OIE/FAO Global FMD Conference 2009
June 26th 2009 - Paraguay

The global control of FMD challenges, opportunities and lessons learnt from the Global Rinderpest Eradication Campaign

Joseph Domenech, Keith Sumption, and Juan Lubroth
Animal Health Service, FAO Rome
Importance of the disease

- Direct costs;
  Mortalities, reduction of productions...
- Indirect costs;
  Trade, movement limitations in extensive systems, ploughing and transport...
- Food insecurity
Cattle plague - Northern Cape Province

Cape Colony - South Africa, 1897 (Onderstepoort collection)
Ensemble pour éliminer la peste bovine d’ici 2010

Programme mondial d’éradication de la peste bovine
What is rinderpest?

Ocular and nasal discharge

Fever

Diarrhoea or dysentery

Dehydration and death

Erosions

Discharges
GREP
Regional Rinderpest Eradication Campaigns

- PARC
- Middle Asia
- Arabian Peninsula
- SAREC

WAREC
THE PROPOSED OIE/GREP PATHWAY TO GLOBAL RINDERPEST FREEDOM

Regional and Global GREP Milestones

No more disease and vaccination ceases

1st international survey

2nd international survey

2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010

PROVISIONAL FREEDOM FROM RINDERPEST

FREEDOM FROM DISEASE

FREEDOM FROM INFECTION

GLOBAL DECLARATION RINDERPEST ERADICATION
Quality assurance of vaccination programmes are vital to ensure that herd immunity targets are attained.

The advent of the C-ELISA and H-ELISA were paramount to provide timely, high throughput results.
Vaccine Failure

• Maternal derived antibody in calves
  – 10-11 month extinction point
  – Calves with high titers do not respond to vaccination

• Thermostability
  – Plowright/Mariner/Threalose
  – Vectored vaccines

• Vaccination strategies and veterinary infrastructure
Differentiating Vaccines

- Capripox vectored-rinderpest vaccine (LSD/RP and ....SP-GP/PPR)
- Vaccinia-vectored rinderpest vaccine, (HA and F genes)
- Differentiation between vaccination and infection
- Heterologous vaccine - PPR
Participatory Approaches
Acceptable

• To the livestock owners
• To all other stakeholders
Participatory Disease Searching

• Targeted surveillance
• The use of participatory rural appraisal methods to search for disease outbreaks
• Highly sensitive
  – Traditional information networks
  – Extended time frame
Next steps

• Countries dossiers presented to OIE for recognition of RP free status
• Joint FAO OIE Committee for global recognition
• Book on RP and eradication history
Next steps

• Global Declaration of RP Eradication 2010
• International agreement for storage and confinement of virulent rinderpest viruses isolates and live vaccine stocks
## Rinderpest

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<th>Activities</th>
<th>Countries</th>
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<td>Assistance for Rinderpest dossier formulation</td>
<td>Bangladesh, Comoros, Kosovo, Liberia, Sao Tome e Principe.</td>
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<td>Dossiers submitted to OIE with problem</td>
<td>Sierra Leone, Turkmenistan, Laos</td>
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<td>Assistance for strategy development, kits and sampling</td>
<td>Cameroon, Central African Republic, Chad, Djibouti, Georgia, Israel, Kazakhstan, Nigeria, Niger, West Bank and Gaza, Russia, Saudi Arabia, Somalia, Sri Lanka, Syria, UAE and Yemen</td>
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<td>Surveillance needs to be undertaken or no information</td>
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<td>Ongoing surveillance</td>
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<td>Dossier ready or already been sent to OIE</td>
<td>Gambia, Kuwait, Qatar, Niger, Cambodia and Somalia,</td>
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* ELISA kit already in country  
** Starting the field surveillance in June 2009  
*** Samples to be tested in neighbouring laboratory country

Infection free: 137  
Disease free: 3  
Provisionally free: 12  
NB. Commitment for 2010 deadline for the following: Saudi Arabia, Sri Lanka and Russia
FMD – differences to rinderpest

• no single vaccine

• immunity to vaccination: short lived

• multi-species: ruminants and pigs (worldwide), wildlife
Lessons learned

- Long term vision
- International public good
- Government commitment
- International community support
- Support from International and Regional Organizations
Lessons learned

- Necessary tools in place:
  Official pathway OIE
  Vaccines and quality control (PANVAC), Laboratory diagnostic tools and quality control
  Networks for surveillance, laboratory diagnosis, training...
- Community based approaches where appropriate
- Research: wildlife role, thermostable vaccines
Lessons learned

GREP model
International Coordination

- A platform to engage global support and partnerships, evolve and adapt to challenges

- A Secretariat to support regional efforts, audit progress and communicate to all parties
Foot and Mouth
Global Disease Control

Challenges and opportunities
Surveillance

- methods: randomized, targeted
- risk identification: high risk situations, markets, borders, wildlike domestic interface...
The Market Map complete
FMD “Hotspots”

Surveillance

- Networks: back to back with laboratory networks
- International Reference Centers
- Rumor tracking systems
- Information systems: WAHIS
- Disease intelligence: GLEWS
- Sample shipment
- Research
Participatory approaches

- People to find their solutions
- Ownership
- Active surveillance done by professionals and risk-targeted
- Closer partnership between veterinary technicians and livestock owners
- Better understanding of social context
Public Private Partnership

Private producers, traders, industry, vaccine producers...

Are in the forefront for surveillance, detection, reporting, response
Diagnostic Veterinary Laboratories

- OIE and FAO International Reference Laboratories and Centres
- International OIE FAO Network
- Sub Regional and Regional Networks of National Diagnostic Laboratories
- Research to improve the diagnostic tools
Movements of Animals and Products – Traceability

Globalization of trade and movements of people
Trade in animal products

- Poultry flows
- Beef flows
- Pork flows

- Russia
- USA
- Brazil
- Canada
- Mexico
- Argentina
- India
- Australia
Important tool for many purposes

- Traceability of products
- Theft control
- Health certificates
- Animal Welfare
- Application of certain medicaments
- Disease control
- Traceability of animals
- Management on farm
- Agricultural policy
- Herdbook
- Distribution of costs among all stakeholders
Vaccines

Efficient tool
Several methods
Limitations
Research
Wildlife

- Cost of sampling
- Representatitivity of the surveys
- Preservation of samples
- Diagnostic tests
Interface Wildlife domestic animals

- Problems with fences
- Human and domestic herds introduction
- Transfrontalier Conservation Areas
Holistic approaches
Animal health in the wider rural development and health systems contexts

Spec. Dis.  Health Systems  Rural Development, Livelihoods, Food Security...
GLOBAL APPROACHES

Socio economic context

Cultural contexts

Farming systems

Good Governance and Veterinary Services

Public-Private partnership
Very different situations

- Different farming systems
- Trade contexts
- Economical situations
- Legislations
- Cultural contexts
Very different situations

- Eradication in the European Union
- Eradication in parts on Southern America and Southern Africa
- Good progress in parts of South East Asia
- Poor results in Sub Saharan Africa and Central Asia
Global Vision

- Long Term Vision
- Regional Approaches adapted to each context

The Progressive Control Pathway (PCP)
Why Regional Roadmaps?

- successfully applied in Europe (1954-onwards: EuFMD)
- Regional programs - being applied in South-East Asia and South America
- FMD virus strains differ between regions –
  - 7 major virus pools
  - vaccine recommendations differ
- distinct regional contexts for managing transboundary diseases
- regional political and economic characteristics
The Global Challenge - How to co-ordinate national efforts to achieve regional – and global progress?

Seven major FMD virus pools
Continual virus circulation, evolution and emergence within regional pools
Epidemic jumps between pools and to free regions (arrows)
Global Control through Regional Roadmaps for each of the seven virus pools

promoting national efforts in line with the Progressive Control Pathway (PCP)

Recommendation of the Global (Open) Session of the EuFMD research group held in Erice, Sicily, October 2008
FAO Progressive control Pathway
- risk reduction approach

• not a top down prescribed approach: but each MS encouraged to develop national risk reduction strategies that are supportive to the regional effort

Stages 0-3
= infected countries/zones

0  | Risk not controlled
   | Continuous FMDV circulation

1  | Critical risk points identified, strategy being developed

2  | Critical points addressed
   | ↓ incidence

3  | Approaching freedom
   | Outbreaks < once / year

4  | Officially free with vaccination
   | No circulation / containment zones only

5  | Officially free without vaccination
   | No circulation / containment zones only
Regional Roadmaps

- Workshops to draft Roadmaps for:
  - West EurAsia (Shiraz 11/08)
  - Sub-Saharan Africa (Nairobi 1/09)
  - North Africa (Algiers, 2/09) and Middle-East (Beirut, 4/09)

- Each Roadmap:
  - Has a vision - up to 2020
  - Uses the regional support structure
    - Regional Animal Health Centers of FAO/OIE/regional partners
    - Reference centers (outside of region if required)
Vision for the West EurAsia Roadmap for FMD Control: Shiraz, Iran - 11/08

Regional cooperation among Eurasian countries ..............

for the progressive control of FMD through public and private partnerships

leading towards freedom of clinical disease by 2020 for regional economic development, food security, and poverty alleviation.
Spread from India to east and later to west – middle-east and central Asia epidemic 2006-8:

- Thrace 2007, Turkey, Caucasus
- Kazakhstan 2007
- Thrace 2007, Turkey, Caucasus
- Egypt 2007

Adapted from Report of WRL to EUFMD
Roadmap
West EurAsia – Roadmap to 2020 - expected country progression
(Shiraz Meeting Report, 2008)

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N: Level 0
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hatched: Level 2
Level 3: Level 3
Level 4: Level 4
Level 5: Level 5
Summary of FMD status in Africa

Pool 4
SAT1, O, SAT2, A
Wildlife and domestic cycle

Pool 5
SAT1, SAT2, O, A
Domestic cycle

Pool 6
SAT1,2,3
Mainly wildlife, increasingly domestic

Adapted from WRL website
FAO/OIE/AU-IBAR Workshop to review PCP Survey results – Nairobi Jan 09
## PCP – Expected progression in Africa

Nairobi Workshop, Jan 09 + Algiers WS for North Africa

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### Map

- **North**: 2009 and 2020
- **Central**: 2009 and 2020
- **South**: 2009 and 2020
Global Co-ordination

GfTADS FMD Steering Committee:
• drawn from all regions
• Gf-TADS Regional Steering Committees, FAO and OIE Commissions, references centre network
• review global annual progress report and progress of the Roadmaps

Global Secretariat/Co-ordination
• promote and support regional units/roadmaps
  • progress reporting (Annual State of FMD Control)

Regional Support Units/Roadmaps

Regional Support Units/Roadmaps
The value of a Progressive Control Pathway

- applicable in ALL affected regions
- starts simple – surveillance and strategy
- promotes and builds FMD control – starting from a low base
- action indicators and outcomes measurable
- enables comparison across countries
- complimentary to PVS approach
- principle is risk based, optimises use of limited resources
  - target critical control points for maximum impact
Global Framework and Tools already exist

The FAO OIE Global Framework for the progressive control of Transboundary Animal Diseases
GF TADs
FAO–OIE Collaboration in Animal Diseases Prevention and Control

- Collaborative framework
- Common Activities
- Common Tools

GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

UNSIC

CMC-AH
Crisis Management Centre
Animal Health

GLEWS
FAO–OIE Collaboration in Animal Diseases Prevention and Control

- Collaborative framework
- Common Activities
- Common Tools

ALIVE
A multi stakeholders platform on livestock in Africa

Regional Organizations, EISMV, FARA, CIRAD, IAH, Donors...
FAO–OIE Collaboration in Animal Diseases Prevention and Control

- Agreement FAO-OIE signed in Feb 2009 (Tunis, Gabarone, Bamako) and in May 2006 (Beirut)
- Agreements with IBAR to be signed shortly
- RECs to join shortly

-Decentralized ECTAD Units based in the RAHCs
Other tools

- **Networks:** Epidemiology, Laboratories, Socio Ecoeconomy, Communication...
- **PVS tools**
- **Norms, standards, guidelines**
Conclusions

Progressive Control of FMD is possible
Good examples and models exist
Conclusions

It needs several conditions

- Political commitment
- International support and
- Good governance with legislation, chain on command...
- Animal Health Systems with Public Private Partnership
Conclusions

- Holistic approaches
- Socio economic contexts
- Emergency responses capabilities
- More research

FMD control to be considered as an International Public Good and to be included in the new One World-One Health approach.
Thank you for your attention