Title of the Workshop	**Integrated surveillance to early and sustainably detect disease emergence from wildlife**
Workshop organizers and facilitators	**Main contact : Olive Marie-Marie, Umr Astre CIRAD,** marie-marie.olive@cirad.fr Marie-Marie Olive is researcher working on the epidemiology of arboviral and zoonotic diseases at ASTRE Unit, Cirad, France. She conducts research on the transmission, the emergence, the surveillance and the control of arboviruses and zoonotic viruses at the human-animal-environment interface through One Health approaches. She has conducted workshops on the disease surveillance systems in West and Central Arica using participatory approaches with OIE and CIRAD. She is co-developing with OIE, IRD and Bioviva company a serious game on One Health surveillance. Goutard Flavie, Umr Astre, CIRAD, flavie.goutard@cirad.fr Flavie Goutard is a veterinarian specialized in applied epidemiology at ASTRE Unit, CIRAD, Vietnam. She has 15 years of experience in the field of infectious diseases epidemiology in tropical countries, working mainly on the development of adapted surveillance and control strategies for animal diseases in rural settings. Her recent research focus on participatory epidemiology, evaluation of surveillance, risk assessment and on the ways to improve zoonotic diseases detection with risk-based methodology. Bordier Marion, Umr Astre CIRAD, marion.bordier@cirad.fr Marion Bordier is a veterinarian specialized in applied epidemiology at ASTRE Unit, Cirad, Senegal. She works on the development of adapted surveillance and control strategies using One Health approaches. Her recent research focus on participatory epidemiology, evaluation One Health approach including of One Health surveillance systems. Bourgarel Mathieu, Umr Astre CIRAD, mathieu.bourgarel@cirad.fr Mathieu Bourgarel is a wildlife ecologist (bats, large herbivores...) working at ASTRE Unit, CIRAD, Zimbabwe. He has 15 years of experience in the field of Africa working on the emergence of diseases from wildlife. He is the coordinator of the EBOSURSY project for CIRAD. Caron Alexandre, Umr Astre CIRAD, alexandre.caron@cirad.fr Alexandre Caron is a veterinarian hosted at the Faculdade de Veterinaria at the Universidade Edouardo Mondlane in Mozambique and specialized in the ecology of disease transmission at the wildlife/domestic interfaces: trying to develop multi-disciplinary tools to study the factors and drivers of pathogen transmission processes and attempting to develop the theoretical background of this field. Chevalier Véronique, Umr Astre CIRAD, veronique.chevalier@cirad.fr Véronique Chevalier is a veterinarian specialized in applied epidemiology at ASTRE Unit, Cirad, Madagascar. She has 15 years of experience in the field of

	infectious diseases epidemiology in tropical countries. She is the coordinator of the ZooCoV project for CIRAD. Peyre Marisa, Umr Astre CIRAD, marisa.peyre@cirad.fr Marisa Peyre is an epidemiologist specialized in the evaluation of surveillance and control programs in animal health working at ASTRE Unit, CIRAD, France. She is a professional trainer in participatory epidemiology and health surveillance system evaluation to improve animal health management strategies in South East Asia, Africa and in Europe. She is co-developing with OIE, IRD and Bioviva company a serious game on One Health surveillance.
Motivation and description of the objectives, or learning outcomes, of the workshop	The current Ebola and Covid-19 crisis have shone the spotlight on the risk of diseases emergence from wildlife. More than 70% of zoonotic emerging infectious disease events are of wildlife origin. Wildlife exploitation (eg. trade and wild meat consumption) and habitat loss drive the potential spillover of pathogens from animals to humans and fuel the pandemic risks. However, most surveillance systems are not built with approaches that integrate human, animal (domestic and wild), and environmental health, which does not support early detection of emergence. How can we build efficient and sustainable disease surveillance systems to detect emergence from wildlife? During these 3 days, the workshop will provide a theoretical and practical application for integrated disease surveillance system to detect disease emergence from wildlife. At the end of the workshop participants will be able to: - Explain the importance of integrated and One Health (OH) disease surveillance systems including wildlife - Explain the issues of collaboration within OH surveillance to optimize its effectiveness - Describe the issues and objectives of wildlife disease surveillance - Know and understand challenges linked to One Health surveillance - Describe the different surveillance systems types including wildlife - Identify the best surveillance strategies adapted to a specific context - Know and understand some of the tools available to implement integrated disease surveillance systems - Know the different methods (qualitative & quantitative) available to evaluate One Health surveillance systems.
Background and skills the workshop attendees are expected to (or must) have	Knowledge on classic epidemiology and some notion on basic surveillance systems
Duration of the workshop	3 days

Content and structure	Special attention will be given to the use of real-life case-studies in order to cover a large range of surveillance approaches.

Time	Activity/Contents	Details
Day 1 : Specificities related to the design of wildlife surveillance systems		
8:30 -09:00	Introduction of participants, participants' expectations and previous experience in the field of wildlife surveillance Introducing the contents of the 3 days	Participatory approach
9:00 -10:00	Things you should know about the design of surveillance systems Things you should know about the evaluation of surveillance systems	Lecture
10:00-10:30	bio break	
10:30-12:00	How challenging is it to set up wildlife surveillance?	Brainstorming Problems trees
	Overview of wildlife surveillance systems	Lecture
12:00-13:00	lunch break	
13:00-14:30	Simulation exercise on an alert of disease emergence from wildlife	Simulation exercise
14:30-15:00	bio break	
15:00-16:30	Introduction of practical on case-studies: the project EBOSURSY, ZooCoV and SWM	Lecture
Day 2 : Integrated disease surveillance systems including wildlife		
8:30 -10:00	How challenging is it to set up integrated surveillance?	World Cafe
	What 's the benefit of community or participatory surveillance?	Brainstorming Problems trees
	Overview of integrated surveillance systems	Lecture
10:00-10:30	bio break	
10:30-12:00	Sensitization of the challenges of disease surveillance system integrating wildlife using a serious game	Tools: surveillance card game "Alerte"
12:00-13:00	lunch break	
13:00-14:30	How challenging is it to set up syndromic surveillance?	Plenary discussion
	Overview of syndromic surveillance systems	Lecture
14:30-15:00	bio break	
15:00-16:30	What indicators to evaluate a One Health surveillance system to detect disease emergence from wildlife?	World Cafe Group discussion
Day 3 : Construction of an effective and sustainable integrated surveillance system		
8:30 -10:00	Co-construction of integrated disease surveillance link to wildlife emergence Three case studies will be proposed (However, participants will have the opportunity to work on the construction of another integrated wildlife surveillance system of their choice): • Viral hemorrhagic fevers surveillance in one West Africa country • Coronaviruses surveillance in one South East Asian country • West Nile surveillance in one European country	Group work

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10:00-10:30	bio break	
10:30-12:00	Co-construction of integrated disease surveillance link to wildlife emergence	Group work
12:00-13:00	lunch break	
13:00-14:30	Co-construction of integrated disease surveillance link to wildlife emergence Groups restitution in Plenary session	Group work Plenary session: group discussion
14:30-15:00	bio break	
15:00-16:30	Evaluation of the workshop	

Maximum number of participants	Minimum 18 persons Maximum 24 persons
post-conference workshop	Post-conference workshop at the Centre of Veterinary Epidemiological Research, Charlottetown
Materials provided by the facilitators	The participants will be provided with a folder containing course notes for each lecture and practical case studies. An USB-key containing the additional reading material and the datasets for the exercises will also be provided to all participants.
Required meeting room set-up and equipment	3 round tables (for 8 participants each) 1 laptop per group of participants (3 laptops) Access to wifi connection and projector
Working languages of the workshop	English Instructors are also French-speakers
Online participation	Online participation in the workshop will be possible. However, the participant will not be able to participate actively to the simulation exercises.

References

EBOSURSY project : https://rr-africa.oie.int/en/projects/ebo-sursy-en/

EBO-SURSY Project deploys new surveillance card game “Alerte” : https://rr-africa.oie.int/en/news/ebo-sursy-project-deploys-new-surveillance-card-game-alerte/

ZooCov Project: https://www.cirad.fr/en/cirad-news/news/2020/science/covid-19-zoocov-a-new-project-to-prevent-coronavirus-transmission-from-wildlife-to-humans

SWM project: https://www.swm-programme.info/

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