Food and Agriculture Organization of the United Nations

“New Kid in Town”: FAO perspective on emerging animal diseases

Eran Raizman DVM, PhD DACPVM
Food and Agriculture Organization of the United Nation
Animal Health Service

FAO Global Mandate

- Improve nutrition
- Increase agricultural productivity
- Raise the standard of living in rural populations
- Contribute to global economic growth

Food and Agriculture Organization of the United Nations

EMPRES

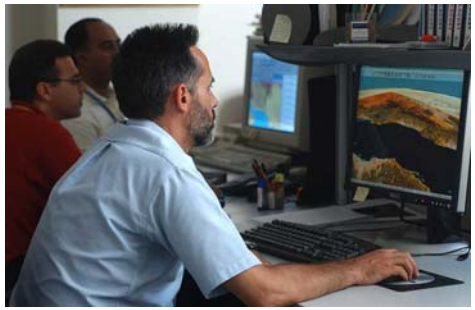
EMERGENCY PREVENTION SYSTEM

EMPRES-AH

FAO's EMERGENCY PREVENTION SYSTEM for ANIMAL HEALTH

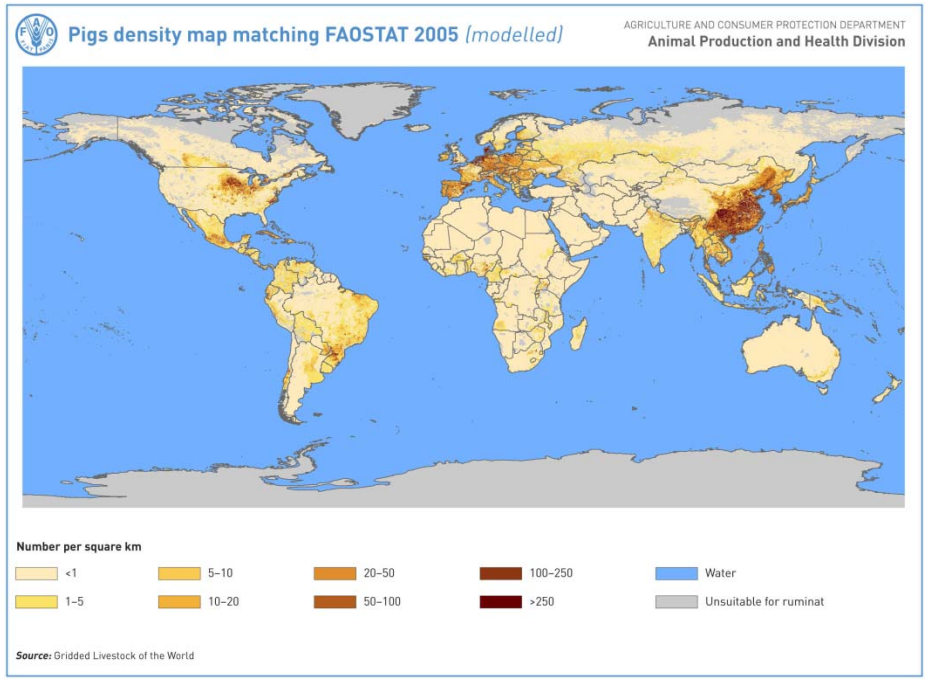
FAO's RESPONSE: EMPRES-AH

- Sustainable capacity building
- Knowledge sharing
- Tools & Strategies
- Coordination & Networking



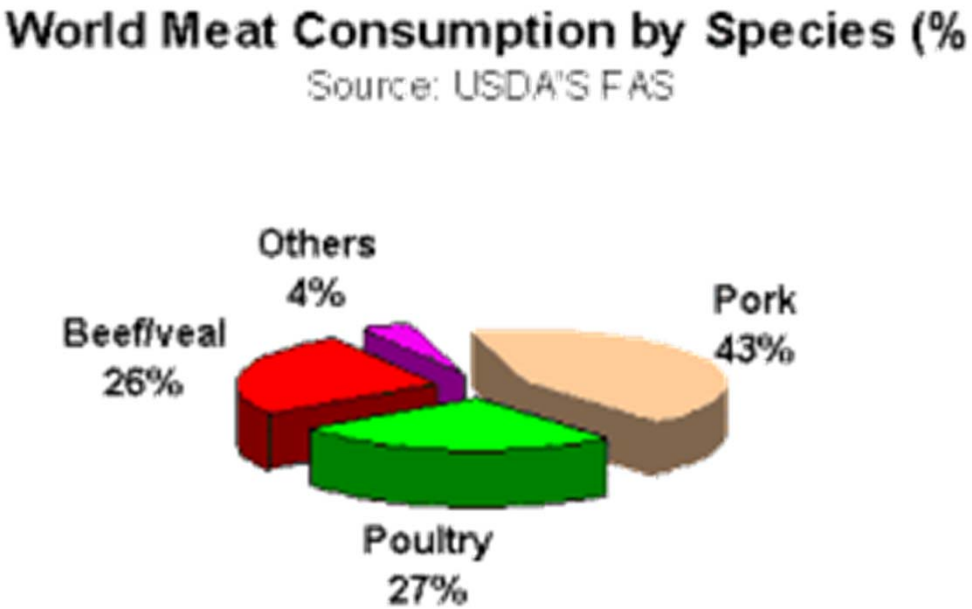
Pig trade: context “supply side”

- Approx 1 billion standing stock any given day
  - China hosting approx half of that
- Sector growth per region
  - Consolidated sector in Europe and North America
  - Growth in other regions
  - Africa, small in absolute numbers but big in relative growth

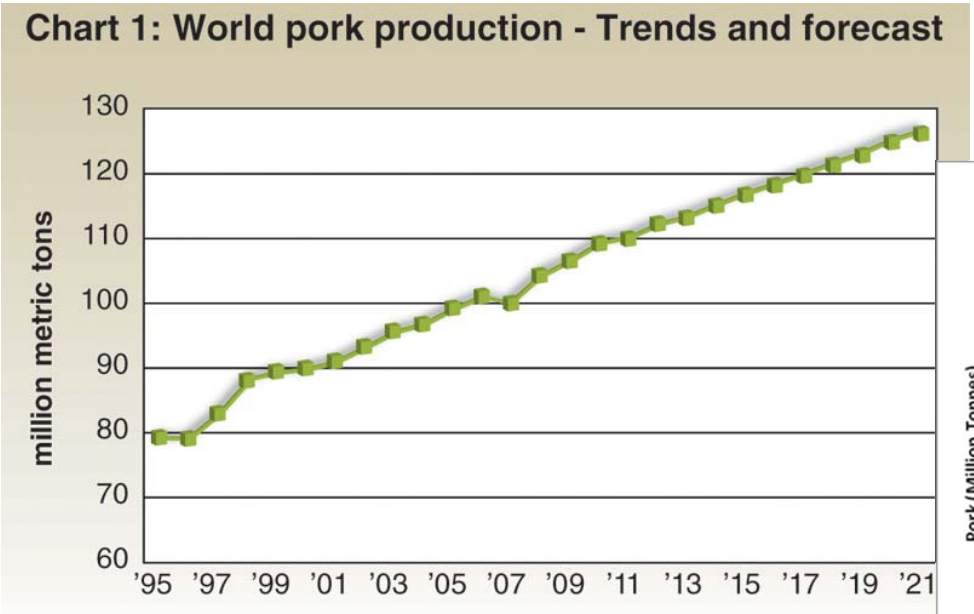


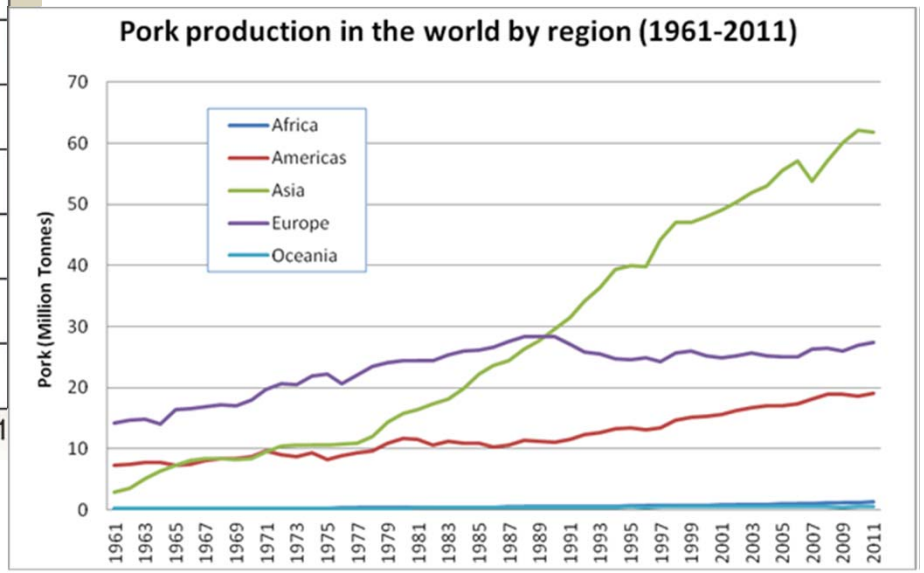
The demand side

- Most consumed meat from terrestrial animals



- Growing demand

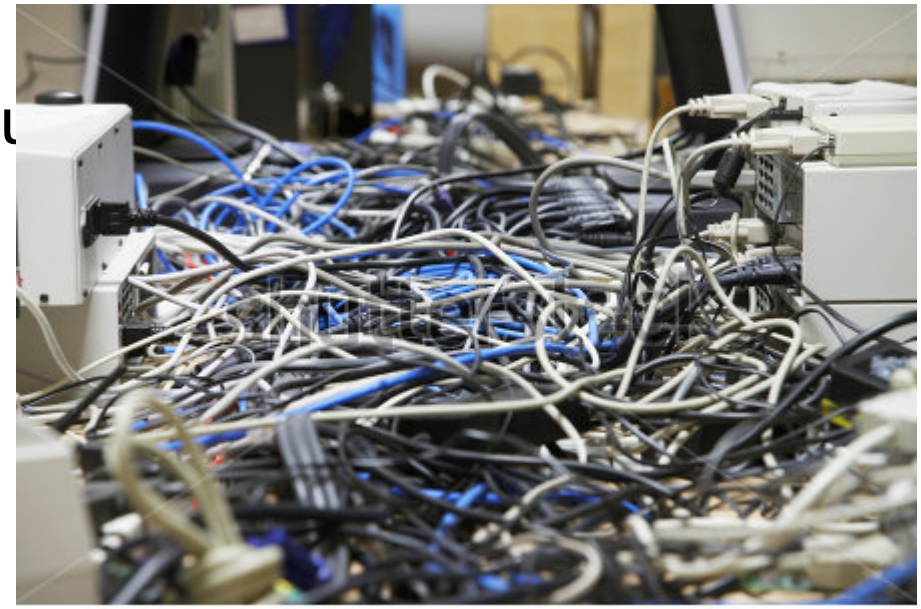




Globalization

– Ever increasing interconnectivity of people on all continents

– Moving towards the „u
epidemiological



International trade of animals and animal products

- WTO
  - OIE standards
  - Codex alimentarius
- Formal trade highly regulated
- Live pig trade
  - Neighboring countries (same market chain)
  - Mostly piglets and ready to slaughter animals
  - Low numbers of high value breeding stock
  - Globally acting private sector
  - High sanitation standards

Disease spread within formal trade

- Risks related to disease spread in this context
  - Existent, but with standards in place to regulate
  - Exporting countries with higher health standards

- PED as current example (live animals)
  - Spread between states and countries (US and Canada)
  - Confirmed cases in Colombia and Peru

So what is the problem?

- The „official system“ has some weakness in itself – Not FAO core mandate
- But if that would be fixed – would no disease ever spread?

- Well…

“the other” pig sector

- Large share of animals in smallholder production systems
  - Many not linked to formal market chain
  - Can be an indicator for poverty but also as part of cultural setting
  - Less or no interaction with veterinary authorities
  - Disease prevention and control less effective
  - Little compliance with regulations
    - vaccination
    - Reporting
    - Animal movment tracebiluty

Cross border informal movement

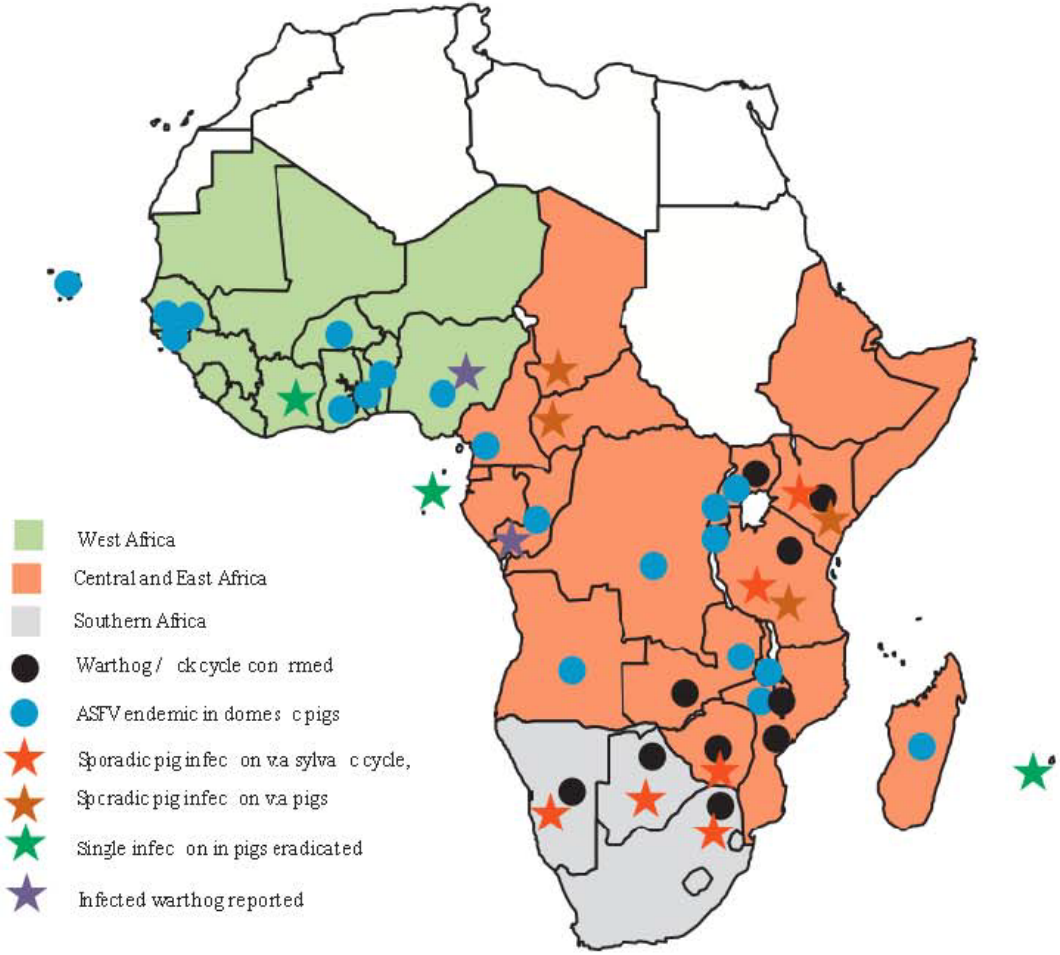
- Borders are virtual for border area communities
- Unregulated animal movement within private vehicles

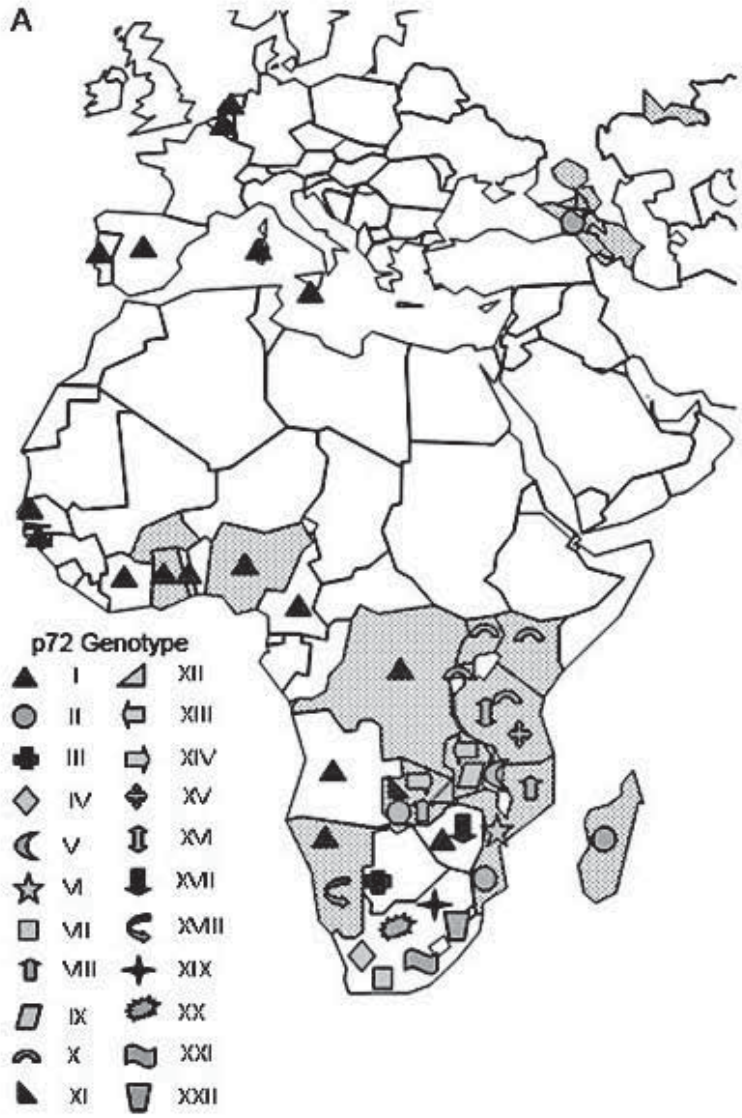
Backyard sector – informal trade

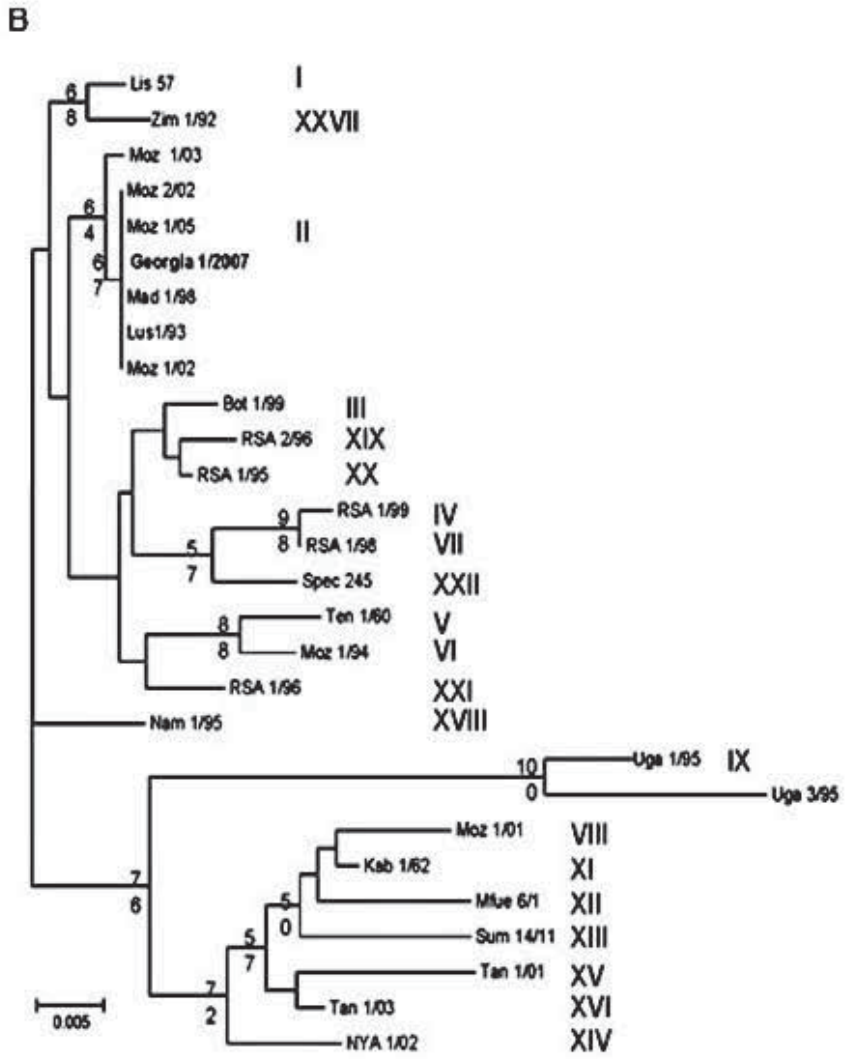
- Informal trade not only local
- People travel long distances
- Bring traditional pork products with them
- Product leftover might be fed to pigs
- Product leftover might be not disposed correctly
  - Feral pigs
  - Wild boar with access to garbage

ASF distribution in Africa

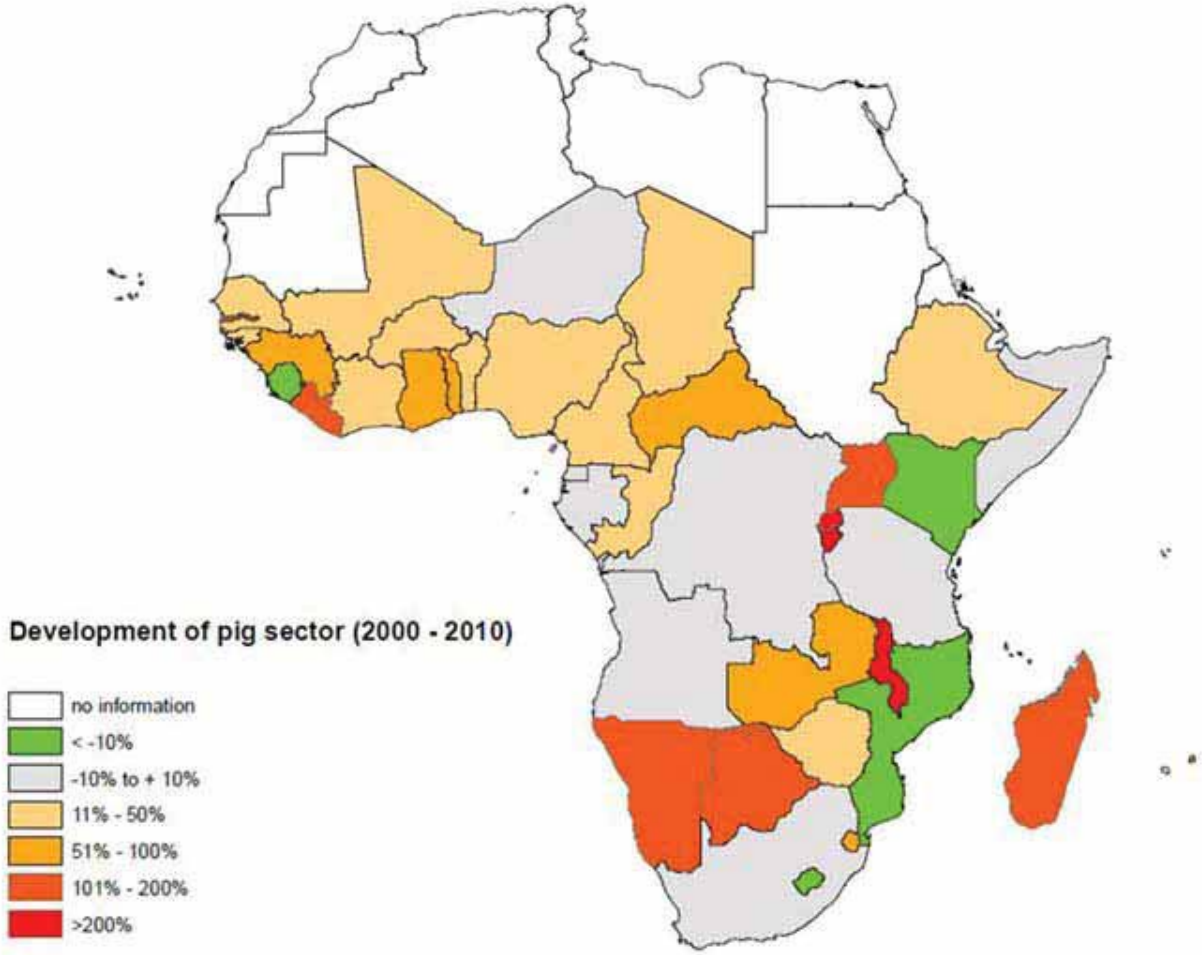
M.-L. Penrith et al. / Virus Research 173 (2013) 228–246



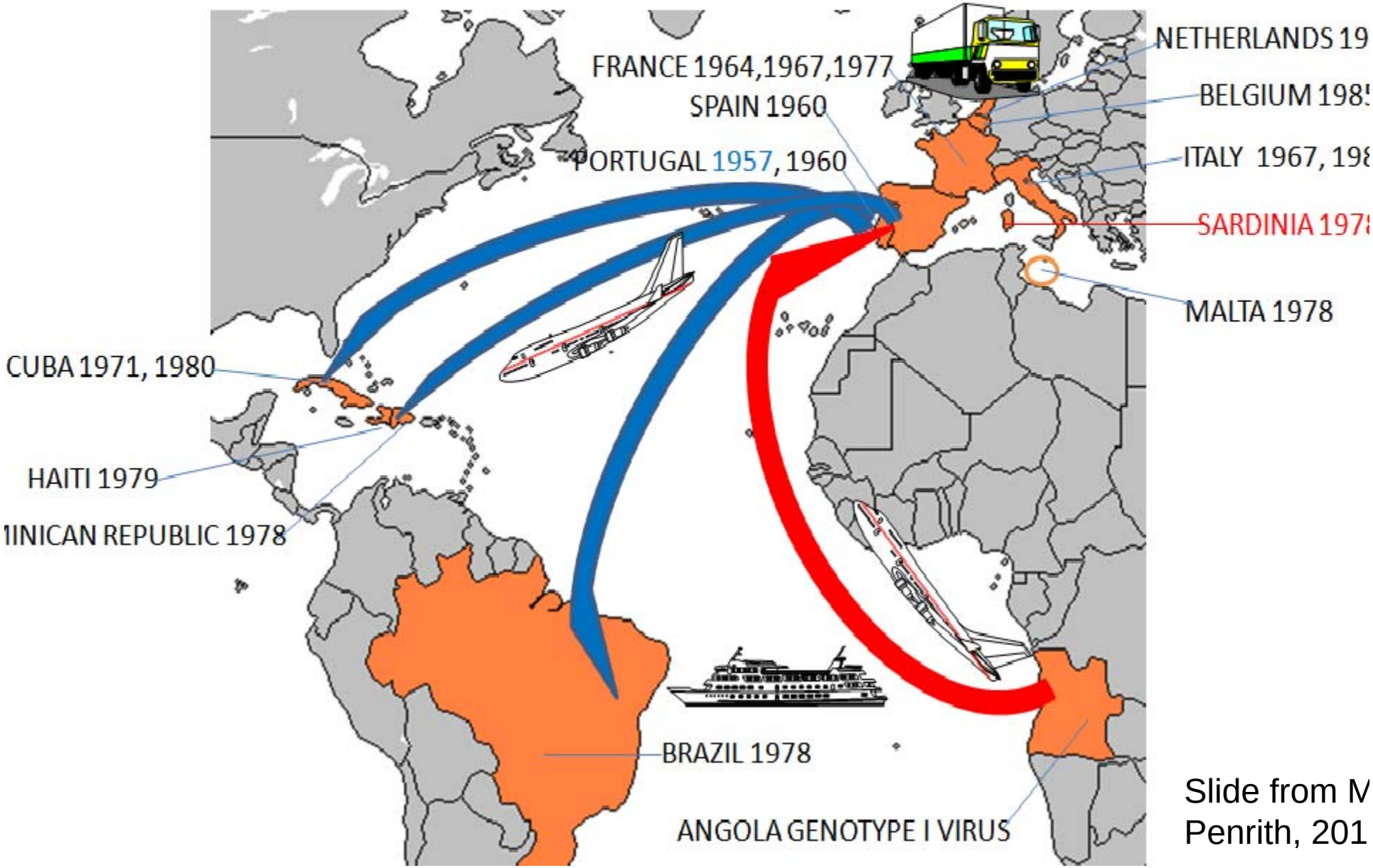

A
p72 Genotype
I
II
III
IV
V
VI
VII
VIII
IX
X
XI
XII
XIII
XIV
XV
XVI
XVII
XVIII
XIX
XX
XXI
XXII


B
Lis 57
Zim 1/92
Moz 1/03
Moz 2/02
Moz 1/05
Georgia 1/2007
Mad 1/98
Lus1/93
Moz 1/02
Bot 1/99
RSA 2/96
RSA 1/95
RSA 1/99
RSA 1/98
Spec 245
Ten 1/60
Moz 1/94
RSA 1/96
Nam 1/95
Uga 1/95
Uga 3/95
Moz 1/01
Kab 1/62
Mfue 6/1
Sum 14/11
Tan 1/01
Tan 1/03
NYA 1/02
I
XXVII
II
III
XIX
XX
IV
VII
XXII
V
VI
XXI
XVIII
IX
VIII
XI
XII
XIII
XV
XVI
XIV
0.005

Development of the pig sector in Africa (2000-2010)

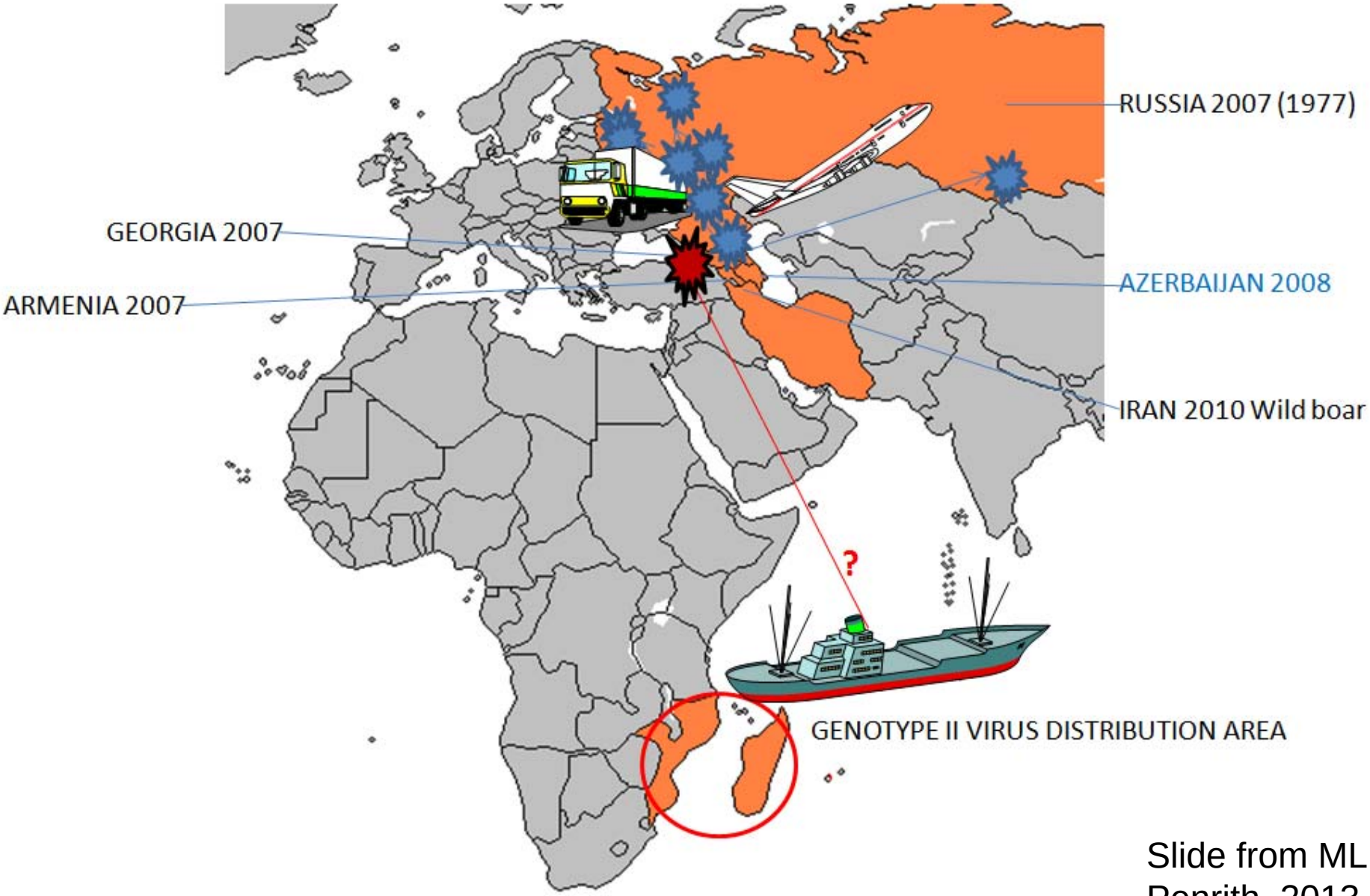


ASF OUTSIDE AFRICA (1) 1960

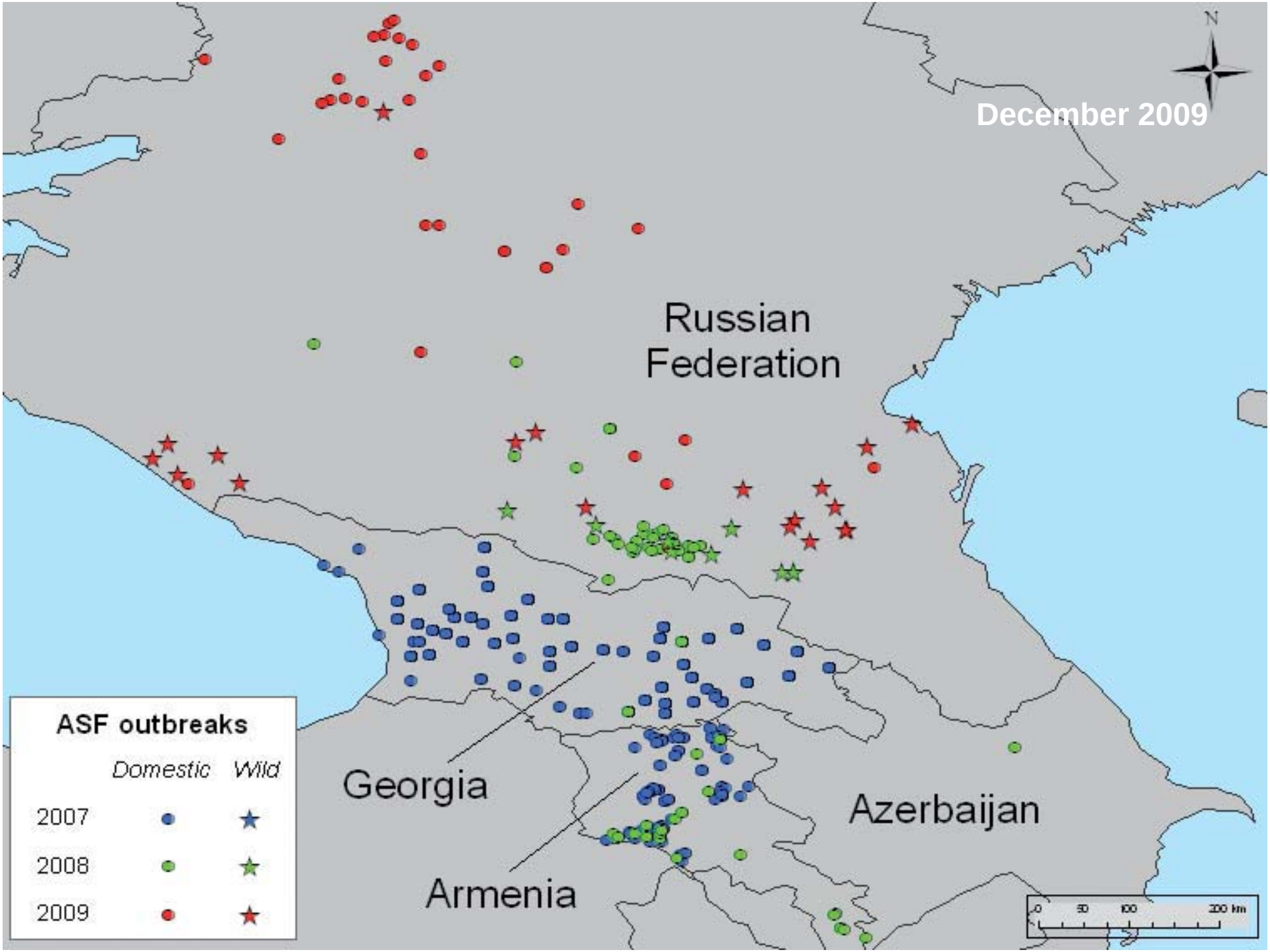


Slide from M
Penrith, 201

ASF OUTSIDE AFRICA (2) 2007



Slide from ML Penrith, 2013


December 2009
N
Russian Federation
Georgia
Armenia
Azerbaijan
ASF outbreaks
Domestic
Wild
2007
2008
2009
0
50
100
200 km

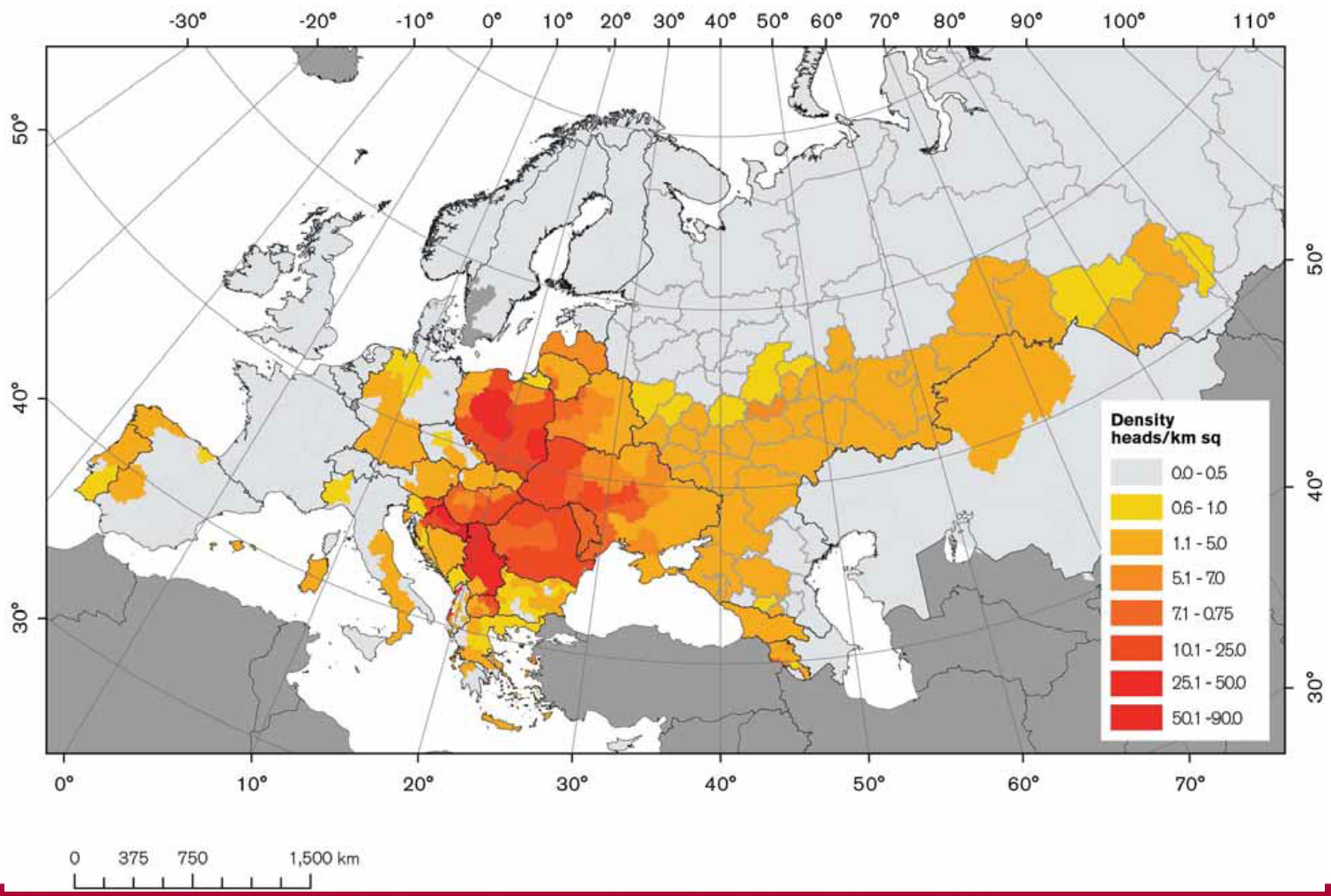
ASF evolution in the region

- June 2007 - Georgia
- August 2007 - Armenia
- December 2007 - Russia in wild boar
- January 2008 - Azerbaijan (single intro in pigs)
- Dec 08-Jan 2009 - Iran (detected in 3 wild boar)
- July 2012 - Ukraine (single intro in pigs)
- June 2013 – Belarus (two reported outbreaks)
- 2014 Lithuania and Poland, detected in wild boar

The backyard challenge

- Backyard is present in all countries are variable degrees
- High within-country and seasonal variability
- Many unknowns on the backyard, e.g. location and numbers, pig keeping, slaughtering, processing and trade (largely informal) of live pigs and pig products
- Vet services neglect backyard
- Prevention & control most challenging in backyard
  - Poor awareness
  - Poor compliance
  - Stamping-out approach doesn't work

Where next?


-30°
-20°
-10°
0°
10°
20°
30°
40°
50°
60°
70°
80°
90°
100°
110°
50°
40°
30°
Density heads/km sq
0.0 - 0.5
0.6 - 1.0
1.1 - 5.0
5.1 - 7.0
7.1 - 0.75
10.1 - 25.0
25.1 - 50.0
50.1 -90.0
0
375
750
1,500 km

Issues that prevent an effective control of the transboundary spread of ASF (through trade and other routes)

- Affects mainly backyard, where prevention, early detection and control are most challenging
- Spread through pork products that are difficult to control
- Frozen and preserved (infected) pork products act as the reservoirs of the disease
- 1000s of people moving daily from infected areas into on-infected areas, bringing potentially infected pig products with them (workers, tourists, diaspora)
- Unreliable compensation
- Wild boar role unclear

More examples

- PRRS in southeast asia
- Spread along the main pig trade routes
- Borders not well controlled
- People and animals transported without major obstacles / control

FAO approach

- Getting to know who we‘re dealing with:
- Value chain analysis
- description of production systmes in local context

Farmer's Hand Book on Pig Production
(For the small holders at village level)

Food and Agriculture Organization of the United Nations

Tailor control to local realities

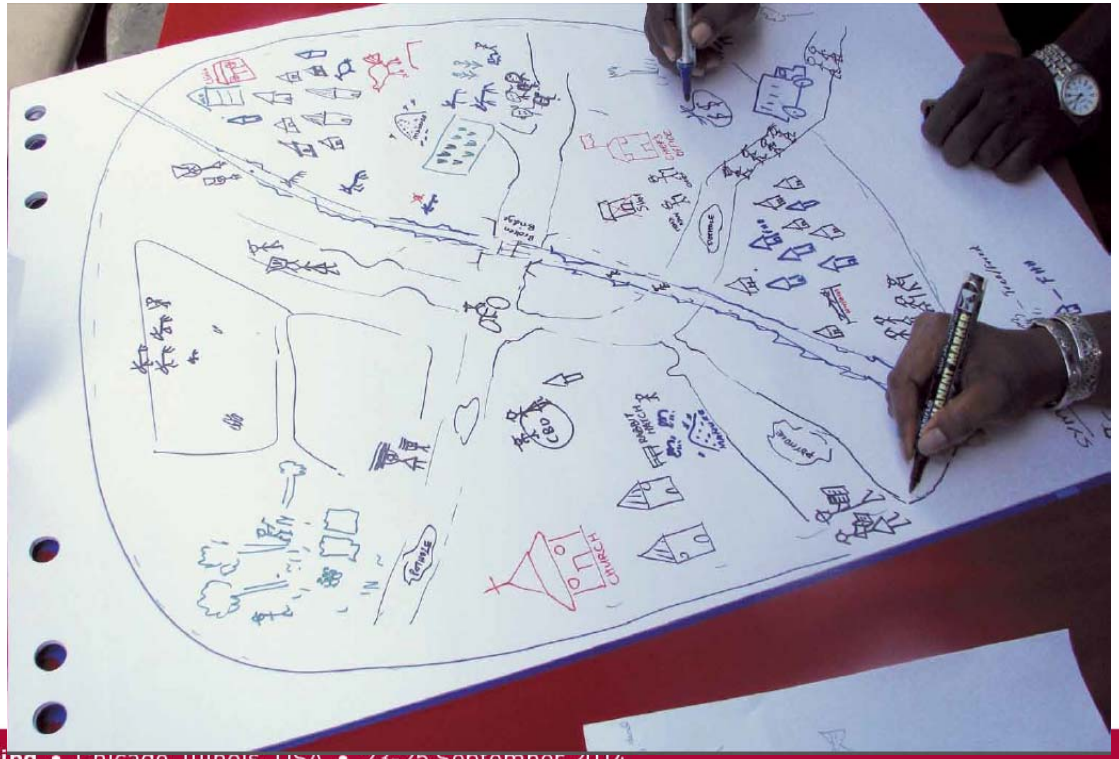
- Based on value chain knowledge
- Realistic goals
- Avoidance of drastic measures
- Protecting livelihoods first
- Sustainability is not a bad word….

What to aim for

- Successful containment better than failure to eradicate leading to further spread
- Build connection between producers and vet authorities
- Build trust
- Ownership of local stakeholders

Surveillance in backyard sector

- Tailor surveillance as well
- Low access population
  - Participatory epidemiology



Working with the small scale producers

- Giving them a voice
- Improve their capacity
- Help them improve their way of producing
  - Help them improve biosecurity
- Improve marketing options for them
  - Producers associations
  - Access credit

Conclusions

- Don‘t ignore the backyard sector
- Not easy to work with but crucial
- Important to understand the socio-economic aspects of this sector
- Disease control in this sector is beyond the traditional veterinary approach
- Work with them instead of against them