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

http://www.humanespot.org/node/2885
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%)

2012 Hunger Report
FAO, State of Food Insecurity in the World (SOFI) 2012
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.
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,
Food security

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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)
- Hording (panic buying)
- “Speculation”
Consumption of livestock products is growing rapidly...

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

Source: FAO.2009
Trends in Global Population


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<th>More developed countries</th>
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Source: US Bureau of the Census
Urbanisation and creation of megacities
Trends

- Urbanization
- Changing eating habits
- Fast food industry
- Supermarkets
- Street foods
- International foods
- Food webs
Meat production is growing, but with striking regional differences ...
FAO APPROACH TO ZOONOTIC DISEASES

**Neglected/endemic Zoonoses**
- Echinococcosis/Hydatidiosis
- Leptospirosis
- Toxoplasmosis
- Chagas
- Lassa Fever

**Emerging zoonoses**
- Rabies
- Rift Valley Fever
- Leishmaniasis
- West Nile Fever
- Q-Fever
- Japanese Encephalitis
- HPAI
- Nipah/Hendra
- Ebola/Marburg (SARS)
- Monkeypox
- Hanta
- Crimean Congo Hemorragic Fever

**Better Health systems**
- Development
- Poverty alleviation
- Public awareness

**Chain approach**
- Empowered consumers
- Certification systems

**Food-borne diseases**
- Trichinellosis
- Cryptosporidiosis
- Cysticercosis/Taeniasis
- B-Tuberculosis
- Salmonellosis
- Staph
- Campylobacter
- Listeriosis
- Yersiniosis
- Norovirus

**Antibiotic residues and antimicrobial resistance**
- Anisakiasis
- E.coli 0157
- MRSA
- BSE/vCJD
- Hepatitis E

**Emergency Preparedness**
- Early detection
- Rapid response
ANIMAL DISEASES

Economic risks
- productivity
- markets
- income

Human health
- pandemic disease
- endemic disease
- food borne illness

IMPACT HUMAN WELL-BEING

FAO-SOFA 2009
Economic impact of (animal) diseases (estimated)
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
How to translate research into policies?

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.
One Health in the Food Chain

- **healthy food and agriculture**
  - food consumption
  - food distribution + marketing
  - food animal processing
  - live animal trade and transport
  - food animal production
  - feed processing

- **safe food**
  - healthy animals
  - healthy plants
  - healthy fisheries and forestry

- **healthy ecosystems**
  - wildlife
  - arthropod vectors
  - pets + feral dogs/cats

- **public health**
  - soil/water
  - waste

**Healthy eco-systems**

**Healthy plants**

**Healthy animals**

**Healthy fisheries and forestry**

**Safe food**

**Healthy food and agriculture**

- **Healthy eco-systems**
  - outdoor wildlife scene

- **Safe food**
  - food animal trade scene

- **Healthy food and agriculture**
  - food animal processing scene
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
FAO/WHO integrated tabletop simulation exercises

Zambia

Azerbaijan

Armenia

Serbia
One Health

- Human Health
- Animal Health
- Ecosystem Health

Factors:
- Economic factors/impact
- Social factors/impact
One Health

...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...
Engaging people and changing behavior: This will require education, experience, & most importantly, understanding & integrating cultural dimensions into solutions.
THANK YOU

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