Lessons learned from rinderpest and from past and on-going PPR control

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Outline

These lessons learnt can be stratified into:

- PARTNERSHIP AND COORDINATION
- STRENGTHEN VETERINARY SERVICES
- LABORATORY/EPIDEMIOLOGICAL NETWORK
- POLICY
- MODELS USED

Coordination and partnerships

- The high level of collaboration and synergy among OIE, AU-IBAR, FAO, other bilateral and international donors (EU) demonstrated flexibility in their ability to develop new control mechanisms,
- Ecosystem approach with coordination and harmonization between the veterinary services (HoA, Cent Asia, Malawi-Moz-Zambia…)
- A sustained donor and country support
- GREP Secretariat with global co-ordination unit →Alliance
- "OIE Pathway" gave clear guidance to all countries at each stage of the process.
- Regional Institutions and member countries (well-designed strategy)
- Learn from errors: exit strategy (JP-15), use of vaccine, sero-monotoring/conversion, identification of animals (earmarked, sero+ ...)...

Strengthen veterinary services

- The period of rinderpest eradication in developing countries witnessed the increased investment in surveillance capacity, early detection and rapid response mechanisms as well as effective donor collaboration.
- This has helped to generally strengthen national animal disease surveillance networks for other diseases in these countries, while making use of innovative community-based vaccination programs, participatory surveillance systems based on local knowledge.
- It has also optimized control strategies that targeted high-risk communities through combinations of new service delivery models, participatory epidemiology and epidemiological modelling.
- Sustained funding for effective disease reporting/early warning system, for all stakeholders to ensure early detection and rapid stamping out of any future incursion of disease.

Laboratory and epidemiology networks

- Networks were an essential forum for the discussion and analysis of disease status data and the exchange of information,
- Support provided to national laboratory services for organizing intensive and sustained surveillance programmes
- Reference laboratories for confirmatory diagnosis and vaccines QC,
- Sero-monitoring to verify the success of the vaccination programme,
- Large batches of antigen and control sera were produced to minimise test variation between laboratories.
- Trainings, workshops etc

Policy

- The strategy used for rinderpest eradication, although not applicable to all diseases, could be used as a blueprint for some diseases such as peste des petits ruminants (PPR).
- Key factors other than those mentioned above were the availability of an excellent vaccine, secure long-term funding, the establishment of the GREP Secretariat in FAO Rome as a global co-ordination unit and the evolution of the “OIE Pathway to Freedom from Rinderpest”, which gave clear guidance to all countries at each stage of the process.
- The drive and determination of a few key people was also essential to the remarkable success.

Tools developed and applied

- Innovative approaches: Community Animal Health Workers (CAHWs) and community involvement
- Epidemiology (participatory epidemiology techniques, risk-based surveillance, modelling and random map coordinated)
- Rational and strategic vaccination (immuno-sterilization) based on rigorous epidemiological surveillance and outbreak response: “seek-confirm-eliminate”
- Technical guidelines and communications strategy formulated
- The ecosystem approach with enhanced coordination and harmonization between the veterinary services of neighbouring countries proved critical for the final eradication of rinderpest.

Models used

- **European model**: XVIII, XIX, XX c: zoosanitary measures
- Southern Africa model (1890-1904)
- **Edwards' Myanmar vaccine model** (1936 to 1940) with population immunity level to 60% +epidemiology
- The **Chinese eradication model** (1950 to 1957): integrated approach that combined epidemiological knowledge with compulsory vaccination and zoosanitary measures based on rigorous stamping out, disinfection and surveillance against reintroduction
- **Indian model** (1956 to 1996): failure with 15 - 20% immunity rate. Creation of a central coordinating unit pushing a policy of intensified vaccination targeting 80% immunity rate.

Models used cont

- **African model**: eliminated from the southern part of the Africa through a mixture of pragmatic zoosanitary controls and the introduction of the serum-virus simultaneous method of immunisation.

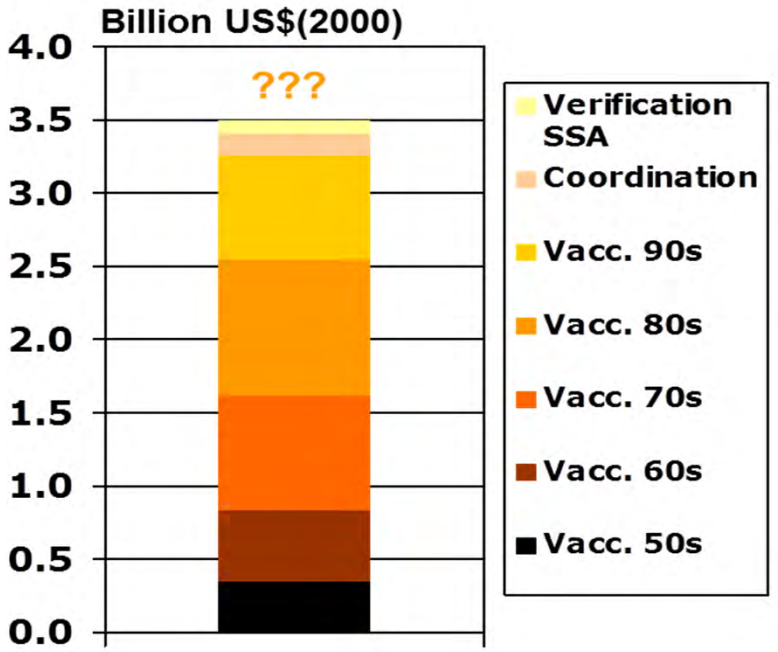
JP-15, PARC, PACE, SERECU

- **Middle East**: regional coordination through NEAHI, MIDEADEP, WAREC but national zoosanitary contol measures and surveillance,
- **Asia**: regional coordination through SAREC but national zoosanitary contol measures and surveillance,

Total Cost of RP Eradication (Otte)

- Vaccination 1950s: US$2.50
- Vaccination 1960s: US$1.25
- Vaccination 1970s: US$1.10
- Vaccination 1980s: US$0.95
- Vaccination 1990s: US$0.80
- Coordination: 5% (JP15 3%)
- Verification: PACE & SERECU (EUR81 million)
- Miscellaneous (research, quarantines, movement control, etc): **???**
- Coordination

Total: 3.15 billion vaccinations



Total cost of eradication since 1950s very likely to be less than US$ 5 billion !!

Cost of PPR Control

Morocco

- 22 M small ruminants WITH 3 yearly mass vaccination campaign
- 95% by private veterinary
- Total cost: 24 M Euro---→ Unit cost of the vaccination~0.42

Unit cost of the vaccination in Rep Congo~0.38

Somalia 11 M Euro to vaccinate 20 m animals (PPR), 7m (CCPP), 20,000 sera for sero-monitoring and cold chain~0.35

- **Total small ruminants pop at risk: 1.15 billion**
- **Extrapolated unit vaccination cost: 0.4**
- **3 yearly mass vaccination: 0.4*3*1.15~ 1,4 billion**

Few field activities

Countries	Activities
Algeria, Libya, Mauritania, Morocco	Surveillance, training, , mov control, lab equipment, socio-economic data collection to formulate guidelines on socio-economic study.
Angola	Surveillance, vaccination and , mov control.
Tanzania	Surveillance, mov control, vaccination, socio-economic study.
Pakistan	Surveillance, , mov control, vaccination, socio-economic study
Somalia	Surveillance, vaccination, sero-monitoring, , mov control, socio-economic study…
Malawi, Mozambique and Zambia	Emergency preparedness
Kyrgyzstan, Lebanon, Syria	

Conclusion

- Control and prevention is an international public good and requires long-term investment from Governments, donors, private and public sectors.
- There is need to establish an effective surveillance system for the exchange of disease information and for expeditious emergency responses.
- Need for solid pool of recognized National/Regional experts (disease managers) to be able to respond to demands from Member States.
- Capacity building should be assisted by the provision of technical assistance, and a close partnership with other bodies and international organizations.

Conclusion

- Progressive control on a global basis has to be a priority for national veterinary services, and for regional and international organisations.
- National Policies and programs should be put in place for the control and/or eradication of PPR
- Socioeconomic assessment to be strengthened in order to prioritize actions and interventions
- There is a need to establish Country/Regional Wildlife Disease Associations for professionals in ministries of agriculture, environment, forestry and health.

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Conclusion

- Regional Diagnostic Centres should be established to provide guidelines as well as training continuously to the member countries. It would help in the improvement and standardization of laboratory procedures.

- National livestock departments should arrange in-service training courses for the field veterinarians (disease managers and epidemiologists) and laboratory technicians.

- Quality assured and cost effective vaccines should be available in each country/region.

Let not new ideas
die too soon

THANKS