Cost benefit analysis for FMD Control Programs: A decision making toolkit

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Key Questions

- What is the socio-economic impact of FMD?
- Given an epidemiological context what is the best efficient strategy?
- What would be the least costly strategy?
- Vaccinate cattle first before small ruminant or all together? How much will it cost?
- What are the cost of the different component of the control programme (surveillance, vaccines, vaccination, stamping out…)?
- What are the inputs that matters in a decision making process?
Veterinary Science

Economic Modelling

Knowledge

Assumptions

ECOVET-TAD

- ECOVET-PPR (Presented on 2014)
  Cost benefit analysis and cost effectiveness analysis of PPR control programs
- ECOVET-FMD
ECOVET-FMD
OBJECTIVES

- Rapid financial evaluation;
- The least relevant data possible;
- Quick Estimation of FMD impact;
- Adaptation to the epidemiological context and to the strategy’s objectives and target population;
- Simulation and sensitivity analysis.
- Takes into account
  - A simplified dynamic herd modeling
  - Price volatility (season, prices, production systems)
- Good communication/advocacy of the VS with national financial and political institutions and international partners
What does it Consist of

- Costing tables for the control strategy options;
- Impact on the target population:
  1. Dairy farms;
  2. Beef farms;
  3. Mixed farms (dairy + sheep + goats)
     ++ A combination of the three types or all of them.
How Does it Work

- Economic modelling: the simple representation of reality;
- Using the cost benefit analysis as methodology
  1. Considering two situations: “with program” and “without program” to know what the control program real impacts;
  2. Estimating the costs and the benefits of the program for each situation;
  3. Discounting: comparing monetary values over time: 10 years;
  4. Calculating the indicators (Income of farmers; intern rate of return, capital recuperation time…)
  5. Sensitivity analysis and simulation.
How To Use It

• Scenarios and strategies
• Data entry
• Indicators
• Simulation
• Support the decision making
The User have total control over the scenarios:
- Evolution of the disease and the impact of the program,
- Herd dynamic in presence of the disease.
Data Entry

- The User have total control over the scenarios but not on the tool
- Have access to input cells but not to formulas
- Graphic visuals to minimize errors

Error! The total must be 100%

Error! When the user tries to access formulas

The weight should always go up & the weight of healthy animals should always be more than affected ones
The impact on the number of animals

The impact on the reproduction performance

The impact on the production (milk, sheep meat, goat meat, number of calves…)

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• Simulation consists of constantly changing values of different variables in order to create a large spectrum of scenarios.
• Anticipating any abrupt change and estimating its impact on the budget.
• Helps to illustrate the picture of FMD-strategy, as a first step it is a good and provide simple straightforward answers to different important questions but it should be complemented by risk analysis (using Monte Carlo Simulation @Risk)
The model used depends solely on the quality of data;
The design of the tool may be improved by access more data, especially if it is recorded over time;
For the time being, the tool only accounts for quantities to estimate the impact of FMD-control programs, and should cover prices’ change, impact on job market, externalities, impact on the value chain …
Lack of data and documentation on how the FMD affects each production systems in North Africa.
Sound assumptions to improve such tools for other diseases, to have an understanding of the economic impact and to conduct simulations.

- Development of support tools (guide, tutorial).
- The toolkit is under development to be uploaded for free from FAO website.

More reliable data ➔ Better understanding ➔ better assumption ➔ better tools ➔ better and quick informed decisions
Thank you

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