



PREZODE European Workshop #1 Report

The PREZODE initiative is leading a co-construction process that is based on the commitment of all actors (scientific community, stakeholders, stakeholders) to build a strategic research agenda and a roadmap for its implementation in the different regions of the world.

This co-construction takes the form of a series of regional workshops whose specific objectives and deliverables are iterative from one workshop to another.

On July 6, 2021, the PREZODE initiative organized the first of the three European workshops intended for supporting the co-design of PREZODE's scientific strategy and contributing to the international strategic agenda of the initiative.

Altogether, these workshops have the following objectives:

- **To discuss and share a common vision** of scenarios in which pandemic risks would be minimized, especially through an improved prevention of zoonotic disease emergence.
- **To identify unmet needs for research and knowledge** aligned with PREZODE's sought-after goals,
- **To create scientific and societal momentum and federate a community of research scientists and of stakeholders.**

Objectives

The first workshop targeted scientists and aimed at (i) discuss the vision of PREZODE seen by the participants and reflect on the transformations corresponding to this vision, (ii) identify the science fronts, specify the specific European features and link them to transformations and (iii) create a scientific dynamic and a collective of researchers.

Participants

This workshop held on July 6 by visioconference, 2021, brought together 125 scientists coming from 19 European countries, within EU and outside (Norway, United Kingdom, Serbia, Switzerland) and representatives of over 60 research and higher education establishments across Europe (list in Annex 1).



Further more, the workshop was attended by some representatives of the private sector, such as the global veterinary pharmaceutical laboratory, CEVA Santé Animale, as well as by AVIA-GIS, and representatives of the European Commission from the following 3 DGs: DG Agri, DG INTPA and DG RTD also attended the meeting.

Introduction

As an introduction to the workshop; Dr Josef Settele, UFZ, gave an overview of major scientific and societal issues of (re)-emergence of zoonotic diseases from a "One health" perspective.

From the work of IPBES on biodiversity and ecosystem services (2019 report) and also the workshop on biodiversity and pandemics (April 27, 2020), a consensus has emerged on the important challenges we are facing after Covid-19 pandemic that is to consider when taking recovery and economic stimulus plans either the health systems, the environmental regulation and a One health approach. He highlighted the need to meet global societal goals through addressing the main drivers of change within terrestrial, freshwater and marine ecosystems (land use change, exploitation, climate change, pollution ...) and indirect drivers which are the root causes of nature deterioration: demographic and sociocultural, economics and technological, ...

He stressed the importance of prevention and the need to link science to policy. This leads to the reflexion on how science impact and help orient policies aiming at building a global sustainable growth.

Exchanges on the PREZODE vision

After the presentation of the PREZODE initiative, the participants exchanged their views on the PREZODE's vision based on the ambition and objectives of the initiative: understanding the risks and finding solutions to reduce them while strengthening rapid alert systems from local to global.

They had the opportunity to answer a pre-workshop survey that was still open after the workshop: What changes need to be made in the society in order to reach low level of emergence of zoonotic diseases? How would look like the "low zoonotic diseases emergence" society in Europe by 2040.

We received up to 71 responses coming from 47 European organisations. The answers to this survey addressed wildlife, farming practices, land us, international trade, surveillance and early detection. They have been analysed and the report is given in the annex.

Breakout groups

Then the workshop was divided into 3 working groups:

Rapporteurs of each group made synthesis of the exchanges which are given in the annex.



(1) "Risk of zoonotic emergencies" (1),

The group recognized that Europe has specificities in terms of biodiversity and human footprint. Regarding the factors involved in the zoonotic emergencies, the main discussions concerned globalization, climate change, biodiversity issues, the role of farming practices, land-use changes and socio-political factors. The rapid emergence and spread of antimicrobial-resistant infections, that could be of zoonotic origins were also discussed.

As a result, discussions on the knowledge gaps pointed out data monitoring, surveillance and modelling issues in the frame of One Health approach and issues regarding the evolution of farming practices toward more extensive and organic farming. In the frame of major environmental changes, the need to better characterized risks associated with vectors and with biodiversity loss was specifically pointed out. To predict which zoonotic pathogens will be likely to emerge or re-emerge at the interface of wildlife-livestock-, and human-systems in the future and mitigate the associated risks, knowledge on hosts/pathogens/microbiota would need to be better characterized. In addition, the group acknowledges the importance of an active dialogue between science and public health sector.

Finally, the group discusses on how answering scientific gaps would contribute to changes in the society with action on communication, collaboration with different stakeholders and development of multidisciplinary research.

(2) "Reduction of zoonotic emergencies"

The group felt that PREZODE should work broadly across pathogens to understand how to reduce risks from zoonoses, including endemic and newly emerging zoonotic pathogens. Processes of zoonotic disease emergence will need to be studied across multiple scales and ecosystem contexts through inter-disciplinary Systems approaches to allow locally relevant risk reduction measures to be specified. Regarding main stakeholder research to be conducted, much of the discussion focused on the need to understand the process of emergence and spill-over better through inter-disciplinary research and Systems approaches, especially on human activity, climate change, livestock factors, antibiotic resistance, biodiversity and international trade.



Regarding cutting edge science, discussions addressed Systems and eco-epidemiological approaches to understanding risk and spill-over, vulnerability and adaptive capacity, ecology and evolution of pathogens, science policy interface and capacity building.

Answering scientific gaps would contribute to changes in the society with improved integration and translation of knowledge of links between biodiversity, health and zoonotic diseases into all policies and fostering of ways to identify cross-sectoral policy evidence needs; fostering community level changes in behaviour that reduce the risk of zoonotic disease emergence; improved data collection protocols and improved information sharing across different sectors and improved knowledge about human – farmed animal – wildlife – environment interactions.

(3) "Surveillance systems" (3).

The group underlined that one major remaining challenge is yet to get to a concrete and efficient One Health framework. Therefore, we should make research a motor to reach this aim, starting from One-Science to One-Health. Especially, we still do not sufficiently cover environmental health. Thorough discussions were held on data collection, data management and data analysis issues.

Regarding how surveillance could induce changes in society to reach low levels of zoonotic emergence, it was underlined that the creation of integrated models that underpin decision-making, including the planning and implementation of surveillance in socio-agro-systems, will require a high level of understanding of pathogen transmission and distribution but also take into account economics, social & societal impact. Furthermore, the group pointed out the need to position science at the center of the decision-making process and that future investment should focus on transdisciplinary/co-created/co-designed methods for assessing needs and deciding on interventions between researchers and stakeholders. Finally, they underlined the need to inform and mobilize local populations about risk exposure.

These outputs will feed the reflections for the next steps.

Workshop 2 with stakeholders (October 28, 2021) will propose to discuss these transformations with the stakeholders after a synthetic restitution of Workshop 1 and, complete them, identify the actions necessary to achieve them (innovation, training, support for public policies);



The Workshop 3 (date to be determined) with all the stakeholders will aim to compare and integrate the lessons of workshops 1 and 2 and, on the one hand, propose a strategic European research agenda and the operational roadmap.