IMPROVING HABITATS FOR *Myotis csorbai*, AN ENDEMIC BAT OF NEPAL

(Pre and Post survey analysis report)

Project ID: 41915_1

A. School Conservation Program, Pre and Post survey analysis

As part of a focused bat conservation awareness program, we conducted a pre- and post-survey among 20 students from Arniko Secondary School. The program included a few hours of interactive presentation and detailed information sharing covering the ecological importance of bats, common misconceptions, threats to their survival, and conservation actions. The results from the analysis showed following:

1. Have you heard about bats?

Before the awareness session, only 50% of the students reported having heard about bats. After the session, this increased dramatically to 100%.

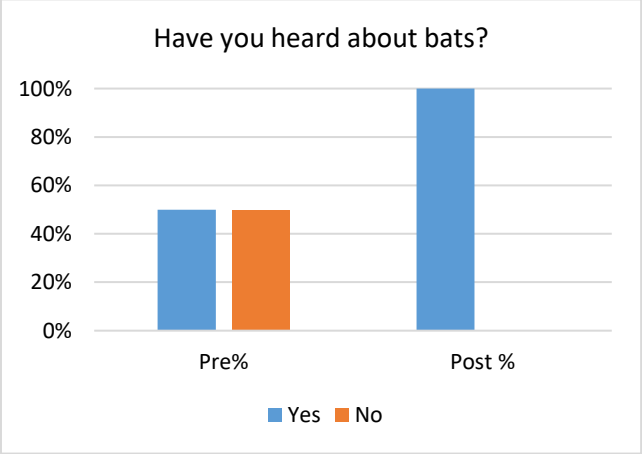


Figure 1: Pre and Post response on 'Have you heard about bats?'

This sharp rise demonstrates the effectiveness of even a brief awareness session in reaching students who previously had little or no exposure to information about bats. The program successfully bridged the initial knowledge gap.

The McNemar test showed a statistically significant increase in participants' awareness of bats following the program ($p = 0.002$). This suggests that the program effectively improved knowledge about bats among participants.

2. In your opinion, what is a bat?

Initially, only 35% correctly identified bats as mammals, while others mistakenly chose birds, insects, or reptiles. After the session, 90% correctly answered "mammal". Many students had

previously categorized bats incorrectly due to their ability to fly or their appearance. This conceptual shift toward understanding bats as mammals shows that the session was successful in delivering scientific clarity.

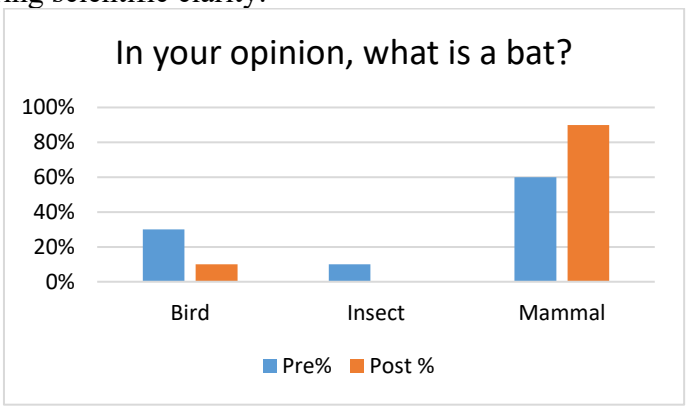


Figure 2: Pre and Post program response of 'What is bat?'

The Marginal Homogeneity Test revealed a statistically significant change in participants' understanding of bats from pre- to post-survey ($p = 0.033$). This indicates that the awareness program effectively improved scientific knowledge about bats among the participants.

3. What do bats mainly eat?

Pre-survey responses were varied, with only 45% identifying insects as bats' primary food. Post-survey, 85% answered correctly.

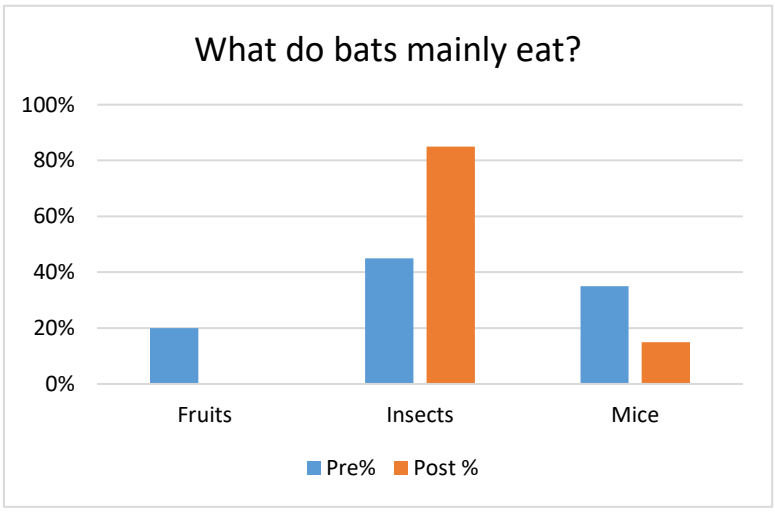


Figure 3: Pre and Post Program response of 'What do bats mainly eat?'

Although some participants changed their responses, the Marginal Homogeneity Test showed no statistically significant shift in the understanding of bats' diet after the awareness program ($p = 1.000$). This suggests that the intervention did not meaningfully impact participants' knowledge on this specific topic.

4. During what time of day are bats most active?

The program effectively improved participants' understanding that bats are primarily nocturnal, being most active during the evening and night. Before the program, there was confusion with many believing bats are active during the day or all day, but after the program, nearly everyone recognized the correct active period of bats.

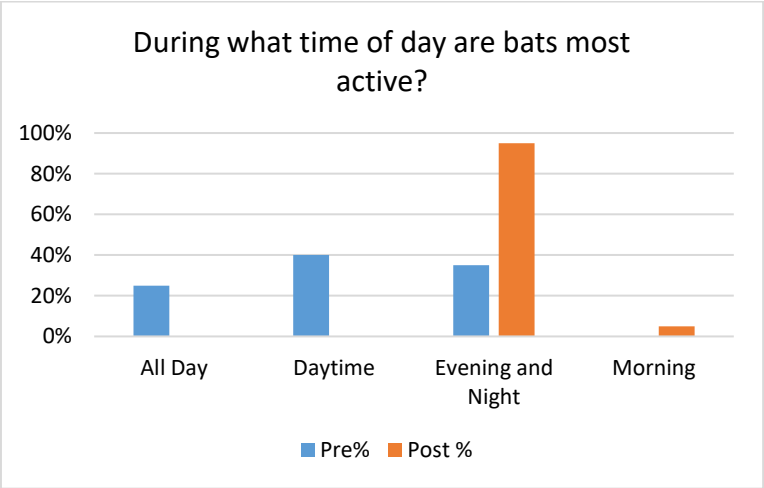


Figure 4: Pre and post program response of 'During which time of the day bats are more active?'

The test showed a p-value of 0.414, which is greater than 0.05, indicating no significant difference in responses. This means the training did not significantly change participants' knowledge or perceptions about bat activity times.

5. How do bats help farmers?

Pre-survey responses were varied, with only 15% replying bat helps farmers by eating harmful insects. Post-survey, 90% answered correctly.

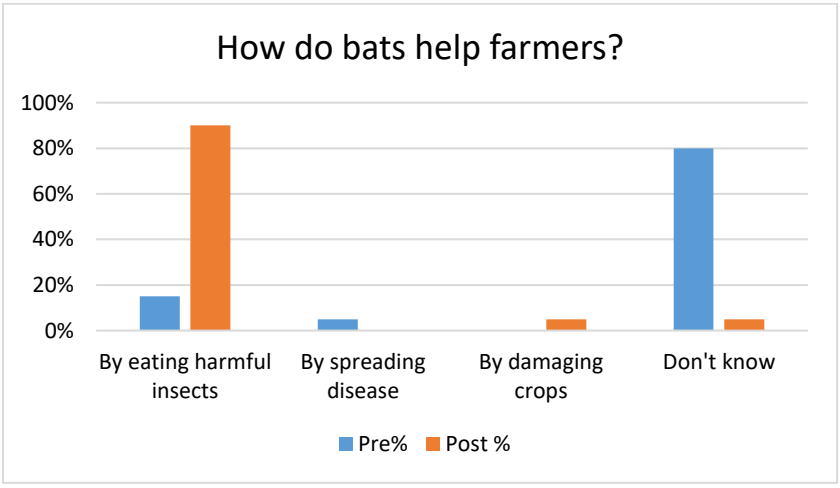


Figure 5: Pre and Post program response of 'How do bats help farmers?'

The marginal homogeneity test produced a p-value of 0.000, indicating a statistically significant difference in responses. This suggests that the training effectively improved participants' understanding of the ecological role of bats in supporting agriculture.

6. Where do bats live?

Before the awareness session, only 40% of the students identified caves as bats habitat. After the session, this increased dramatically to 90%.

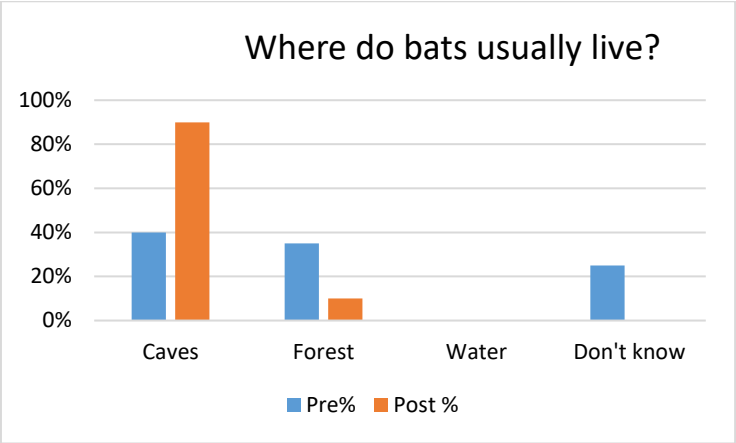


Figure 6: Pre post program response of 'Where do bats usually live?'

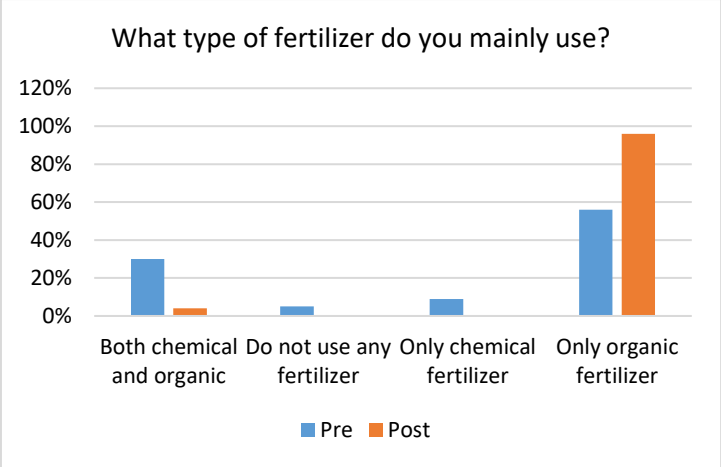
The marginal homogeneity test yielded a p-value of 1.000, indicating no statistically significant difference in responses. This suggests that although some students changed their response from pre survey however, most student were aware about the bats habitat before the awareness program.

B. Organic Fertilizer Training Pre and Post survey analysis

As part of a focused bat conservation awareness program, we conducted pre and post survey of 23 participants from Syangja. The program included one day training on production and making of organic fertilizers. The result from the analysis showed:

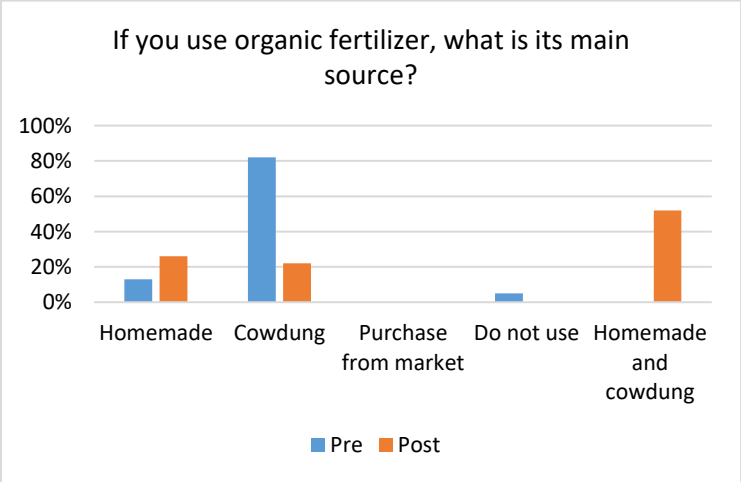
1. Type of fertilizer used

Before the training, participants showed mixed practices in fertilizer use: 30% individuals used both chemical and organic fertilizers, 9% used only chemical fertilizers, and 5% did not use any fertilizer at all. 56% participants were previously using only organic fertilizer. After the training, there was a significant shift, with 96% of participants reporting exclusive use of organic fertilizer and only 4% continuing to use both. This highlights the training's strong influence in promoting organic fertilizer adoption.



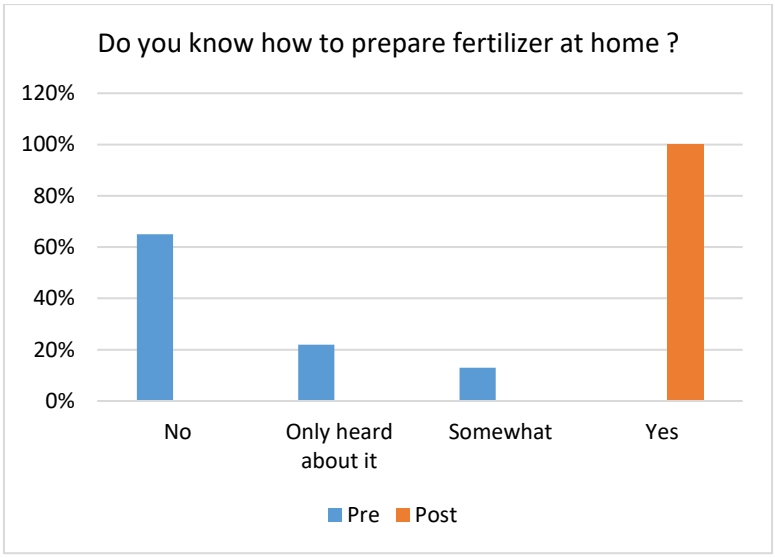
2. Main Source of Organic Fertilizer

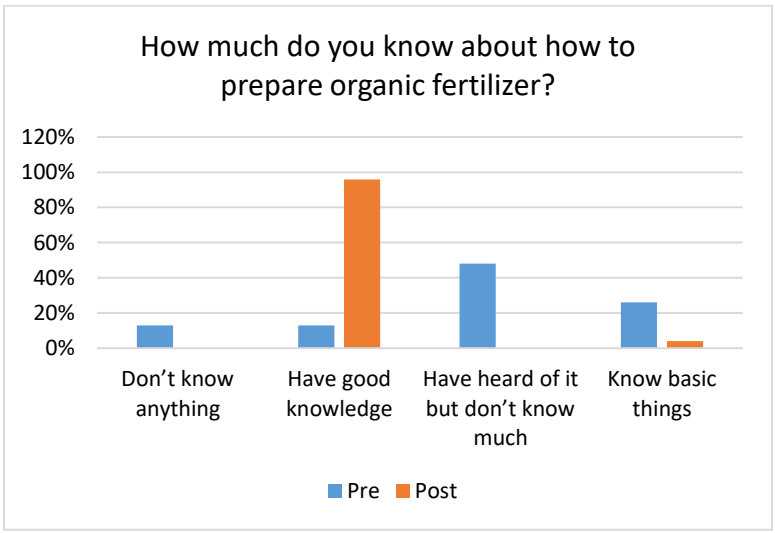
Initially, most participants relied on cow dung (89%) as their main source of organic fertilizer, while a few (13%) used homemade compost. Following the training, the use of homemade organic fertilizer increased (26%), and a notable number (52%) began using a combination of homemade and cow dung. This indicates improved knowledge and practice of preparing organic fertilizer using household resources.



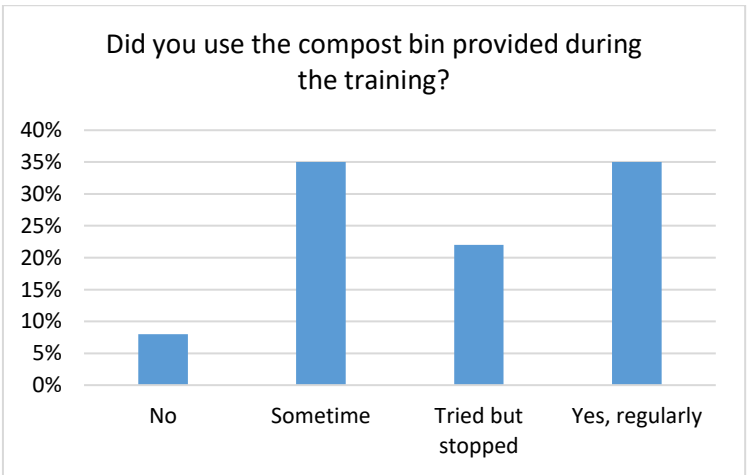
3. Knowledge on making fertilizer at home

Before the training, the majority of participants (over 60%) did not know how to prepare fertilizer at home. About 20% had only heard about it, and around 15% had some idea but were not confident. No participants reported knowing how to prepare it fully. After the training, however, 100% of participants responded "Yes", indicating they now know how to prepare fertilizer at home. And 96% responded they have good knowledge about preparation of fertilizer.





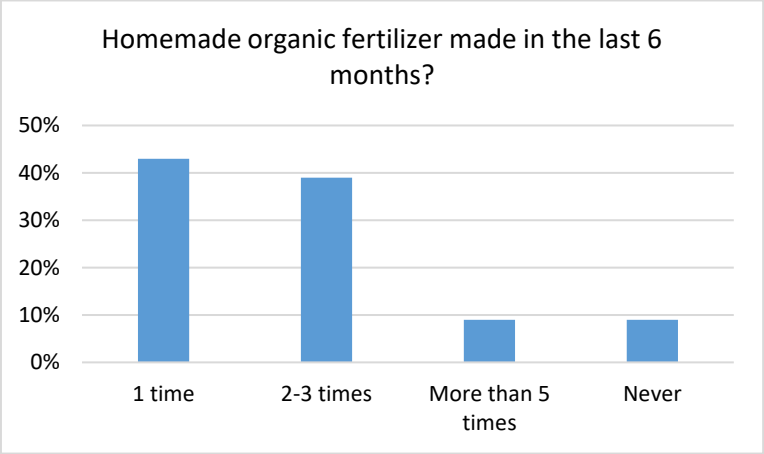
4. Use of Fertilizer bin



The chart shows varied engagement with the compost bin provided during the training. About 35% of participants reported using it regularly, while another 35% used it occasionally. Around 22% tried using it but later stopped, and only a small portion (about 8%) did not use it at all. According to the respondents, the primary reason for limited use was seasonal, currently, they are cultivating maize and rice, which require little to no fertilizer. Most participants have used the bin once or twice and expressed plans to use it more actively during the upcoming vegetable farming season.

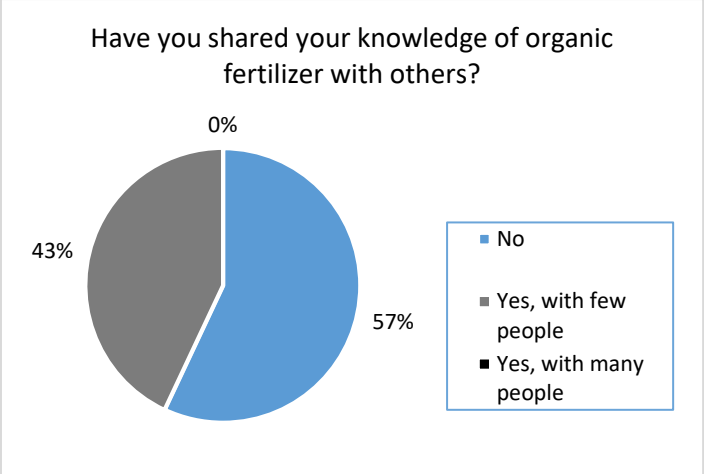
5. Frequency of Using Homemade Organic Fertilizer (Last 6 Months)

Regarding the frequency of homemade organic fertilizer use in the last six months, 43% participants had used it once, 39% had used it 2–3 times, and 9% had used it more than 5 times. Those who used it more than five times were primarily fruit growers. They mentioned that the taste of oranges and other fruits had noticeably improved, with buyers commenting that the flavor resembled the authentic taste from many years ago, when chemical fertilizers were not in use. Only 9% participants reported never using it. These figures show that most participants actively experimented with or adopted homemade organic fertilizer following the training.



6. Sharing of Knowledge with Others

When asked if they had shared their learning about organic fertilizer with others, 57% participants said no, and 43% stated they had shared it with a few people. This indicates a ripple effect, as many of the participants disseminated the knowledge gained from the training to their communities.



Perceived Improvement in Soil or Plant Health

A majority of participants (65%) reported noticing improvements in soil or plant health after switching to organic fertilizer, while 35% remained unsure. This reflects a generally positive perception of the benefits of organic practices among participants, supporting continued use and promotion. The reason some participants were unsure may be due to their limited use of organic fertilizer so far, as many had only recently begun using it or used it just once or twice.