Strategies to Prevent (STOP) Spillover

Impact Brief

Cambodia

Tracking the Progress of the Implementation of Improved Biosafety and Hygiene Practices in Bat Guano Farming Communities in Kang Meas District, Kampong Cham Province

Activity 2.2.2.1: Community-level Risk Reduction Interventions

INTRODUCTION

STOP Spillover Cambodia implemented trials of improved practices (TIPs) in 2023 to support bat guano farmers and their neighbors in finding the best solutions and in shaping improved practices that are feasible to reduce bat-human interactions and protect themselves from the risk of zoonotic viral spillover. Following the completion of the TIPs, the team returned to the same communities in Kang Meas district in mid-January 2024 to conduct a community dialogue (CD) and a demonstration-based education (DBE) on safety practices for reducing risk with a broader group of community participants, including bat guano producers (BGPs), neighboring non-bat guano producers (NBGPs), a vendor, Buddhist monks, Buddhist pagoda committee members, local authorities, health center staff, and officials from district, provincial and national institutions.

Fig. 1: A CCWC's member having a conversation with a bat guano producer on improved biosafety and hygiene practices.

Following the CD and DBE activity, the country team in collaboration with a district-level One Health Design, Research, and Mentorship (OH-DreaM) Working Group member and a member of the Commune Committee for Women and Children (CCWC) completed monitoring and technical support for three days in the same community in February 2024 (Fig. 1). The purpose of the activity was to (i) e-assess the understanding of zoonotic diseases among those who had participated in the CD and DBE, (ii) further extend technical support to them to reinforce the adoption of biosafety and hygiene practices, and (iii) identify any challenges and barriers to adopting and sustaining the improved practices.

OUTCOMES AND RESULTS

Outcomes

The CD and DBE participants, specifically BGPs and NBGPs, self-reported scores from 5/10 to 9/10 for their zoonotic knowledge/understanding (Fig. 2). About half of them (16/35) scored their knowledge of zoonotic diseases 7/10 or higher.

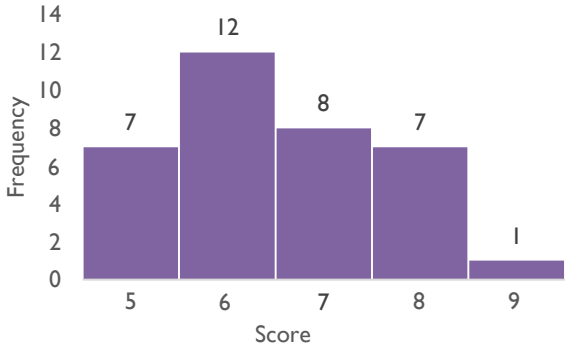

Figure 2. Self-evaluation scores for zoonotic disease knowledge

When working with bats and bat wastes (guano or dead bats), the CD and DBE participants are careful. Of the BGPs that have been working with STOP Spillover, 18% reported using full PPE when in contact with bats and bat wastes; and 82% reported using some PPE (for example, gloves). For hygiene practices, 100% of BGPs reported washing their hands after working with bat guano, dead bats/wastes; and 100% of NBGPs also reported washing their hands if they had anything to do with bats/bat wastes (Fig.3).

An overwhelming majority (97%) of BGPs and NBGPs now dry, cover, and store their foods safely to prevent contact with bats and domestic animals; and 94% of them now clean

their household surfaces (including the kitchens, meal tables, chairs, beds) daily with soap solution, (Fig. 3). At least 54% of them now keep their domestic animals away from bat roosts and from direct contact with bat guano. During the monitoring period, only five of the 35 people reported seeing dead bats. Of the five people, three reported either burning or burying the dead bats properly using gloves. The other two people did not do anything with the dead bats. The helping hands group that was established with the support and coordination of the project was very active. Members of the group include two Buddhist monks, three Buddhist pagoda committee members (one from Varint pagoda, one from Kchao pagoda, and one from Kang Ta Ning pagoda), three village chiefs and a vendor. All Buddhist monks and the committee members from the three pagodas delivered the awareness messages on zoonotic diseases and improved practices to reduce spillover risk to people more than 10 times during 15-day period between the CD/DBE event and the monitoring time. The local vendor now stocks nearly all types of PPE and hygiene materials available for sale and needed by/recommended for the BGP communities including hats, masks, face shields, gloves, soaps/detergent powder, and alcohol-based disinfectant. This change addresses a key barrier to good PPE and hygiene practices identified by guano producers - many of whom are elderly - having to travel a long distance to the market to access these items, which are now readily available from a local vendor.

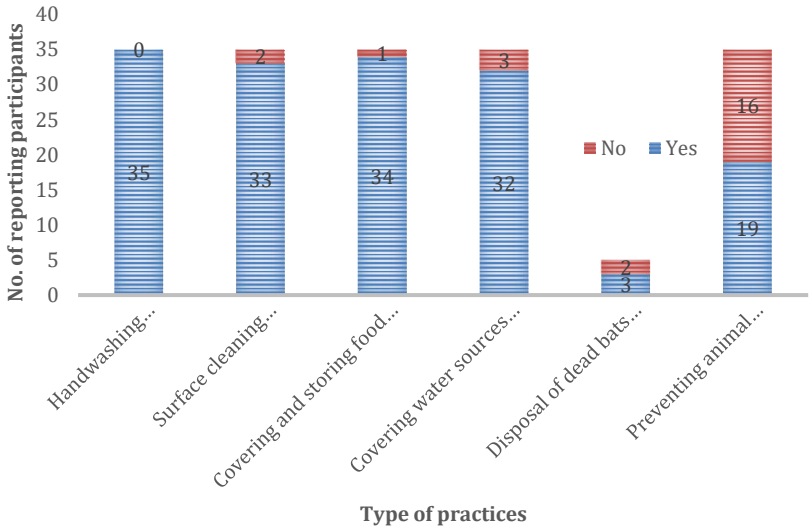

Figure 3. Biosafety and hygiene practices of BGPs and NBPGs

Results

Through the three-day monitoring and technical support in the bat guano producing communities in Kang Meas district of Kampong Cham province, the team reached out to 44 participants (17 BGPs, 18 NBGPs, 3 local authorities, 2 Buddhist monks and 3 Buddhist pagoda committee members, and 1 local vendor), 64% of whom were women. The helping hand group was very active, the local vendor stocks nearly all types of the PPE and hygiene items required for the improved biosafety and hygiene practices of the BGP communities, and the BGPs and NBGPs continued implementing these practices.

Figure 4. A new handwashing facility installed by a BGP in Varint 3 village.

However, challenges remain for BGPs regarding the full implementation of the best practices. For instance, it is too hot for them to wear raincoats / protective clothes in Cambodia's tropical climate to collect the guano. They cannot store their guano in plastic bags outside of their houses because they fear that they can be stolen. Furthermore, the guano buyers do not want to purchase the guano in the bags; they prefer removing it from storage jars and packing it themselves. STOP Spillover will work closely with the bat guano buyers to further improve guano handling practices.

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)

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