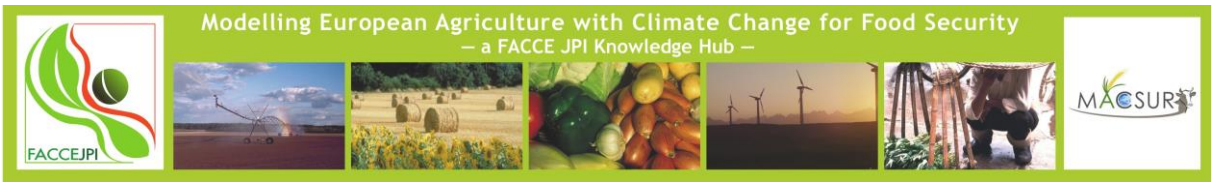

FACCE MACSUR

D-L2.1.1/L2.2.1: Challenges and priorities for modelling livestock health and pathogens in the context of climate change

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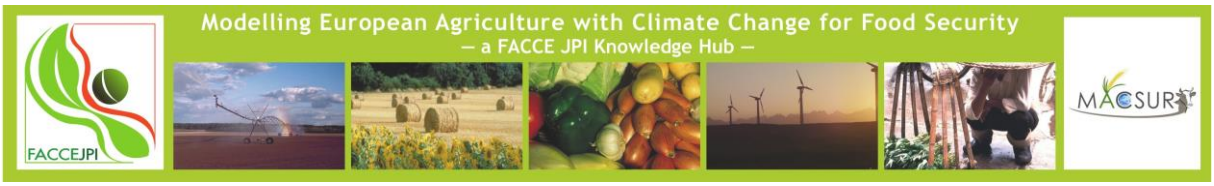
1.0	First Release	2016-07-01



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Abstract/Executive summary

Climate change has the potential to impair livestock health, with consequences for animal welfare, productivity, greenhouse gas emissions, and human livelihoods and health. Modelling has an important role in assessing the impacts of climate change on livestock systems and the efficacy of potential adaptation strategies, to support decision making for more efficient, resilient and sustainable production. However, a coherent set of challenges and research priorities for modelling livestock health and pathogens under climate change has not previously been available. To identify such challenges and priorities, researchers from across Europe were engaged in a horizon-scanning study, involving workshop and questionnaire based exercises and focussed literature reviews. Eighteen key challenges were identified and grouped into six categories based on subject-specific and capacity building requirements. Across a number of challenges, the need for inventories relating model types to different applications (e.g. the pathogen species, region, scale of focus and purpose to which they can be applied) was identified, in order to identify gaps in capability in relation to the impacts of climate change on animal health. The need for collaboration and learning across disciplines was highlighted in several challenges, e.g. to better understand and model complex ecological interactions between pathogens, vectors, wildlife hosts and livestock in the context of climate change. Collaboration between socio-economic and biophysical disciplines was seen as important for better engagement with stakeholders and for improved modelling of the costs and benefits of poor livestock health. The need for more comprehensive validation of empirical relationships, for harmonising terminology and measurements, and for building capacity for under-researched nations, systems and health problems indicated the importance of joined up approaches across nations. The challenges and priorities identified can help focus the development of modelling capacity and future research structures in this vital field. Well-funded networks capable of managing the long-term development of shared resources are required in order to create a cohesive modelling community equipped to tackle the complex challenges of climate change.

Reference and link for full published paper

Özkan, Ş., Vitali, A., Lacetera, N., Amon, B., Bannink, A., Bartley, D.J., Blanco-Penedo, I., de Haas, Y., Dufrasne, I., Elliott, J., Eory, V., Fox, N.J., Garnsworthy, P.C., Gengler, N., Hammami, H., Kyriazakis, I., Leclère, D., Lessire, F., Macleod, M., Robinson, T.P., Ruete, A., Sandars, D.L., Shrestha, S., Stott, A.W., Twardy, S., Vanrobays, M.-L., Ahmadi, B.V., Weindl, I., Wheelhouse, N., Williams, A.G., Williams, H.W., Wilson, A.J., Østergaard, S., Kipling, R.P., 2016. Challenges and priorities for modelling livestock health and pathogens in the context of climate change. Environmental Research 151, 130-144. doi 10.1016/j.envres.2016.07.033

http://www.sciencedirect.com/science/article/pii/S001393511630319X