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FMD Control Learning from the Recent Events in FMD-Free countries in Asia

The challenges of high density swine/ruminant areas

Sherrilyn Wainwright
Christopher Hamilton
Julio Pinto

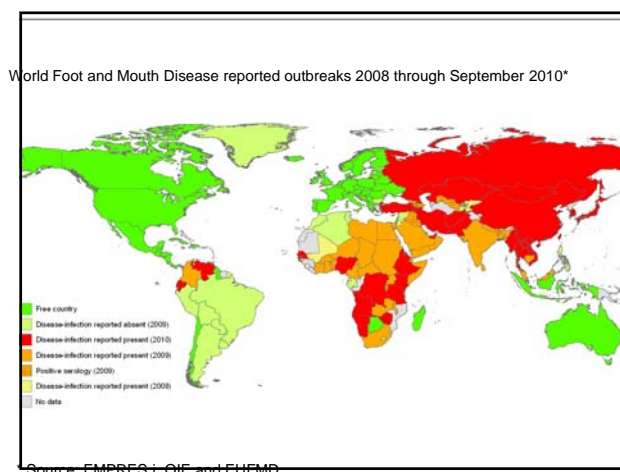
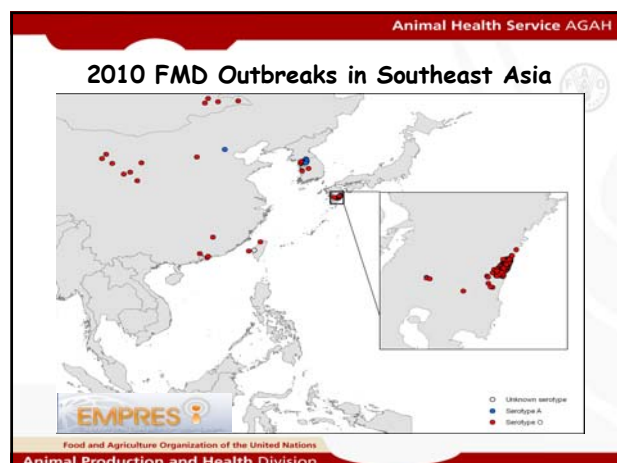
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Short Summary

- Recent events of FMD outbreaks
- Countries previously FMD-free without vaccination
- High density livestock industries
- Real challenges and risks in response

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FMD Outbreak

- Essentially plunged into the Progressive Control Pathway (PCP) Stage 0
- If surveillance and stoppage of movement can be accomplished, there may be quick progression through Stages 1, 2 and Stage 3
- Decision of whether to use vaccination will be one of key decisions to be taken
- And then, economic decisions of whether to work through Stage 4 or, through culling of those vaccinated, move back into Stage 5
- Actually, former FMD-free countries will follow the OIE regulations to return to FMD-free status.

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Conclusions

- Livestock sector continues to change in response to globalization and the growing demand for animal food products
- The expanding trade in livestock and livestock products is constantly under the threat of disease outbreaks
- A risk analysis is needed for the response to outbreaks of highly infectious transboundary animal diseases in dense livestock populated areas which must be incorporated in business plans of governments and private industry

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	2004	2009	Growth Compared to 2004 (%)
Human population	6,456,443,080	6,755,987,239	4.64
Inventory			
Pigs (million)	894	941	5.26
Cattle (million)	1,348	1,382	2.52
Production			
Pig meat (thousand tonnes)	96,650	106,069	9.74
Cattle meat (thousand tonnes)	58,085	61,838	6.46
Milk (cattle) (thousand tonnes)	527,180	580,482	10.11
Source: FAOSTAT			
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Material and Methods

FAO's

- Global Early Warning and Response System for Major Animal Diseases, including Zoonoses (GLEWS) team's disease tracking activities
- Disease situation reports from countries affected by FMD during 2010
- Emergency Prevention and Early Warning System (EMPRES) Animal Health
- EMPRES-i: Global Animal Disease Information System
- Global Livestock Production and Health Atlas (GLiPHA)

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FMD-free without vaccination

- The risk of FMD entry is low through legal trade of animals and animal products from zones officially recognized as FMD-free by the OIE
- However, there consistently is evidence of animals and animal products entering FMD free countries by various routes "under the radar," some which carry infectious virus

FAO Focus on FMD, 2005 - 2006 report
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Countries which have achieved FMD-free status without vaccination incur potential risks related to this success:

- Over time, there may be decreased political support and funding to maintain the vigilance required and resources required for response
- A loss of a sense of urgency to include FMD as a differential to be ruled out
- There is too much at risk if FMD is the last disease on the differential list after other endemic diseases are first ruled out
- Risk of continued unrecognized spread
- Especially if in a high "mixed livestock species" dense area

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There are inherent risks associated with areas of high livestock density

- **Disease transmission**
 - Neighborhood spread: movement of people (including response teams) - mechanical
 - Biosecurity measures not uniform on all farms
 - Feed trucks and other vehicles due to the lack of disinfection between uses (movement of livestock, dead cattle to processors, litter/waste, etc)
 - Visitors and goods coming from FMD infected countries
 - Wildlife

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Disease Control Measures

- Detection to identify the actual extent of the outbreak
- Huge economic / commercial constraints to stop movement
 - manure removal
 - swine industry
 - dairy industry
 - beef industry
- "Animal welfare" issues with stoppage of movement
 - vehicles such as feed trucks

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Human and equipment resources for the response

- Sampling suspect and exposed animals
- Clinical observation
- Laboratory testing
- Vaccination
- Euthanasia
- Movement of carcasses
- Burial of carcasses
- Disinfection
- Public relations
- Industry relations
- Providing information to the government policy-makers

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Delays in response due to:

- Lack of appropriate legislation to respond as needed
- Knowing the actual location of and an idea of the numbers of farms and animals that will need to be known even for estimates of what it will take in resources to respond
- The above is a key challenge of private versus public good
- Weather, such as heavy rains or winds
- Lack of identified and committed financial resources to address compensation concerns
- Lack of compliance
- Emotional toll on animal owners and the responders

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Response Challenges

- There is a clear need for well informed:
 - livestock sector planning
 - policy development and analysis
- There is a paucity of reliable and accessible information on the:
 - Distribution
 - Abundance
 - Uses of livestock

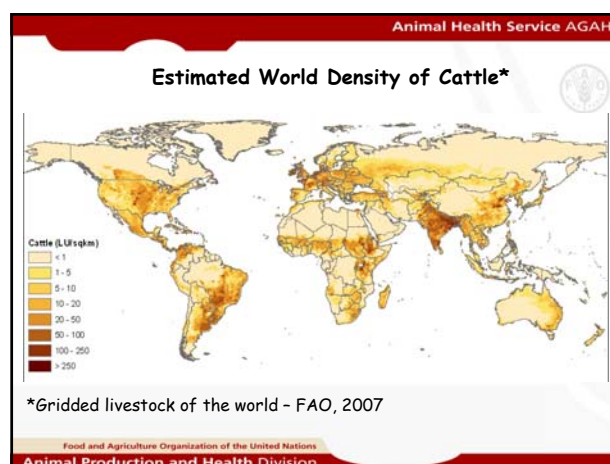
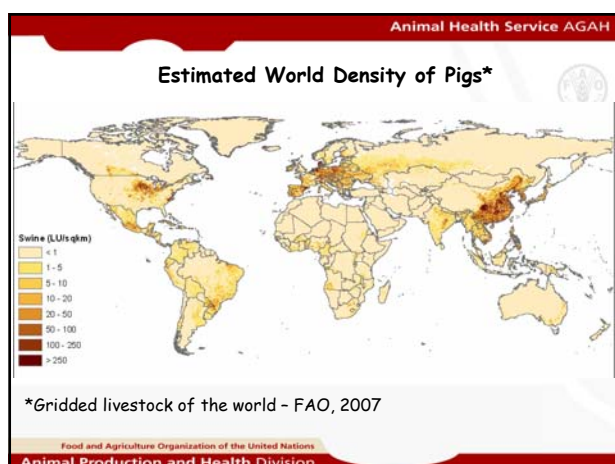
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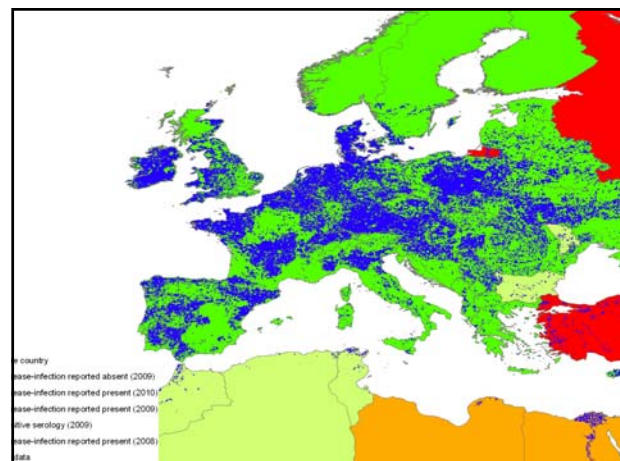
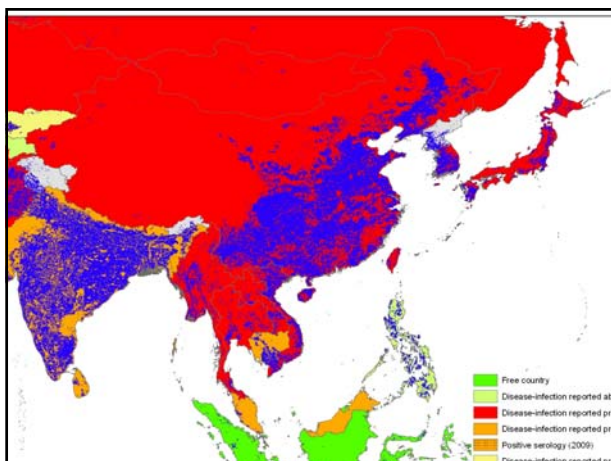
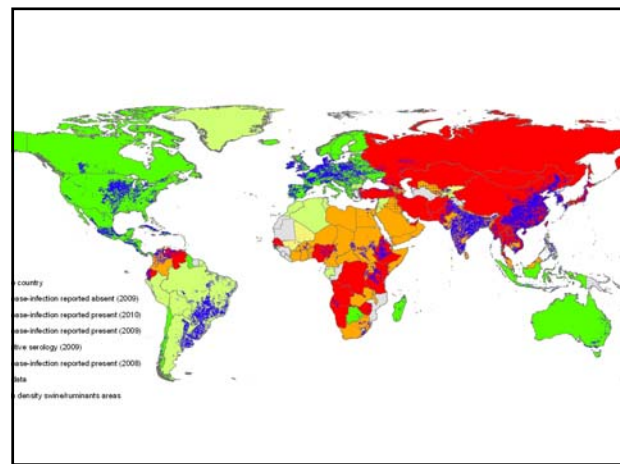
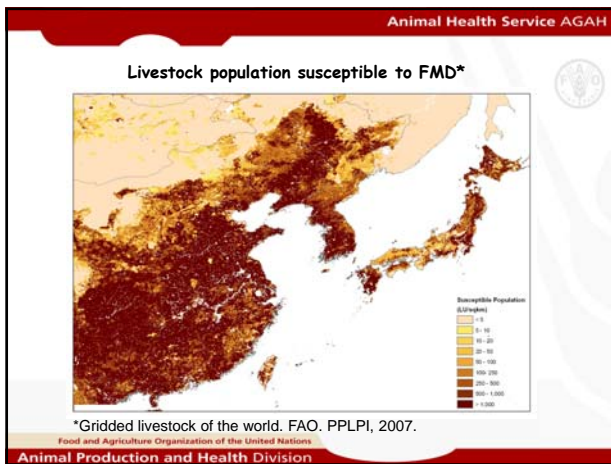
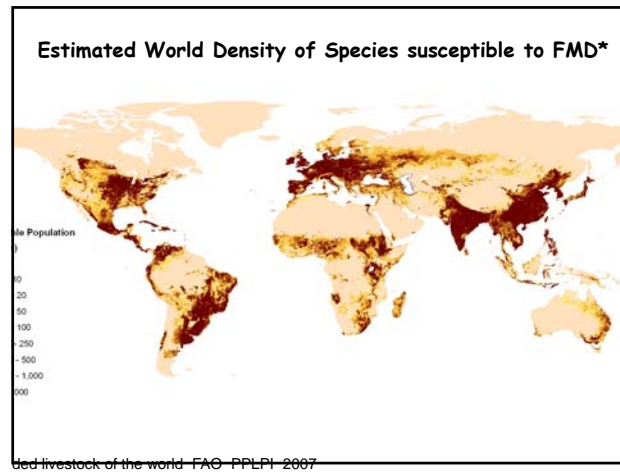
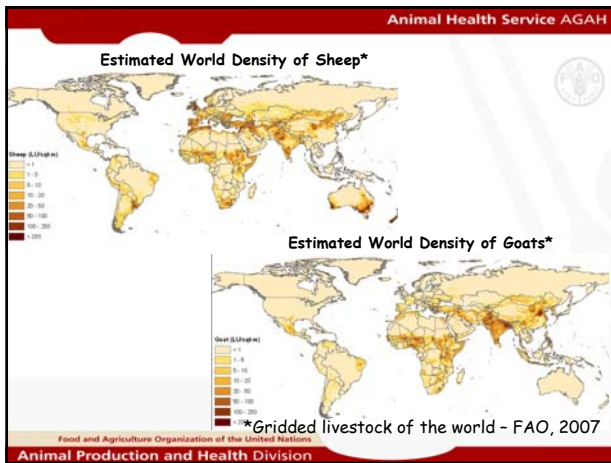
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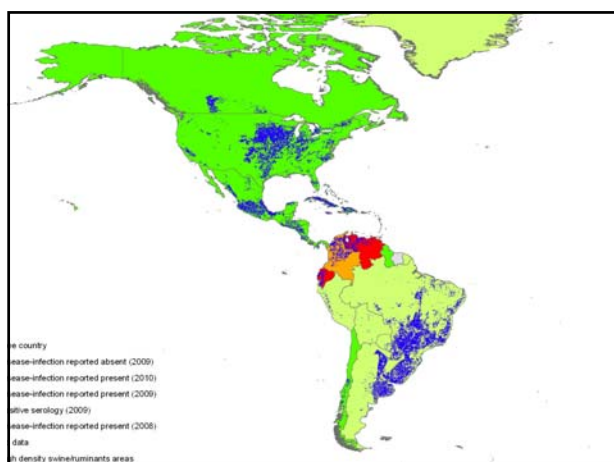
FAO's GLiPHA and GLIMS

- Global Livestock Production and Health Atlas (GLiPHA), user-friendly electronic atlas which draws on sub-national data managed within the Global Livestock Impact Mapping System (GLIMS)
- The interface uses the 3rd generation of the Key Indicator Data System (KIDS -3g)
- Gridded livestock of the world - FAO, 2007
 - LU: *Livestock unit*; conversion factors: cattle (0.65), buffalo (0.70), sheep and goats (.10) and pigs (0.25)
- Better data is needed

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This paper suggests that an FMD-risk assessment, especially in countries which are FMD-free without vaccination, should be considered and be based on:

- the density and distribution of the different susceptible livestock species
- identified movements of livestock, livestock products, and associated feed, litter, milk pick-up, etc (value chain analysis, marketing networks) to assess risk of disease entry and exit and potential spread into and out of a high livestock dense area
- With emphasis on biosecurity measures
- Immediately establish accepted risk reduction strategies

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