Abstract, EuFMD Impact Calculator

Foot-and-mouth disease (FMD) is a highly contagious trans-boundary viral disease that affects cloven-hoofed animals with devastating social and economic impacts.

The economic effects of FMD are not equal across the globe. To effectively assess the impact of an outbreak one needs to take into consideration the size of the susceptible animal population, the type of livestock production systems, value chains present and the ripple effects on the wider economy.

To assist decision-making on FMD control an FMD impact calculator was developed, for the rapid assessment of an outbreak based on readily available data. This takes the form of a deterministic economic model and provides estimates of the impact of an outbreak and the costs of the outbreak response in a country that was free from FMD. Through a decision-tree approach the model gives an indicator of the most economically favourable strategy to control the outbreak. Impact is modelled considering information on the livestock sector, relevant value chains and epidemiological inputs. Estimates of the costs of different control strategies and associated losses are produced using readily available data. It does not take into consideration the more complex and uncertain ripple effects of an epidemic across the livestock sector and the wider economy. It is recognised that attempting to predict such impacts can be important and are contemplated qualitatively. This considers possible consequences and likelihood, while allowing users to express judgement on whether it could be a major concern.

Together the quantitative cost model and the qualitative assessment provides a powerful but simple method of quickly assessing control options assisting decision making during an outbreak or as part of a contingency planning process.

It is anticipated that the FMD Impact Calculator will link to other epidemiological and economic models to make more accurate predictions on the wider economic impacts of an FMD outbreak.