MANAGING DISEASE AT THE WILDLIFE-LIVESTOCK INTERFACE
Zaragoza (Spain), 26-30 November 2018

PROGRAMME

1. **Introduction and basic principles (2 hour)** (E. Ferroglio, G. Cáceres)
   - 1.1. Host-pathogen-vector-environment relationships
   - 1.2. Wildlife population distribution and trends
   - 1.3. What is the wildlife-livestock interface?
   - 1.4. Why are shared infections relevant? Examples of situations that may need managing
   - 1.5. What is the purpose of management?
   - 1.6. Institutional framework and the "One Health" dimension
2. **Understanding infection at the interface (3 hours)**
   - 2.1. Dynamics and complexity of infections in wildlife (1 h) (D. Delahay)
   - 2.2. Epidemiological investigations (1 h) (G. Cáceres)
     - 2.2.1. Types of epidemiological investigations
     - 2.2.2. Experimental evidence
     - 2.2.3. Risk factor analysis
   - 2.3. Challenges in dealing with infections in wildlife (1 h) (D. Delahay)
     - 2.3.1. Data collection: what and how?
     - 2.3.2. Tools for analysis
     - 2.3.3. Interpreting incomplete data
3. **Monitoring and surveillance (3 hours)**
   - 3.1. What is the purpose? (3.1 and 3.2: 1 h) (M.C. Arnal)
   - 3.2. Different approaches for different needs (M.C. Arnal)
   - 3.3. Integrated monitoring of pathogens, populations and environment (3.3 and 3.4: 1h) (C. Gortázar)
   - 3.4. Identifying hotspots (C. Gortázar)
   - 3.5. Use of novel molecular tools (1 h) (F. Smith)
4. **Management approaches (8 hours)**
   - 4.1. Acceptance, control or eradication (4.1 and 4.2: 1 h) (J.R. López-Olvera, C. Gortázar)
   - 4.2. Overview of intervention options: advantages and drawbacks (J.R. López-Olvera, C. Gortázar)
   - 4.3. Prevention of infection spread (2 h)
     - 4.3.1. Translocation of livestock and wildlife (0.5 h) (E. Ferroglio)
     - 4.3.2. Managing interactions between livestock and wildlife (1 h) (G. Cáceres)
       - 4.3.2.1. Barriers at different scales
       - 4.3.2.2. Livestock husbandry
     - 4.3.3. Waste management (0.5 h) (J.R. López-Olvera)
   - 4.4. Population management (1 h) (D. Delahay)
     - 4.4.1. Decreasing population densities: culling, sterilization, etc.
     - 4.4.2. Selective removal
     - 4.4.3. Habitat management
   - 4.5. Controlling vector-borne diseases (1 h) (E. Ferroglio)
   - 4.6. Medication (1 h) (C. Gortázar, E. Ferroglio)
     - 4.6.1. Vaccination
     - 4.6.2. Treatment
   - 4.7. Combining approaches (1 h) (G. Cáceres, C. Gortázar)
     - 4.7.1. Zonification and compartmentalization
     - 4.7.2. Adaptive management
     - 4.7.3. Integrated disease control

4.8. Assessing the effect of intervention (4.8 and 4.9: 1 h) (D. Delahay, J.R. López-Olvera)
4.9. Ecological impacts of interventions (D. Delahay, J.R. López-Olvera)

5. **The social and economic dimension (2 hours)** (G. Enticott)
   5.1. Cost-benefit analysis
   5.2. Stakeholder engagement
   5.3. Ethical considerations
   5.4. The importance of evidence
   5.5. Risk communication and decision making
6. **Modelling (1 hour)** (F. Smith)
   6.1. Infection dynamics
   6.2. Simulating management
   6.3. Social and economic models
   6.4. Using modelling to inform decisions
7. **Case studies (3 hours)**
   7.1. Tuberculosis (1 h) (C. Gortázar, D. Delahay)
   7.2. Avian influenza (0.5 h) (G. Cáceres)
   7.3. African Swine Fever (0.5 h) (G. Cáceres)
   7.4. Leishmania and Rift Valley Fever (1 h) (E. Ferroglio)
8. **Practical work (11 hours)**
   8.1. Demonstration of sample collection, handling and storage (2 h) (M.C. Arnal, D. Fernández de Luco)
   8.2. Group work on surveillance and management based on case studies (1 h introduction to the practical + 4 h working sessions + 2 h presentation of results and discussion) (J.R. López-Olvera, M.C. Arnal, C. Gortázar, F. Smith, E. Ferroglio, G. Cáceres)
   8.3. Technical visit: the interface in practice – wildlife-related risks in intensive and extensive farming (2 h + 2h) (M.C. Arnal, C. Gortázar)
9. **Final remarks and discussion (2 hours)** (J.R. López-Olvera, M.C. Arnal, C. Gortázar, G. Enticott, E. Ferroglio, G. Cáceres)