**An epidemiological and economic model analysis of Foot and mouth disease outbreaks in the Netherlands**

*Dr. RHM (Ron) Bergevoet, DVM. Wageningen University, the Netherlands*

In the recent past, the Netherlands was confronted with large outbreaks of trans-boundary animal diseases, like CSF, FMD and HPAI. Events that changed our thinking on animal diseases control and prevention. Insights helped to update contingency plans, implement preventive measures and added vaccination to-live strategies since the occurrence of DIVA vaccines to the toolbox of the policy options.

The outbreaks in the Netherlands made clear that just applying EU minimum measures was not sufficient to quickly contain outbreak in a densely populated livestock area. To support the decision making process, to compare different policy options and to facilitate communication with stakeholders, insights from epidemiological and economic models were used. Comparing and evaluating the outcomes of the models led to common insights. For example:

* in densely populated livestock areas EU minimum measures are not sufficient to quickly contain an outbreak
* consequential losses, borne by the farmers are substantially larger than the direct losses, born by government, farmers and EU.
* vaccination–to-live can substantially decrease the direct costs of the eradication of trans-boundary animal diseases. However the indirect losses increased and in case no arrangements are been made, need to be borne by the farmers that have to vaccinate their animals. Public-private arrangements need to be made to avoid that these farmers pay the full price of a future catastrophe

Mainly triggered by the large outbreak of FMD in the a number of countries all over the world started to develop these kind of models. Comparing the outcomes of these models lead to vital insights into the specific characteristics of both disease and the structure of a countries’ livestock that determine the preference for a specific control strategy, also for countries that do not have these models available.