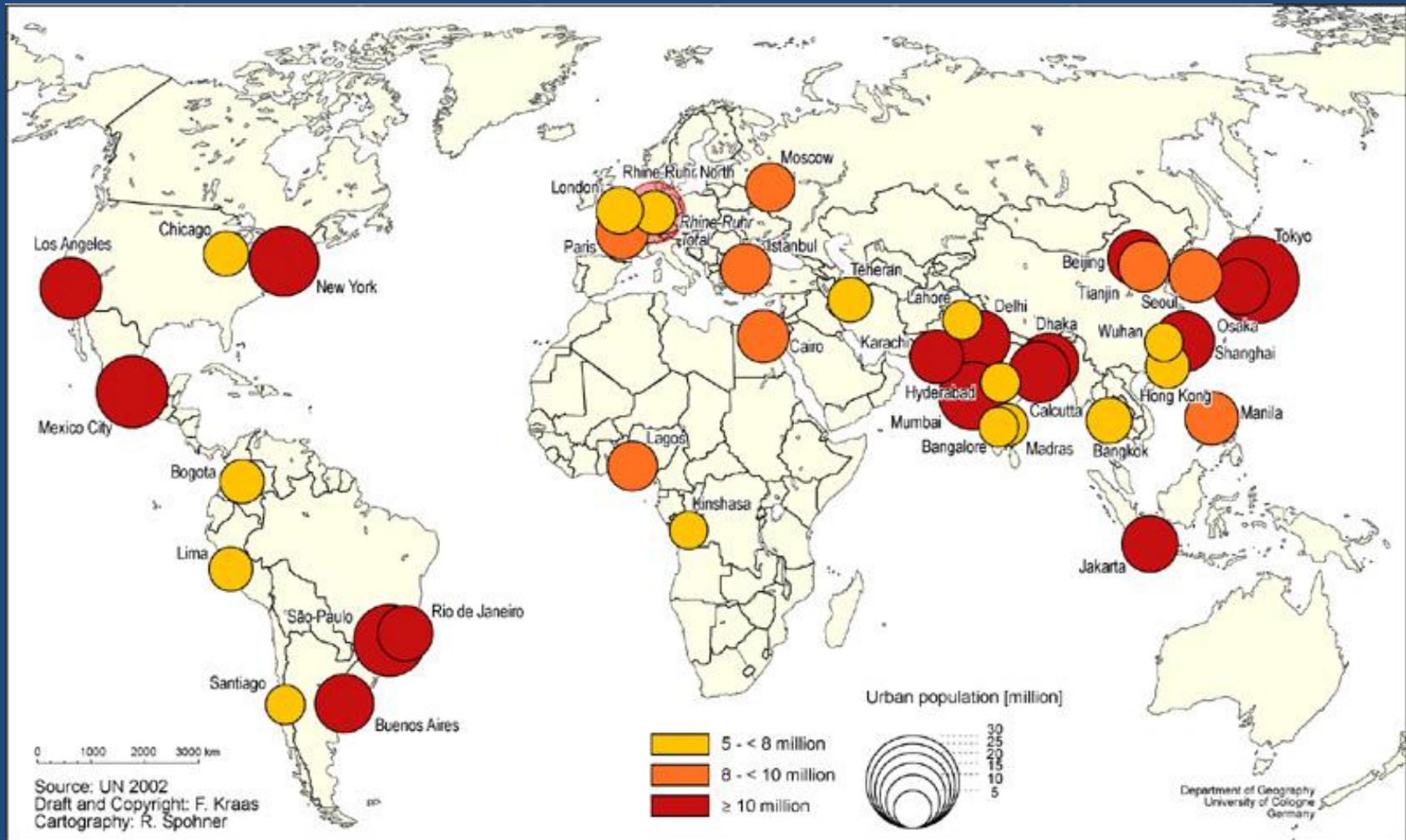
Total

Billions



Source: US Bureau of the Census

# Urbanisation and creation of megacities



# Trends

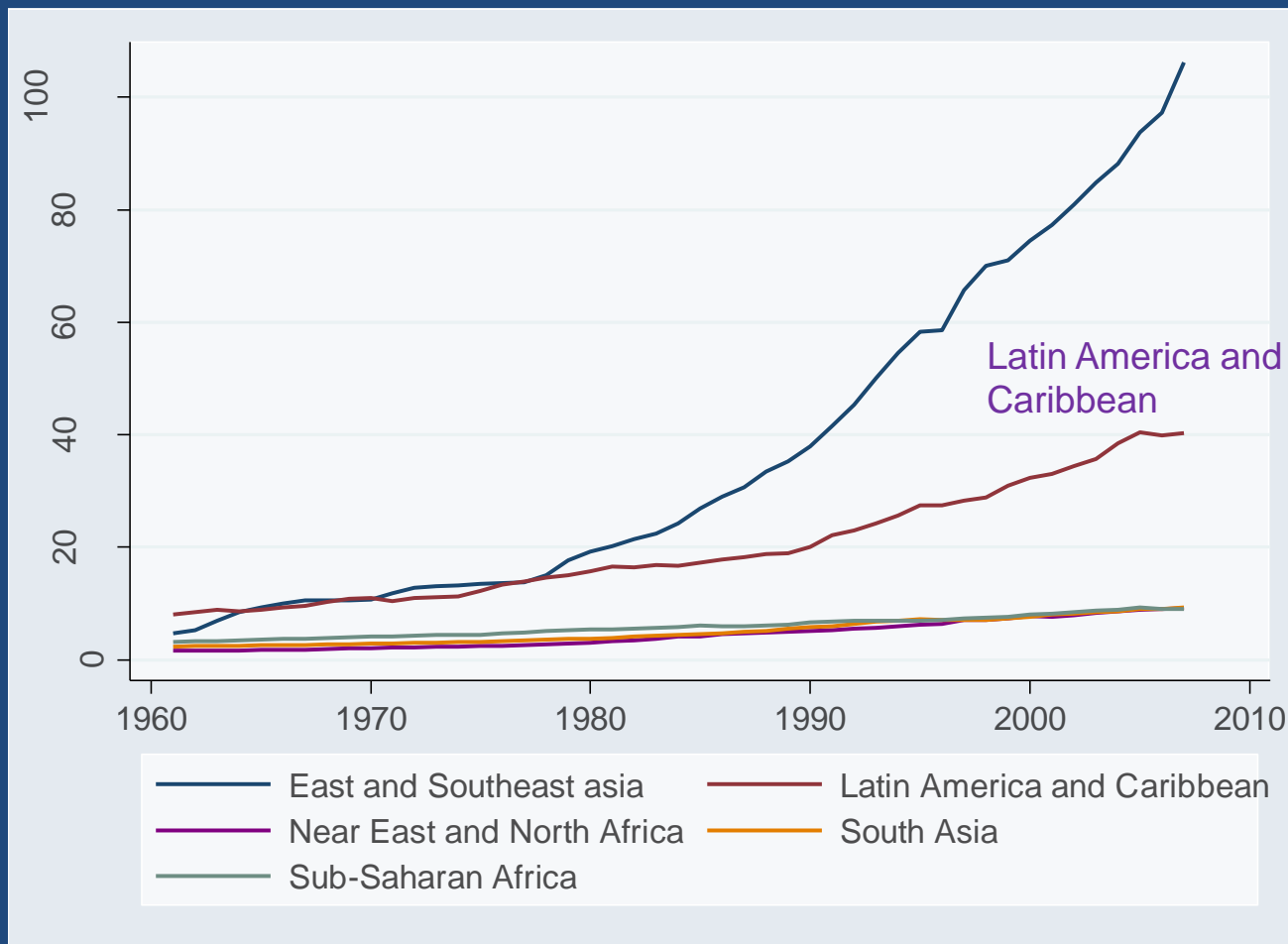
- Urbanization
- Changing eating habits
- Fast food industry
- Supermarkets
- Street foods
- International f
- ood webs





Meat production is growing, but with striking regional differences ...

East and Southeast  
Asia







# FAO APPROACH TO ZOOONOTIC DISEASES

## Neglected/endemic Zoonoses

## Emerging zoonoses

Echinococcosis/Hydatidosis  
Leptospirosis  
Toxoplasmosis  
Chagas  
Lassa Fever

Rabies  
Rift Valley Fever  
Leishmaniasis  
West Nile Fever  
Q-Fever  
Japanese Encephalites

HPAI  
Nipah/Hendra  
Ebola/Marburg (SARS)  
Monkeypox  
Hanta  
Crimean Congo Hemorrhagic Fever

Trichinellosis  
Cryptosporidiosis  
Cysticercosis/  
Taeniasis  
B-Tuberculosis

Brucellosis  
Anthrax

Anisakiasis  
E.coli 0157  
MRSA  
BSE/vCJD  
Hepatitis E

Salmonellosis  
Staph  
Campylobacter  
Listeriosis  
Yersiniosis  
Norovirus

## Food-borne diseases

Better Health  
systems  
Development  
Poverty alleviation  
Public awareness

Chain approach  
Empowered  
consumers  
Certification  
systems

Emergency  
Preparedness  
Early detection  
Rapid response

residues  
Antibiotic  
residues and  
antimicrobial  
resistance

# ANIMAL DISEASES



## Economic risks

- productivity
- markets
- income

## Human health

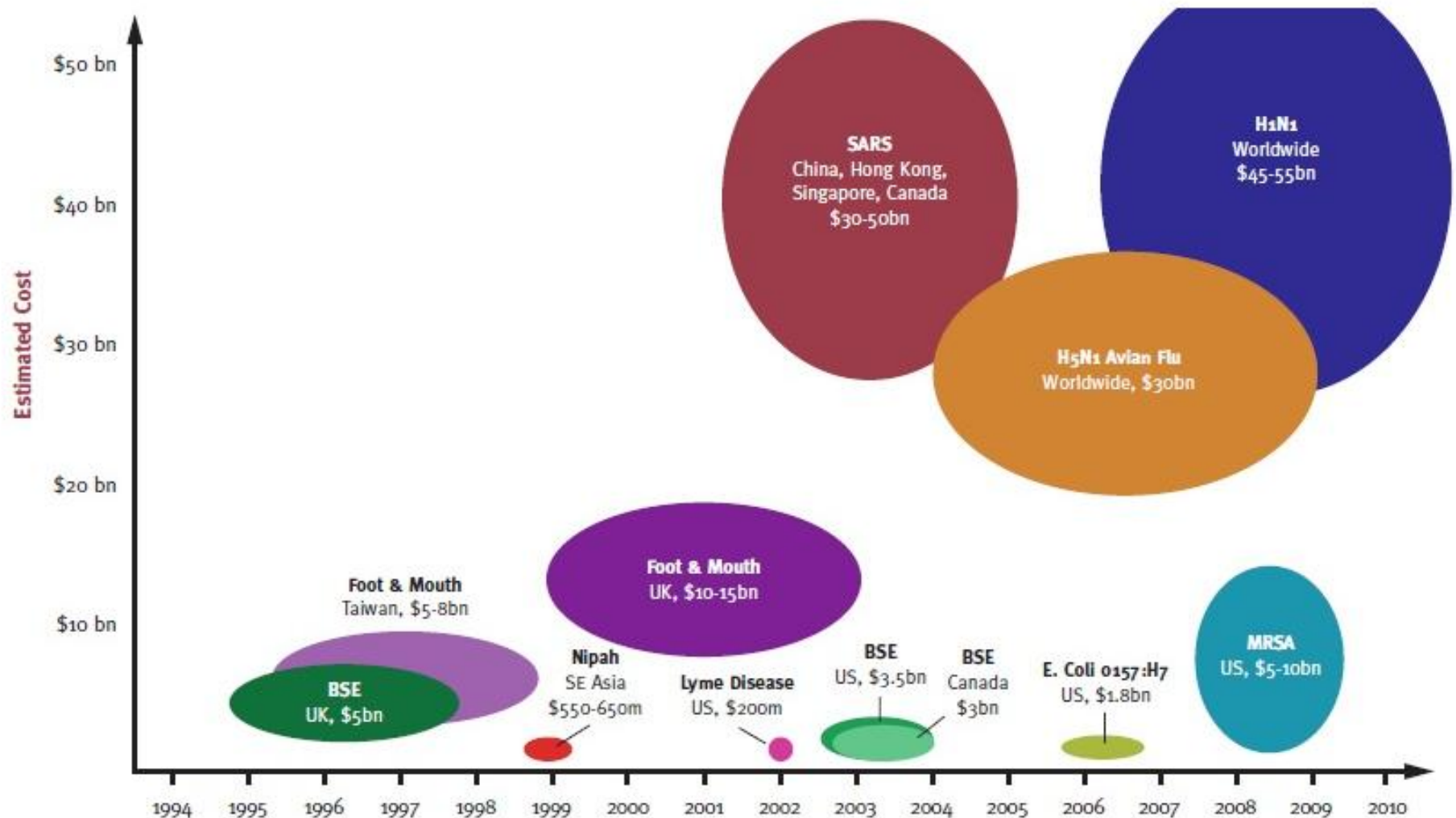
- pandemic disease
- endemic disease
- food borne illness



**IMPACT HUMAN WELL-BEING**

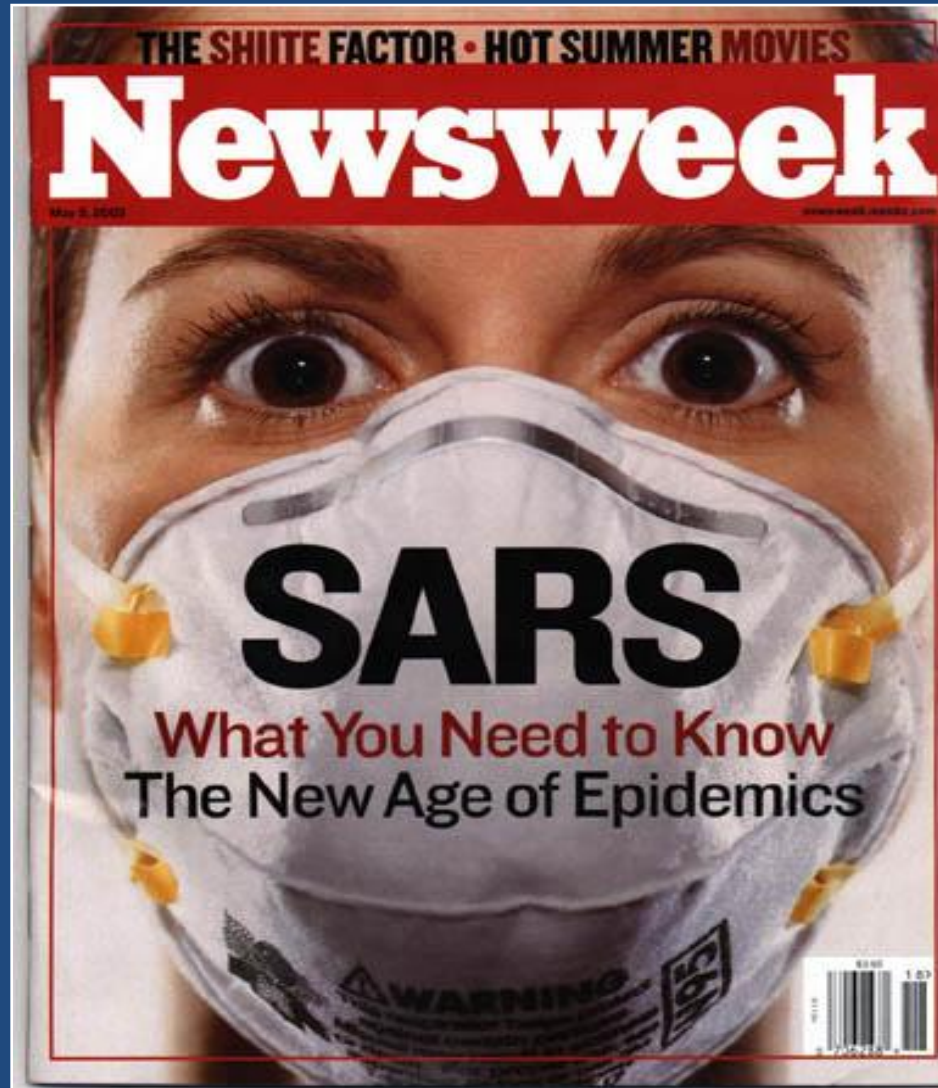


# Economic impact of (animal) diseases (estimated)



Figures are estimates and are presented as relative size. ©2011 bio-era

# The impact of (social) media



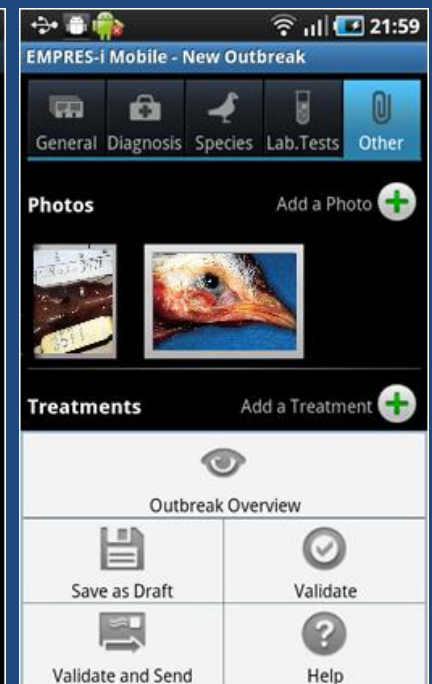
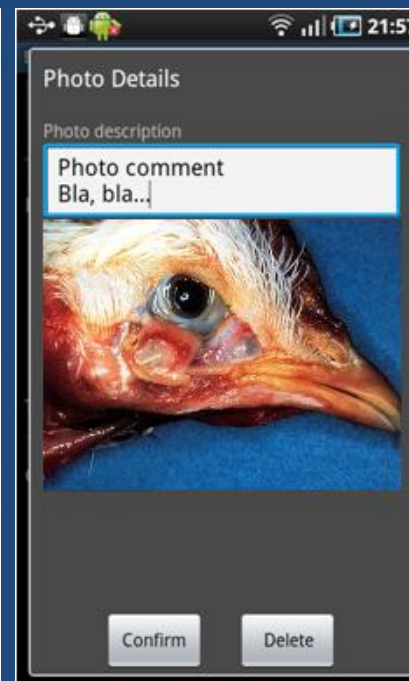
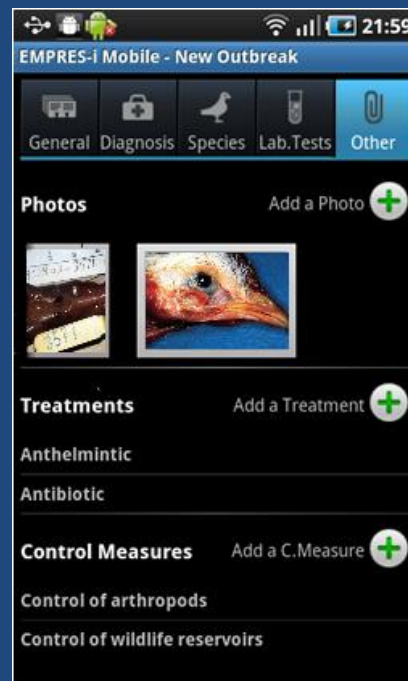
...and the importance of good (outbreak) communication!

# Technology for epidemiology



# EMPRES-i – Android

Possibilities to  
add pictures of  
cases and the  
environment





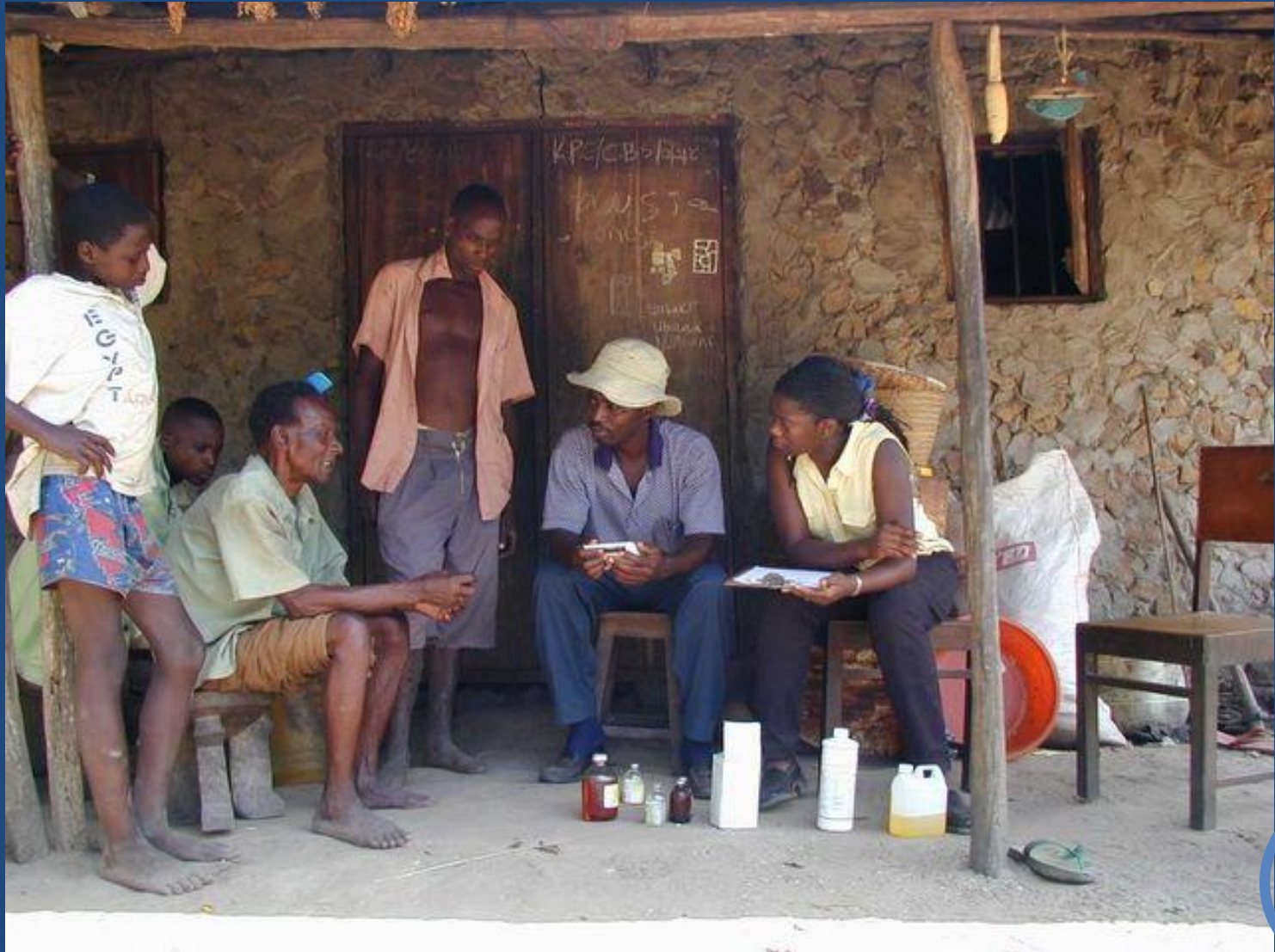
# New opportunities but also challenges

- Proliferation of applications  
→ need for integrated systems (avoid extra work)
- Mobile phone coverage improving
- Internet accessibility patchy
- Costs
- “concerns of authorities over control of information”





## Communities are key for disease reporting, prevention and control



# The Lancaster Environment Centre



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News & Events

News

Events

Events Archive

Seminar Series

BA

## Lost in Translation disease management

Wednesday

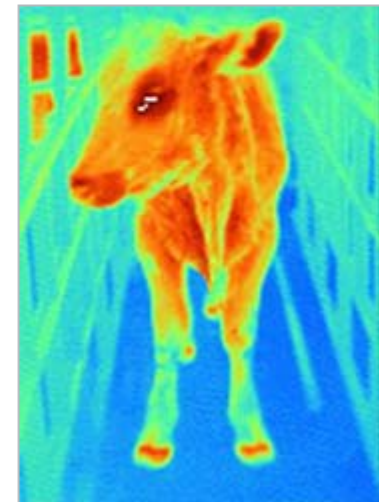
How to translate research into policies?

...global environmental, social and economic...  
...devastating consequences for those...  
...ected during and after outbreaks.

[Download Programme](#)

► [Register online](#)

[Lost in Translation](#) uniquely brings together expertise across the natural and social sciences to provide an interdisciplinary understanding of the social, technological and natural dynamics of animal disease management across a range of policy scales. Central to this Relu-funded project is the question of how we can better understand issues of complexity and uncertainty in animal disease outbreaks and their containment in order to help develop more integrated and more effective strategies of management for animal disease. To focus our analysis and provide a novel cross-disease approach, we have examined three contrasting examples of endemic and/or exotic disease: Foot and Mouth Disease, Cryptosporidium and Avian Influenza.



### Upcoming Events

► [Talks, Lectures and Seminars](#)

► [Conferences and workshops](#)

► [Postgraduate Open Days](#)

► [Undergraduate Open Days](#)

# One Health in the Food Chain

*healthy food  
and agriculture*



**healthy  
humans**

*public health*



food  
consumption

food  
distribution +  
marketing

Waste

pets + feral  
dogs/cats



food  
animal  
processing

*safe  
food*



soil/water

arthropod  
vectors

live animal  
trade and  
transport

*healthy  
fisheries and forestry*

## Tripartite Position Paper April 2010

# The FAO-OIE-WHO Collaboration

Sharing responsibilities  
and coordinating global activities  
to address health risks at the  
animal-human-ecosystems interfaces

A Tripartite Concept Note



April 2010

**VISION**  
A world capable of  
preventing, detecting,  
containing, eliminating,  
and responding to animal  
and public health risks  
attributable to zoonoses  
and animal diseases with  
an impact on food security  
through multi-sectoral  
cooperation and strong  
partnerships.

### BACKGROUND

Pathogens, populations and human animals and a stake in, control. Not parasites - their life cycle is more and ensures the replicating host to a su

While the In across animal has been at and region systems as with limited However, th highly patho and control



# FAO/WHO integrated tabletop simulation exercises



Zambia



Armenia



Azerbaijan

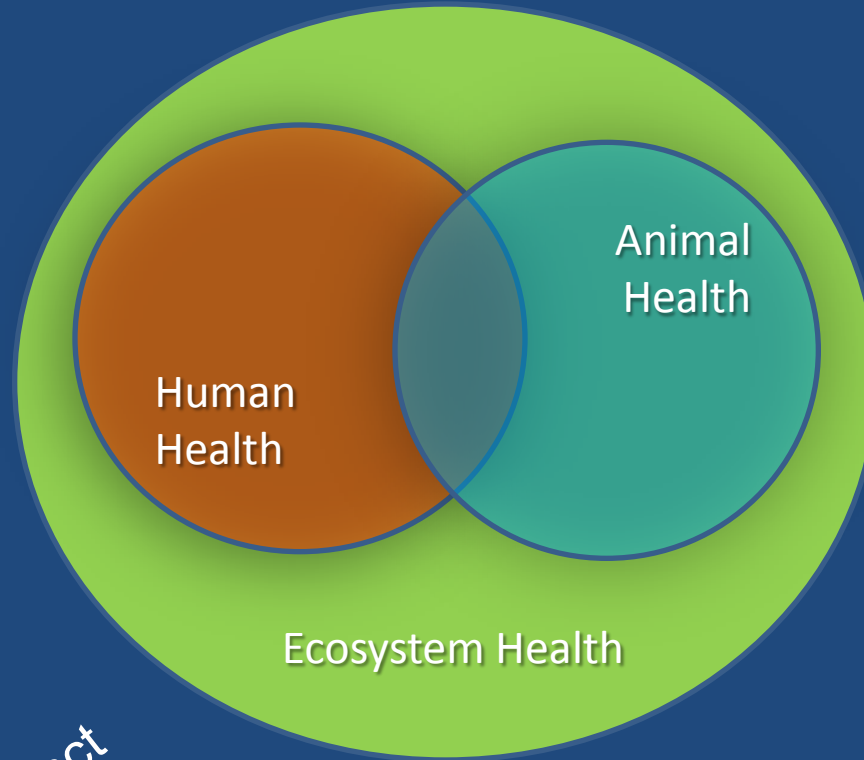


Serbia





# One Health



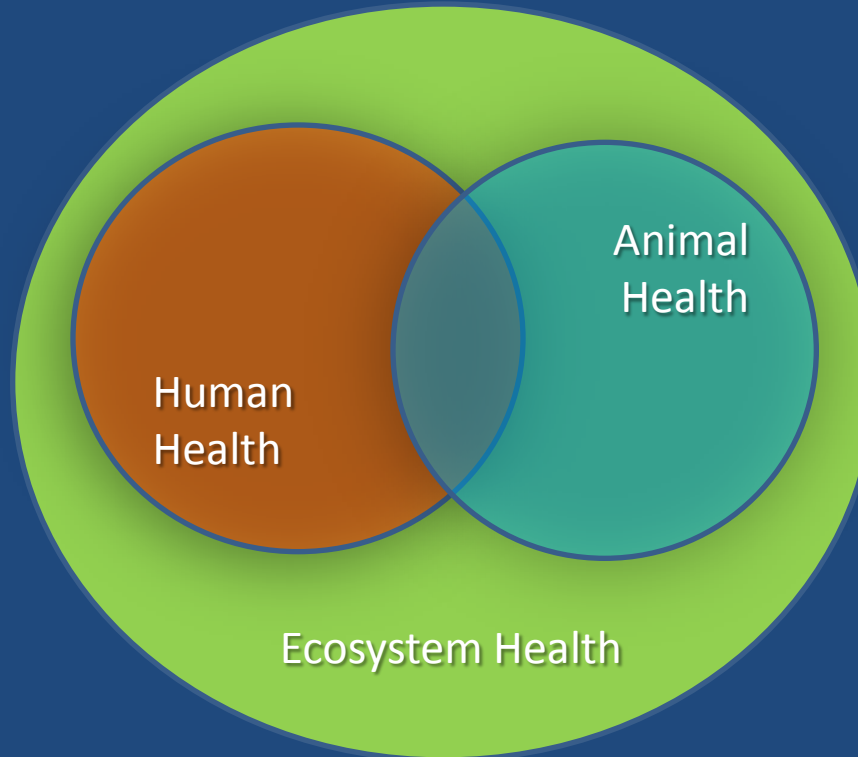
Social factors/impact

Economic factors/impact



# One Health

*...enhancing **communication and leadership** skills, development of cultural sensitivity, and an ability to be engaged in multifaceted and **multidisciplinary teamwork becomes essential.***



*...**Needs and opportunities** for One Health professionals are expanding rapidly in public and private agencies dealing with animal and human health, agencies and corporations charged with public health, safeguarding the environment, food safety, consumer protection and food security...*

*..There is an increasing **societal need** for public health professionals with the competencies, knowledge, and skills to address the **multidimensional problems** of zoonotic and food-borne diseases”...*

# Delivering *One Health*



## What's it going to take?

*Understanding complexity*

*Dealing with the unknown*

*Responding to uncertainty*



**We can make it happen.**

**Let's begin.**

**Engaging people and changing behavior:**

**This will require education, experience, & most importantly, understanding & integrating cultural dimensions into solutions**

**THANK YOU**

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