

# Cost-benefit analysis framework

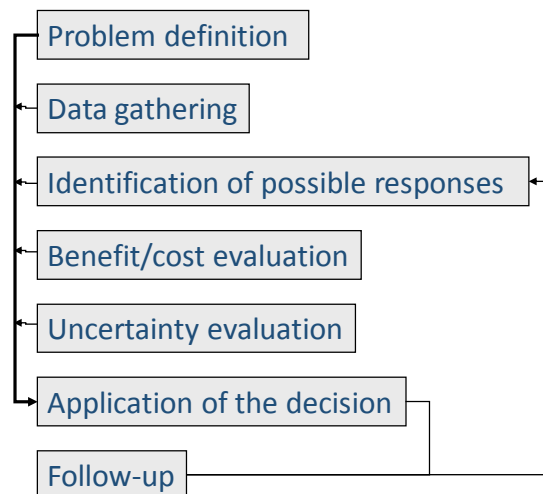
Jordi Casal

Regional workshop on lumpy skin disease (LSD) prevention and control strategies

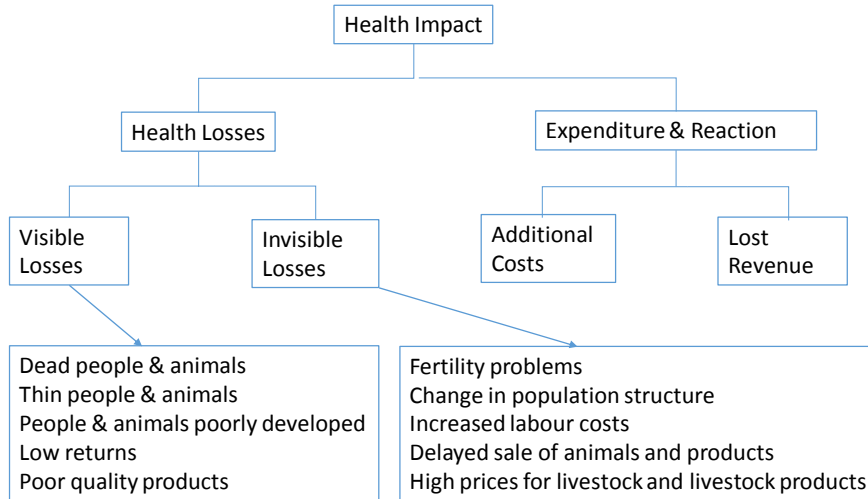
Tirana, 10-11 May 2017



## Taking health decisions

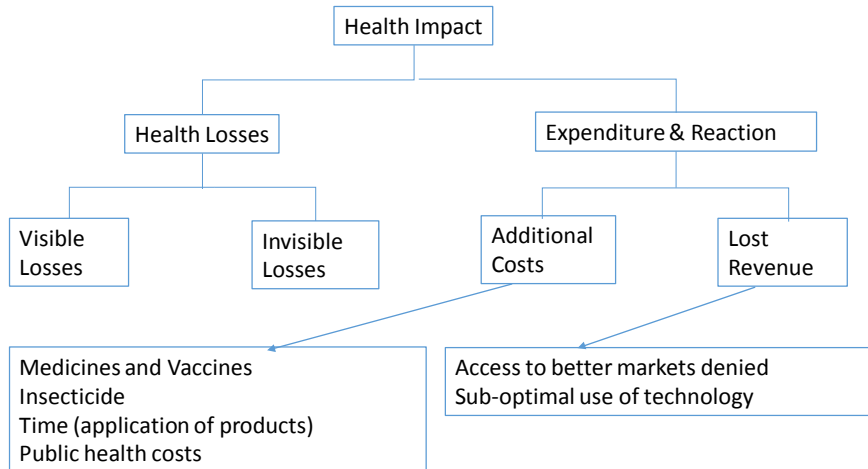


## Items to be included in an economic impact assessment of animal diseases



From Rushton, 2016

## Items to be included in an economic impact assessment of animal diseases



From Rushton, 2016

## Cost / benefit analysis

Three different types of benefits and costs:

**Easy to quantify.** Ex:  
↑ milk production.

**Difficult to quantify**  
(estimations): Ex.  
growing animals with a  
weight without market  
prices.

**Intangible benefits.** Ex: prestige,  
satisfaction, consumer trust, etc.

## Cost / benefit analysis

Benefit ??

How can we calculate the revenues ( the benefit)?

Benefit streams in the future or in a scenario are  
predictive – not definitive!

- For animal health decisions benefit streams are based on:
  - Epidemiological models
  - Market models
- Both types of models contain levels of uncertainty

## Cost-benefit analysis

- There are also additional costs and additional benefits that occur in different years (time periods):
  - They need to be converted to present values
- Metrics:
  - net present value (NPV: benefits - costs in present values)
  - benefit cost ratio (BCR: benefits / costs )
- Economic impact:
  - At the national level / At farm-level
  - For the Government / For the farmer

Cost benefit analysis (CBA) is a systematic approach to estimate the strengths and weaknesses of alternatives.

It is also defined as a systematic process for calculating and comparing benefits and costs of a decision, policy or (in general) a project.

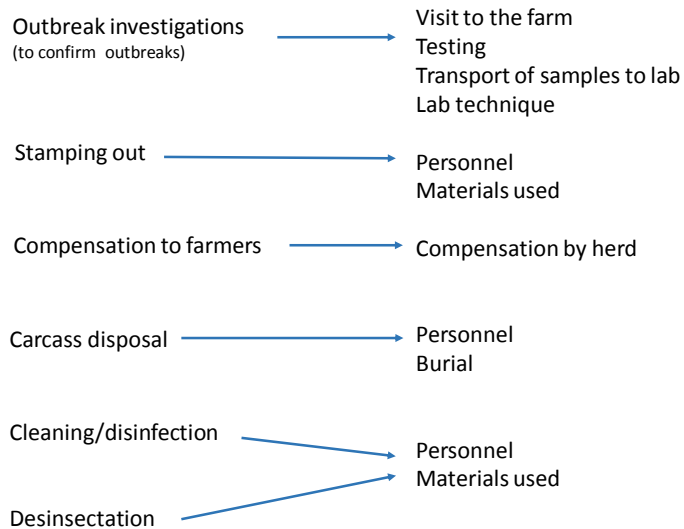
Reaction costs

- ✓ Control activities in outbreaks
- ✓ Surveillance activities within the country
- ✓ Control activities in non-affected farms

Diseases losses

- ✓ Direct costs in affected farms
- ✓ Indirect costs

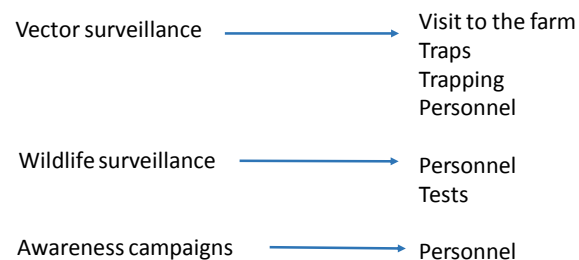
## Control activities in outbreaks



## Control activities in non-affected farms



## Surveillance activities within the country



## Direct costs

Milk

Abortions

Hides

## Indirect costs

Trade restrictions → Animals  
Semen  
Embrios  
...

Loose of opportunity → Milk  
Meat  
Salaries  
Fixed costs