



SASVEPM 2025 Pre-Congress Workshop Report

Title: Quantitative risk assessment of Foot and mouth disease in South Africa

Dates: 17–19 August 2025

Sponsors: University of Pretoria and European Union - Southern African Development Community Economic Partnership Agreement

Venue: ANEW Resort, White River, Mpumalanga

1. Purpose and Strategic Context

The SASVEPM pre-congress workshop were delivered over three days (17-19 August) as a targeted capacity-building initiative ahead of the annual congress. The workshops were designed to strengthen animal health biosecurity, risk assessment capacity, and quantitative analytical skills, with particular emphasis on Foot-and-Mouth Disease (FMD) in the South African and regional context.

The pre-congress programme responded to growing challenges related to transboundary animal diseases, food security, trade, and socio-economic vulnerability, and aligned with regional priorities for risk-based decision-making, One Health integration, and evidence-informed policy development.

2. Workshop Structure and Delivery

The pre-congress programme was delivered over three consecutive days, combining conceptual, policy-focused discussions with intensive technical training.

Day 1 (17 August):

Strengthening Animal Health Biosecurity and Risk Assessment in South Africa

Facilitators: Prof Nenene Qekwana, and Prof James Oguttu

Days 2–3 (18–19 August):

Quantitative Risk Assessment of Foot-and-Mouth Disease in South Africa Using R Studio: Principles, Application, and Communication

Facilitator: Dr John Grewar

The workshops blended lectures, facilitated discussions, case studies, group reflections, and hands-on computer-based exercises using the SASVEPM pre-congress workshop Manual: Principles and Application with R Studio.

3. Content Assessment and Key Themes

3.1 Biosecurity and Risk Assessment (Day 1)

Day 1 focused on strengthening understanding of biosecurity as a context-dependent, systemic tool rather than a purely technical intervention. Participants examined South Africa's

disease control challenges, including recent outbreaks of FMD, African Swine Fever (ASF), and Highly Pathogenic Avian Influenza (HPAI), and their far-reaching socio-economic impacts.

Key themes included:

- Biosecurity as a shared responsibility, requiring engagement beyond the state to include industry, communities, and private actors
- The need to incorporate community realities and socio-economic conditions into biosecurity and disease control strategies
- Recognition of gaps in veterinary services legislation, decentralised governance, and uneven implementation capacity across provinces
- The importance of Public-Private Partnerships with clearly defined mandates

Participants explored the concept of a National Biosecurity Hub, intended to improve coordination and management of Sanitary and Phytosanitary (SPS) information, while acknowledging challenges such as funding, fragmented collaboration, infrastructure limitations, and disconnects between government and academia.

The session also introduced core biosecurity concepts, including:

- Biosecurity versus biosafety
- The three levels of biosecurity (conceptual, structural, procedural)
- Zoning and compartmentalisation (including relevance for FMD)
- A One Health integrating human, animal, environmental, and plant health



Figure 1: Group photo of the pre-congress workshop participants.

3.2 Risk Analysis and Risk Assessment Foundations (Day 1)

Risk analysis was introduced as a central decision-support tool, comprising:

- Hazard identification
- Risk assessment
- Risk management
- Risk communication

Participants engaged with both qualitative and quantitative risk assessment approaches, discussing their relative strengths depending on data availability, scope, complexity, and policy needs. Emphasis was placed on understanding disease pathways, socio-economic consequences, and balancing disease risk reduction with trade obligations.

3.3 Quantitative Risk Assessment of FMD Using R Studio (Days 2–3)

The two-day technical workshop focused on building practical competency in quantitative risk assessment (QRA), with FMD used as a case study.

Participants were introduced to:

- Core risk assessment definitions and principles
- The relationship between likelihood and consequence in defining risk
- FMD-specific hazards, exposure pathways, and consequence assessment
- Practical challenges in data availability and uncertainty

Hands-on sessions enabled participants to:

- Install and use R Studio
- Apply quantitative modelling techniques to FMD risk scenarios
- Conduct data analysis and visualisation
- Interpret outputs for decision-making and communication

Structured reflection sessions revealed that common challenges faced by participants included difficulty quantifying risks and limited access to quality data highlighting the relevance of the training.

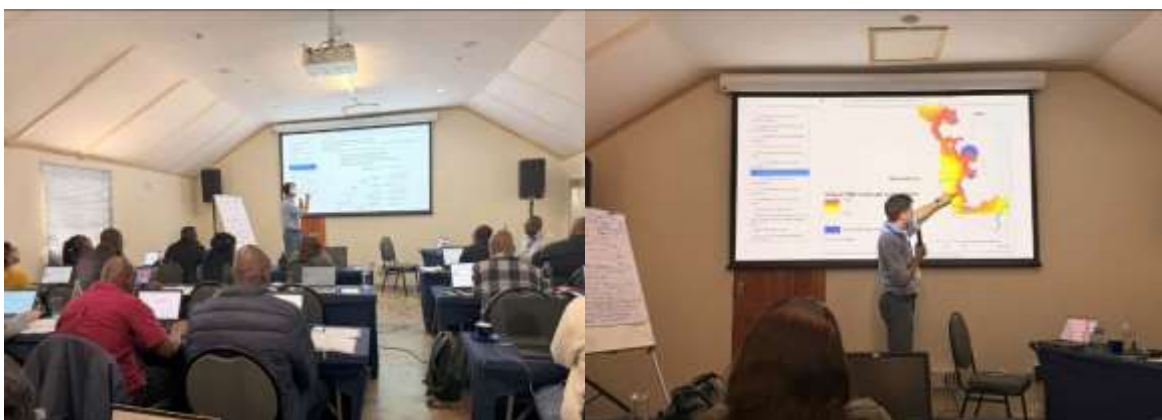


Figure 2: Left photo: Pre-congress workshop participants paying attention to the facilitator.

Right photo: Dr John Grewar capacitating participants on risk analysis and assessment.

4. Outcomes and Skills Development

By the end of the pre-congress programme, participants demonstrated improved capacity in the following areas:

- Knowledge and Conceptual Understanding
- Stronger understanding of biosecurity within socio-economic and governance contexts
- Clear differentiation between biosafety and biosecurity
- Improved grasp of qualitative and quantitative risk assessment frameworks
- Technical and Analytical Skills
- Practical experience in quantitative risk assessment using R Studio
- Improved ability to model disease pathways and assess uncertainty
- Enhanced skills in interpreting and communicating risk assessment outputs
- Policy and Decision-Making Readiness
- Improved awareness of how risk assessments inform policy development, trade negotiations, and disease control strategies
- Increased confidence in engaging with multidisciplinary teams and stakeholders

5. Sponsorship and Value Contribution

The pre-congress workshops were sponsored by the University of Pretoria and European Union - Southern African Development Community Economic Partnership Agreement (EU-SADC EPA) represented by Dr Alexander Toto. This support was instrumental in enabling high-quality technical training and expanding access to specialised skills that are critical for regional animal health management and SPS compliance.

The programme delivered strong value by linking policy-relevant biosecurity discussions with hands-on quantitative tools, bridging the gap between theory, practice, and decision-making.

6. Overall Impact

The SASVEPM Pre-Congress Workshops made a meaningful contribution to:

- Strengthening regional animal health risk assessment capacity
- Promoting evidence-based, risk-based approaches to disease management
- Supporting One Health and multidisciplinary collaboration
- Enhancing preparedness for managing priority transboundary animal diseases, particularly FMD

7. Conclusion

The 17-19 August pre-congress programme successfully achieved its objectives and provided a strong foundation for the main SASVEPM Congress. The integration of contextual biosecurity discussions with advanced quantitative training equipped participants with both strategic insight and practical tools.

SASVEPM acknowledges the facilitators, sponsors, and participants for their active engagement and contributions to the success of the pre-congress workshops.