



African Union

Interafrican Bureau for Animal Resources

Cost-Benefit Analysis of Rinderpest Eradication in Africa

Report of a 1-day Methodology Workshop held at AU-
IBAR, Nairobi,
4 April 2011

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Rationale



Global Rinderpest eradication June 2011

Need for systematic and comprehensive assessment of benefits, costs and possible untoward effects to inform future animal health initiatives.

Limited budgets and competing demands leading to need for economic evidence to guide decision making regarding the funding of livestock sector in general and the animal health sector in particular



Objectives of the Workshop



- Reach a consensus on a methodological framework for an *ex-post* socio-economic assessment of the costs and benefits of rinderpest eradication at national, regional and continental level (and global in the case of FAO).
- This framework should also be applicable for the *ex-ante* assessment of the costs benefits of the control / eradication of other diseases.



Format



- **Morning Session**
 - Presentations of case studies followed by discussions

- **Afternoon Session**
 - 2 working groups addressing key aspects of the assessment: (i) time frame, (ii) counterfactual, and (iii) scope followed by plenary discussion



- Large amount of externalities / spillover effects and adaptive behaviour that need to be considered.
- Problems of valuation / pricing of livestock services and commodities and disease control inputs and shifts in these prices resulting from disease control / eradication.
- Difficulties to 'capture' the dynamics of the transformation of the livestock sector and associated value chains.
- Limited availability & quality of data.



Externalities / Spillover Effects (Examples)



- Investments in capacity to control / eradicate rinderpest (epidemiology-surveillance, laboratory diagnostics, vaccine quality assurance, CAHWs, etc.) also accrue to control of other diseases.
- Particular impact of rinderpest in mixed farming systems relying on draft power and linkages of livestock sector and agriculture with the rest of the economy.
- Effects of rinderpest (eradication) on wildlife and the environment.



Adaptive Behaviour (Examples)



- Farmers may hedge against rinderpest by managing herd composition (more small ruminants, more reproductive females) and herd movements.
- Rinderpest outbreaks in vicinity may lead to destocking and subsequent (drastic) price falls.
- Presence of rinderpest in neighbouring country prompts 'defensive' investment (e.g. border vaccination) in rinderpest-free countries.
- Rinderpest-free countries close markets to infected countries, thus eradication affects international trade flows.



Valuation / Pricing (Examples)



- Intangible goods, e.g. farmers' perceived value of reduced risk of herd loss.
- Non-marketed livestock services and products, e.g. savings and insurance function of livestock.
- Marketed products and services whose prices may be distorted by policy interventions (e.g. taxes, over-/undervalued exchange rate, subsidies, etc.)
- Domestic price shifts due to opening / closing of export markets .



Conclusions



- **Methodological challenges are high and data limitations are large (any estimate will require thorough sensitivity analyses).**
- **Rinderpest eradication is of historical significance and some estimate of the magnitude of costs and benefits of specific (e.g. JP-15, PARC, etc.) and total investments is warranted.**
- **Embark on a 'quick and dirty' yet comprehensive CBA (i.e. addressing issues highlighted previously) of rinderpest eradication in Africa and the rest of the world.**



Conclusions



- **Timeframe of the assessment**
 - Start: time band between late 1940s & early 1960s when countries (e.g. China & India) and regions (Africa) contemplated eradication.
 - End: 2020
 - Sufficiently reliable livestock sector projections available
 - MDG target date
 - Due to discounting of future benefits these would approach 0



Conclusions



- **Counterfactual (alternative scenario):**
 - No regional / international coordination and no (limited) international funding.
 - Countries continue rinderpest control programmes along the lines they pursued before regional / global efforts were instigated, i.e.
 - Movement control and import restrictions
 - Prophylactic vaccination along borders and in high risk areas
 - Perpetual low-level occurrence of outbreaks
 - Reactive vaccination around outbreaks



Conclusions



- **Scope (aspects to include in the analysis without necessarily attempting most precise quantification)**
 - Direct production and livelihoods impacts
 - Effects on herd structure, species composition (substitution between cattle and small ruminants)
 - Effects on crop output and overall economy (through value chains)
 - Trade impacts
 - Rinderpest-specific research (e.g. vaccine development) and surveillance costs
 - Coordination and verification costs



Conclusions



- **Countries to include**

- Carry out the assessment for as many countries as possible rather than extrapolation from a few 'exemplary' / 'prototype' countries (this approach will provide insights into the variability / stability of the estimates).
- Aggregate country results to regional results using regional models to capture interdependencies.



Thank You



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