

Strategies to Prevent (STOP) Spillover

Impact Brief

Cambodia

Strengthening capacity of OH-DReaM Working Groups – Third-round of bat guano sampling

Activity 1.2.6.1: Research on bat guano farms and prevalence of pathogens carried by these species.

INTRODUCTION

This study of bat urine and guano under Activity 1.2.6.1 is a multi-seasonal effort timed to coincide with important life history stages of bats. The aim of this work is to analyze and monitor viral shedding and assess potential virus transmission risks to human populations (bat-guano farming and non-bat-guano farming households).

Following successful summer (April-May 2023) and spring (August 2023) sample collections, STOP Spillover Cambodia's team recently completed a winter sampling round in December 2023. This phase coincided with the juvenile development stage of bat colonies and provided valuable re-training and additional field practices in safe and effective sampling techniques for Cambodian government partners and community members who are the OH-DReaM WG members. The bat guano and urine samples were collected from bat guano farms in Kang Meas district of Kampong Cham province.



OH-DReaM WG members in PPE ready for bat guano sample collection

Outcomes and Results



OH-DWG member collecting bat guano samples on a plastic sheet before sunrise

Bat guano sampling's outcomes

Six OH-DReaM WG members participated during the December sampling round. The six team members showcased their improved skills and adherence to strict safety protocols during the fieldwork. This work exemplifies the One Health approach, fostering collaboration and knowledge exchange among researchers/scientists, government agencies, and local communities. This collaborative effort strengthens local capacity for monitoring potential disease threats at the bat-human interface.



Video recording of bat activities at a roost from 17:40 pm to 06:00 am

Bat guano sampling's results

The dedicated team meticulously collected and labeled 250 samples (87 urine samples and 163 guano samples) from 14 bat guano farms. These samples were safely transported to the GDAH/NAHPRI laboratory in Phnom Penh for coronavirus testing. Additionally, remotely operated camera systems were installed at four farms, providing valuable data on bat populations and their behavior. This information will contribute to a more comprehensive understanding of potential viral transmission risks and inform future prevention strategies.



OH-DReaM WG members removing PPE after finishing bat guano sample collection.



An OH-DReaM WG member measuring sample preservative into a tube for bat guano and urine sample collection.



OH-DReaM WG member labeling sample tubes and writing down sample codes into a log book



Labeled samples in a cool box destined for the NAHPRI's laboratory in Phnom Penh

STOP Spillover Cambodia support to Cambodia's GHSA and JEE scores

Year 4 Activities	GHSA priorities	JEE score (2016)
Activity 1.2.6.1 Bat guano farm study (continued from Y3) Activity 2.2.2.2 Coordination and capacity building of sentinel surveillance team	Category 1: Preventing the emergence or release of pathogens with potential for international concern: Zoonotic diseases (1.2) and biosafety (1.4)	Indicator P.5.1 Surveillance of zoonotic diseases (JEE Score 2 for P4.1 surveillance systems in place for priority zoonotic diseases; and JEE Score 2 for P6.2 biosafety training and practices)
Activities 2.2.2.1 and 2.2.2.3: Community level risk reduction interventions	3.5 Risk Communications	Risk Communication and Community Engagement (RCCE), Indicator R5.2: Risk Communication and R5.3 Community Engagement (JEE score 3 for R5.4 Communication engagement with affected communities)