PANDASIA

PREVENTING FUTURE PANDEMICS

# External Scientific Advisory Board (SAB) established

A transdisciplinary research project funded by the EU and the UKRI

UK Research and Innovation

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**Pandemic literacy and viral zoonotic spillover risk at the frontline of disease emergence in Southeast Asia to improve pandemic preparedness**

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# Table of Contents

## Project Partners

| No. | Short name | Full name | Country | Main role |
|---|---|---|---|---|
| 1 | NMBU | Norwegian University of Life Sciences | Norway | Coordinator – WP7 & WP8 lead |
| 2 | NVI | Norwegian Veterinary Institute | Norway | WP4 partner |
| 3 | UKHD | Universitätsklinikum Heidelberg University | Germany | WP5 lead |
| 4 | IZW | Leibniz Institute for Zoo and Wildlife Research | Germany | WP3 & WP6 partner |
| 5 | QMUL | Queen Mary University of London | UK | WP1 partner |
| 6 | CHULA | Chulalongkorn University | Thailand | WP1 lead |
| 7 | UMU | Umeå University | Sweden | WP4 lead |
| 8 | KKU | Khon Kaen University | Thailand | WP3 lead |
| 9 | MU | Mahidol University | Thailand | WP2 lead |
| 10 | SUPA71 | SUPA71 Co., Ltd. | Thailand | WP6 lead |

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## Executive Summary

Health emergencies usually emerge from inconspicuous local contexts where emerging infectious pathogens may cross spillover boundaries from the indogenous wild animal reservoir to intermediate or focal host (potentially human). Understanding these host-pathogen-environmental dynamics (One Health) within complex social-ecological systems (systems thinking) are crucial for the global health security.

The EU-funded PANDASIA project aims to address these issues and develop models to predict socio-ecological drivers of viral spillover and disease emergence. Using cutting edge technologies and real-world data, it will pioneer a community owned Pandemic Preparedness and Prevention Literacy (3PLs) intervention.

The goal is to improve community engagement and to reduce the risk of future health threats by reducing the burden of zoonotic spillover on human health. Understanding the complexity of spillover mechanisms at local levels in biodiverse hot-spots, such as Southeast Asia, is important to improve European and global pandemic preparedness.

Our transdisciplinary Scientific Advisory Board SAB have extensive knowledge in anthropology, global health, infectious disease ecology, veterinary medicine, EcoHealth, One Health, molecular epidemiology, genomics, evolutionary medicine, public health, implementation, and transdisciplinary science.

We aim to utilise the exceptional expertise of our SAB members to thoroughly gauge our work in unlocking the complexity of zoonotic spillover, and to investigate how best PANDASIA can enable local communities to effectictly mitigate zonooses at its inception.

## Background

PANDASIA is a transdisciplinary research project aiming to understand the complexity of zoonotic spillover, thereby enhancing the global pandemic preparedness overall. This will be done through a comprehensive collection of social, biological and molecular data and develop predictive modelling of zoonotic spillover rates and disease emergence in high-risk settings in Thailand. This interdisciplinary approach will enable intensive understanding of potential pandemic drivers along nature-rural-urban gradients. PANDASIA consists of seven work packages (WPs), as shown in Figure 1.

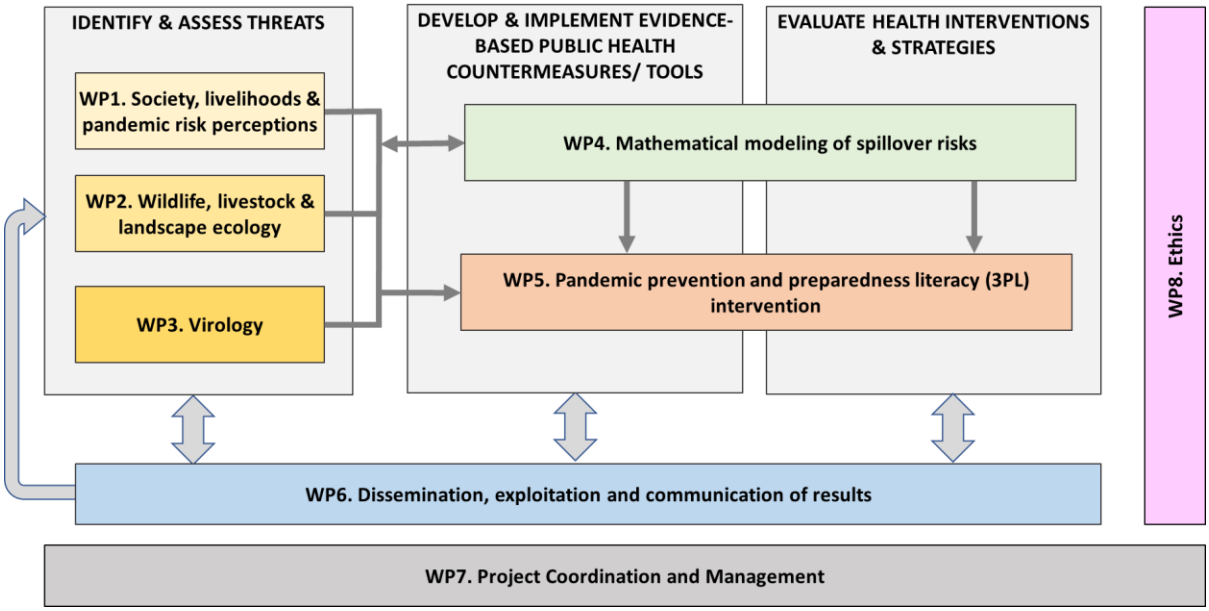


*Figure 1. PANDASIA Work Packages*

**PANDASIA project has the following Specific Objectives (SO):**

**SO1.** Determine and monitor human and societal factors impacting zoonotic spillover risk by identifying populations, human behaviours, human-animal-environmental interactions, structural drivers and barriers, and relevant policies in study locations (WP1).

**SO2**. Determine the most important wild and domestic vertebrate animal hosts of importance for spillover in each study location, assessing their presence, abundance, diversity (WP2).

**SO3.** Assess and model the potential effect of changes in land use, land cover, climate, and human demographic factors since the year 2000 on spillover risk (WP2).

**SO4.** Identify previously unrecognised pathogens with spillover potential, specifically targeting viral groups in vertebrate animal hosts for which there is strong precedence for viral occurrence and emergence in the region (WP3).

**SO5.** Develop ecological, epidemiological and evolutionary conceptual models to enhance understanding of the significance of the general principles and pathways of spillover processes, and to guide the development and analyses of a structurally equivalent, yet more specific, data-driven model. (WP4).

**SO6.** Develop a point-of-care (POC) virus test kit prototype for use by healthcare providers and professionals to identify spillover at the earliest stages to prevent epidemic or pandemic spread (WP3).

**SO7.** Create and test a critical public health measure – a pandemic prevention and preparedness literacy (3PL) intervention to reduce zoonotic transmission and pandemic risk (WP5).

## Members of the SAB

The SAB of PANDASIA consists of **seven** eminent experts listed below:

1. **David Hayman,** Prof of Epizootic epidemiology, Massey University, New Zealand.
2. **Kevin Bardosh.** Prof of Medical Anthropology and community engagement, University of Washington, USA.
3. **Pipat Soisook** Asst. Prof. of Biodiversity, Prince of Songkla University, Thailand.
4. **Raina Plowright,** Prof of Disease Ecology, One Health and implementation science, Cornell University, USA
5. **Sheri Bastien,** Senior Social Science scientist as WHO and former Prof at NMBU, Norway.
6. **Thanat Chookajorn,** Prof of Genomics, Molecular and Cell Biology, Umeå University, Sweden.

## Functions of the SAB

1. Provide technical advice on topics, challenges and possibilities raised during the implementation phase of the project.
2. Discuss and advise on strategic directions to achieve PANDASIA's strategic objectives, outcomes and impacts in the most efficient way.
3. Provide the consortium members of cutting-edge knowledge needed to meet the ambition for beyond state of the art.
4. Review the expected work and provide fair, and balanced scrutiny of its quality before submission.
5. Provide advice and expertise on cross-cutting topics like transdisciplinary science, implementation science, and interaction with local communities.

## Added value of the SAB

PANDASIA consists of an international consortium of scientists and participants with different cultural, social and ethnic backgrounds. An external SAB provides a *bird's-eye view* of the overall project and expected added value as outlined in the list below:

1. Tackling inter-cultural differences and ensuring harmony between consortium members.
2. Serve as *an internal* peer review committee to the consortium.
3. With technical expertise of Prof. **Plowright,** PANDASIA will be able to exercise transdisciplinary science in unlocking the local complexity of zoonotic spillover.
4. Understanding the local vulnerabilities and their socio-economic dimension will be oversighted by Prof. **Bastien,** especially when it comes to gender equality.
5. Illuminating how genomic differences between viruses can impact virulence to their indigenous reservoirs and potential human hosts would be core of our interaction with Prof. **Chookajorn.**
6. Compiling all above factors and others to develop a predictive models of zoonotic spillover will be oversighted by Prof **Hayman,** whereas his expertise in epizoonotic epidimiology is invaluable assets.
7. Dr. **Soisook** will provide specific expertise on the diversity of bats and small mammals in Thailand, their geographic distribution and potential as spillover hosts.
8. PANDASIA will prioneer a locally owned literacy programme named Pandemic Preparedness and Prevention Literacy. It is expected to enhance community engagement and enable local Thai communities to prevent the next pandemic. We will engage and discuss this innovative approach with Prof. **Bardosh** to maximise the impact of PANDASIA.

## Communication with the SAB

The kick-off meeting of PANDASIA was held in February 2023 in Khon Kaen, Thailand. All SAB members were invited and some of them were able to participate online to articulate the inception of PANDASIA. NMBU as the project coordinator works as a gatekeeper between the consortium and SAB members to avoid any overwhelming communication. The communication will take place as follows:

1- Periodic meetings: Once every six months, with specific agenda and expected outcomes.
2- Flexible communication: Upon urgency and whenever needed, the PI and the coordinator can contact SAB members directly.
3- Other forms of interaction: All SAB members are invited to join any activity of PANDASIA. This includes; biweekly meetings, kick-off and annual meetings. Nonethless the participation is voluntary and subjected to the availability and feasibility of the SAB members.

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Veterinærinstituttet
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