Breeding Grounds by the Shore: A Precision Public Health Analysis of Mosquito Vectors in the Fishing Villages and in Town Housing Areas of Nakhon Si Thammarat

Presented by Srithammaratsuksa School Thailand

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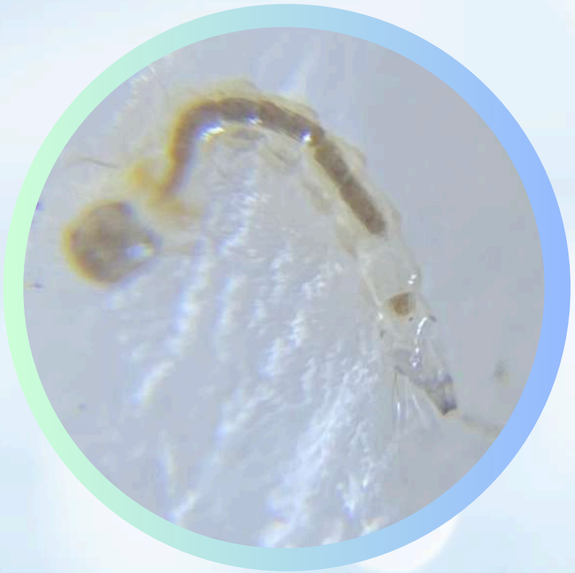
Introduction



Ae. aegypti spp.

Ae. albopictus ssp.

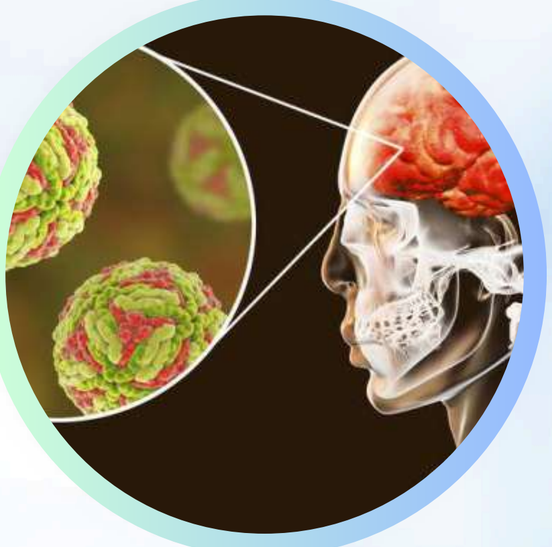
Culex spp.

Mansonia spp.

Introduction

Dengue virus

Chikungunya



Encephalitis

Lymphatic Filariasis

Objectives

1. Map the distribution of key vector species across artificial and natural habitats.

2. Identify high-productivity containers specific to the fishing industry.

3. Assess local disease transmission risks.

Material and Methods

Study sites

(a) Map of Thailand

(b) Map of Nakhon Si Thammarat

(c) Map of Bam Nai Thung

(d) Map of Walailak University

Data Collection

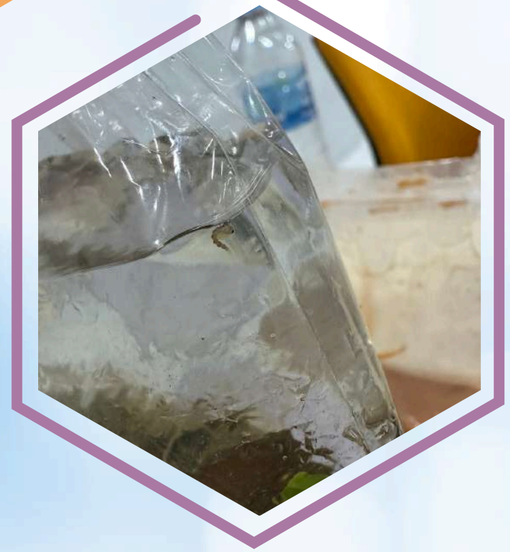
2. Measure Water Quality (pH and Temperature.)

4. Use fish net to scoop Mosquitoes.

6. Count the Larvae .

1. Locate the water containers.

3. Use Mosquito Habitat Mapper Protocol



5. Place them in the Plastic cup

Identification

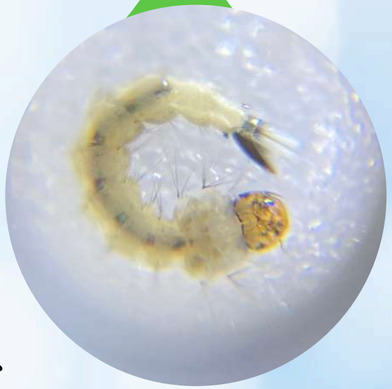
(1)Use plastic spoon to gently scoop the larvae from the plastic bag.

(2) Place larvae to a small dish with some of the water .

(3)Clean the glass slide and cover slip with ethanol to remove any dust.

(4)Use the microscope to examine.

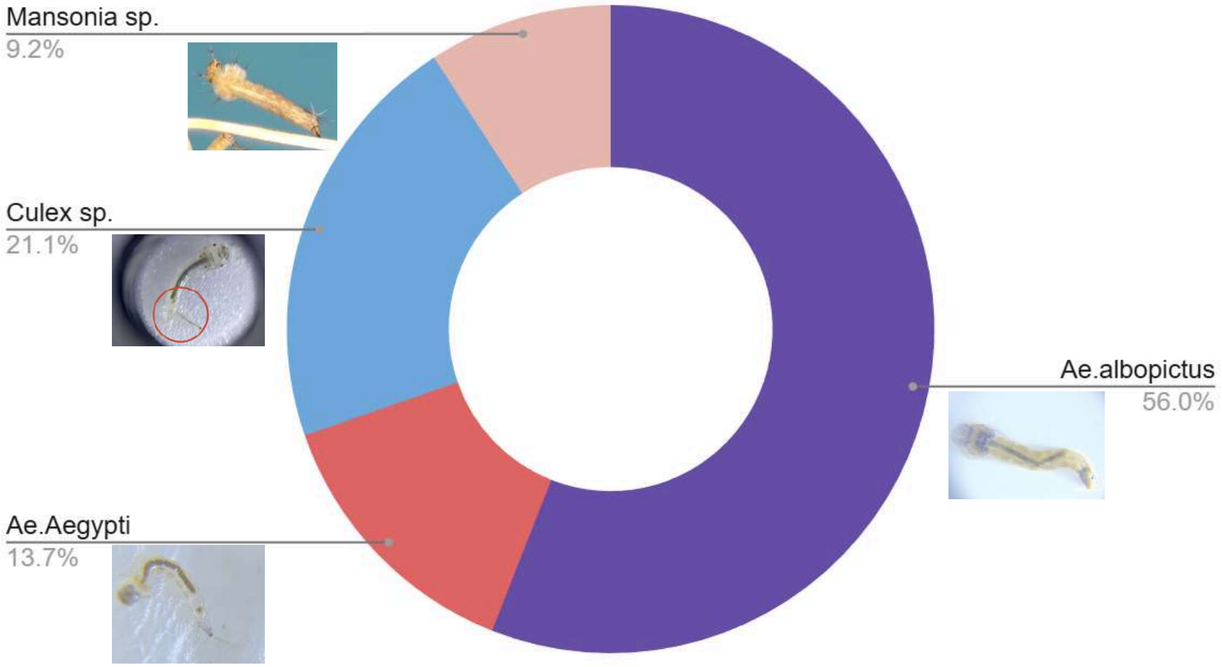
(5)Take photos through the microscope and indentify the type of mosquito.



Results

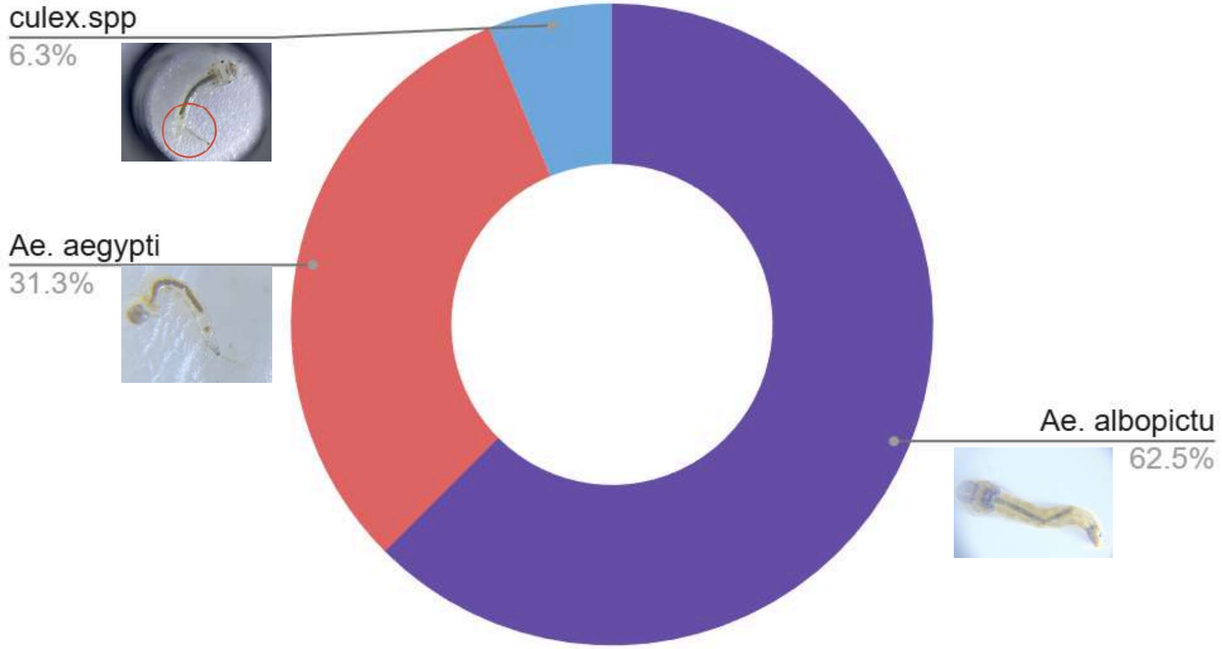
species diversity in Village and City

Type of Mosquitoes in Fisherman Village Area



The results of Fisher's Exact Test reveal statistically significant habitat preferences among the identified species: Aedes albopictus exhibited a strong, significant preference for artificial containers, whereas both Culex sp. and Mansonia sp. showed a significant preference for natural habitats.

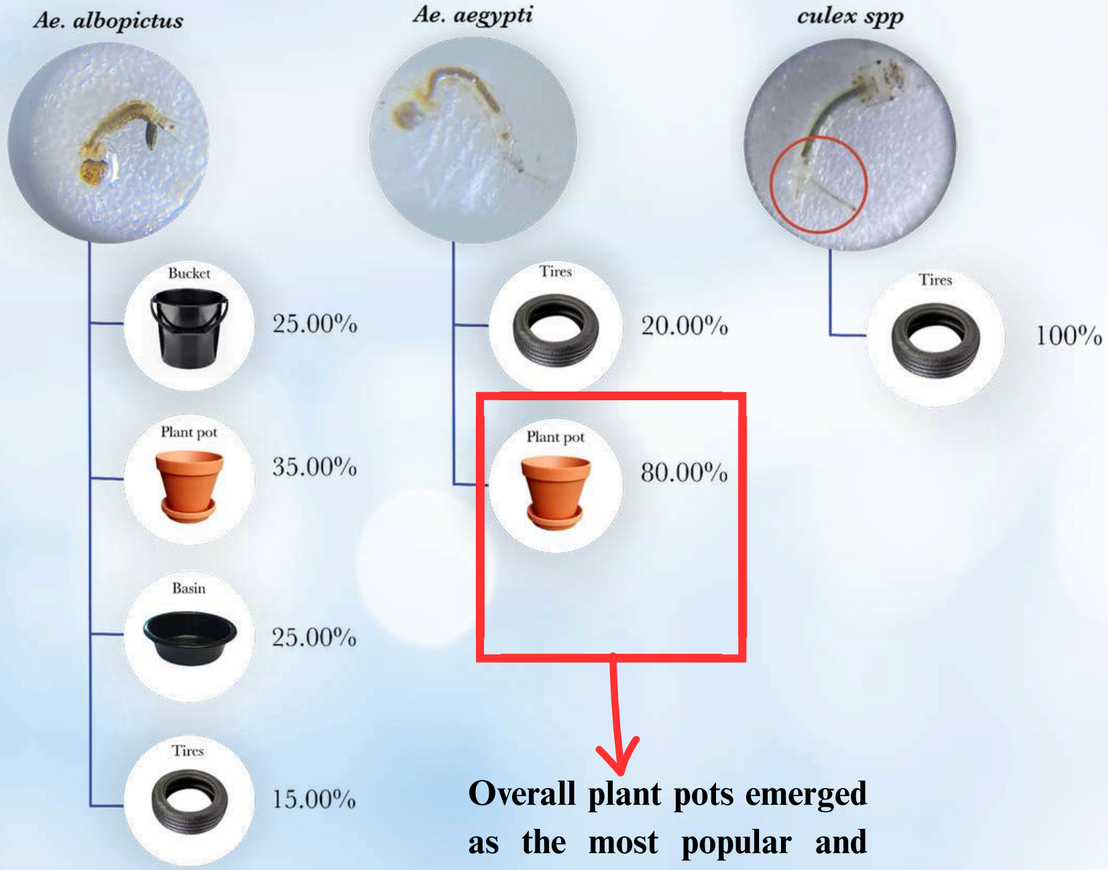
Type of Mosquitoes in City Housing Area



All the data collected are from Artificial containers (100%) so the preferred breeding sites in city housing area is Artificial for all the types detected.

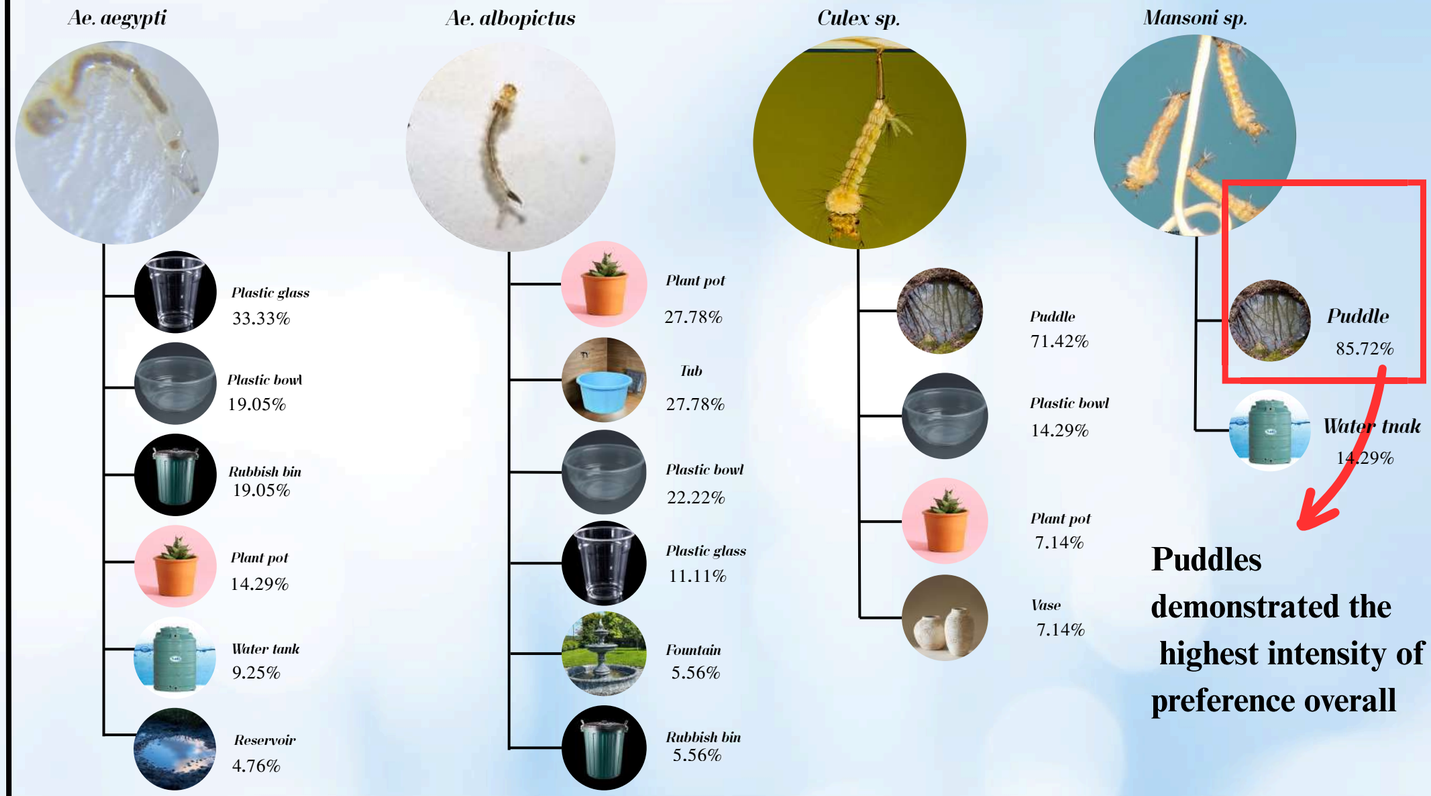
Species-Specific Breeding Site Selection in Village and City Housing areas

City Housing



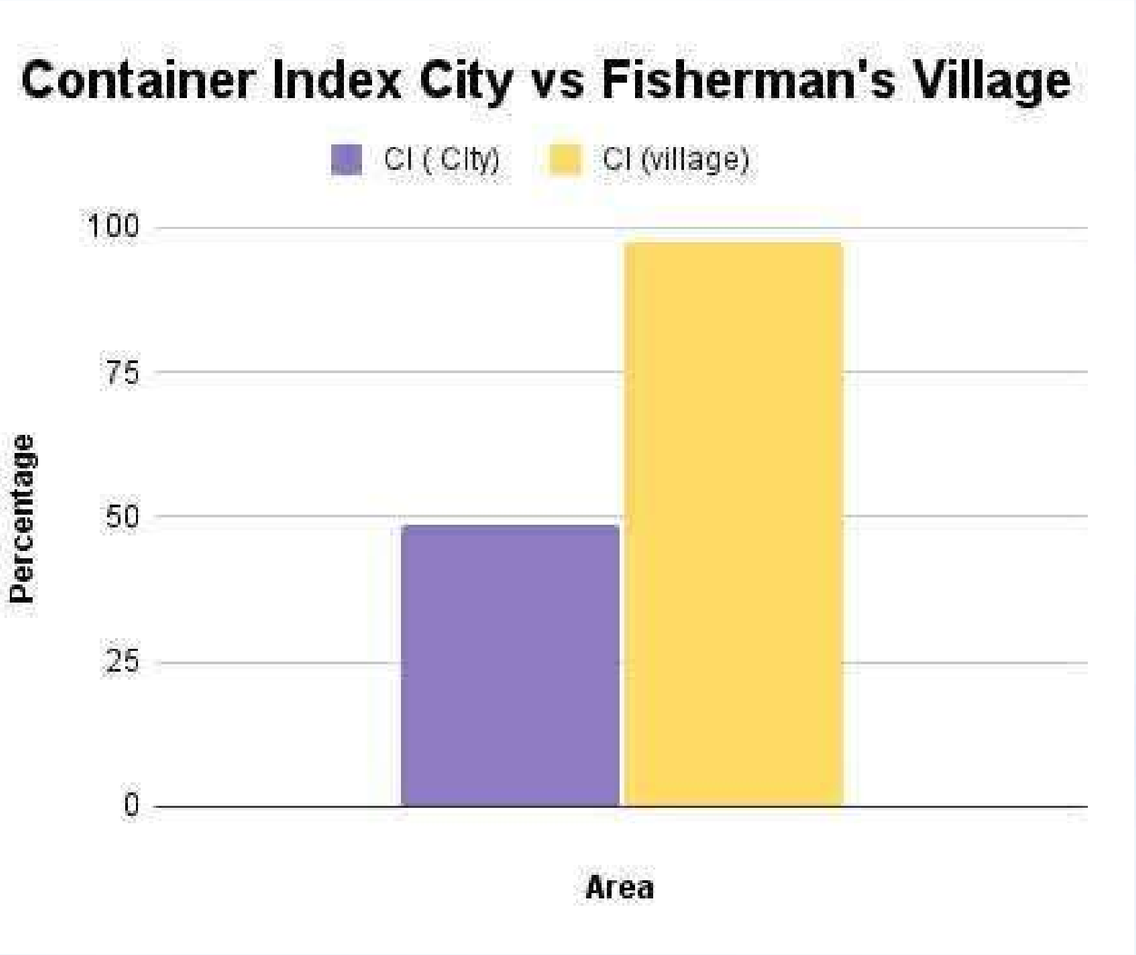
Overall plant pots emerged as the most popular and critical breeding site for dengue vectors,

Village

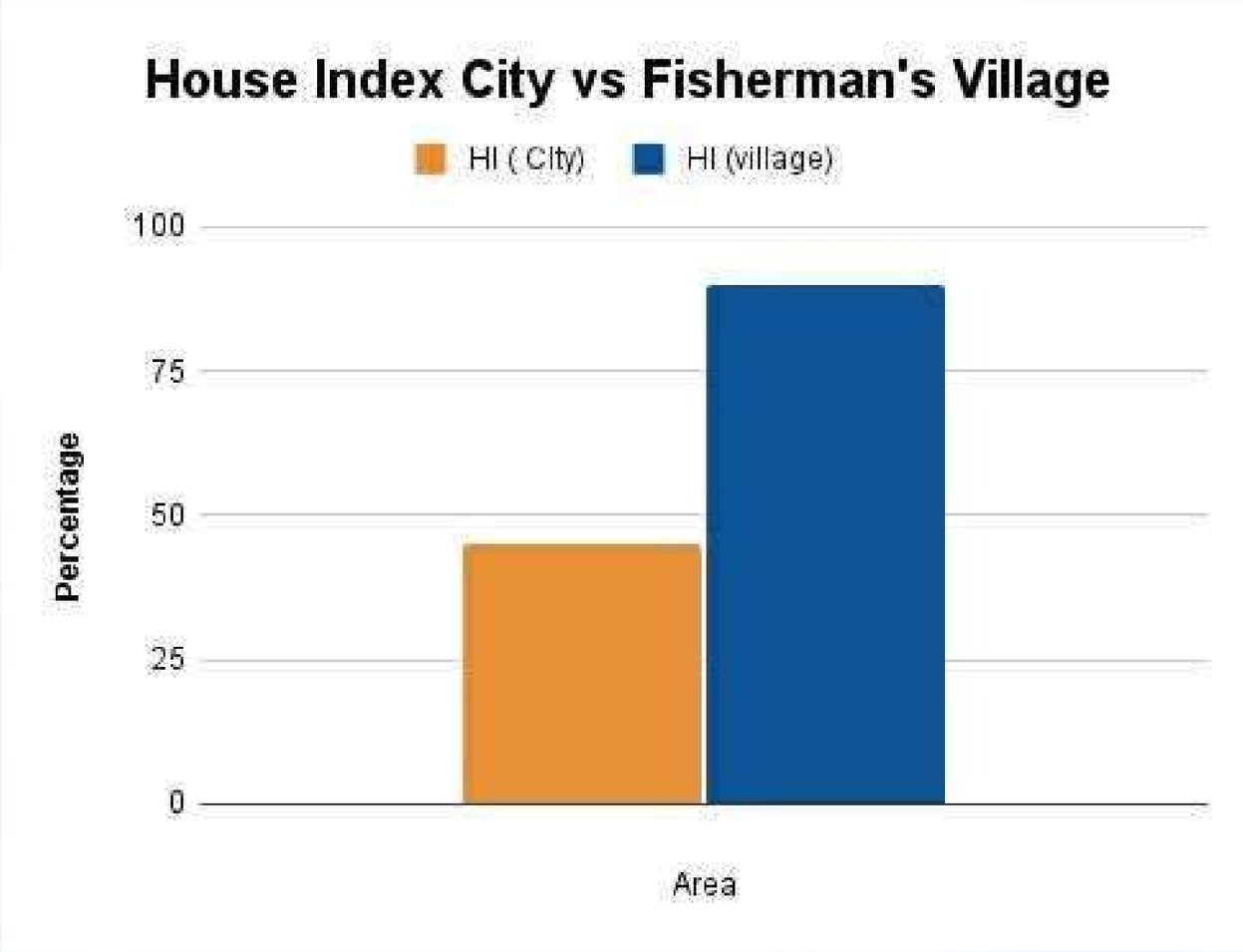


Puddles demonstrated the highest intensity of preference overall

Container Index



House Index



Recommendation

- Treat the City and the Village differently. Do not use the same control plan for both areas.

- Target the main breeding sites. Fill in ground puddles and clean up plastic trash in the Village, while checking plant pots in the City.

- Watch the dangerous species, not just the numbers. Pay close attention to Aedes aegypti because it spreads disease faster, even if there are fewer of them.

- Spray at the right time. Only use chemical sprays when mosquitoes are most active so they are actually effective.

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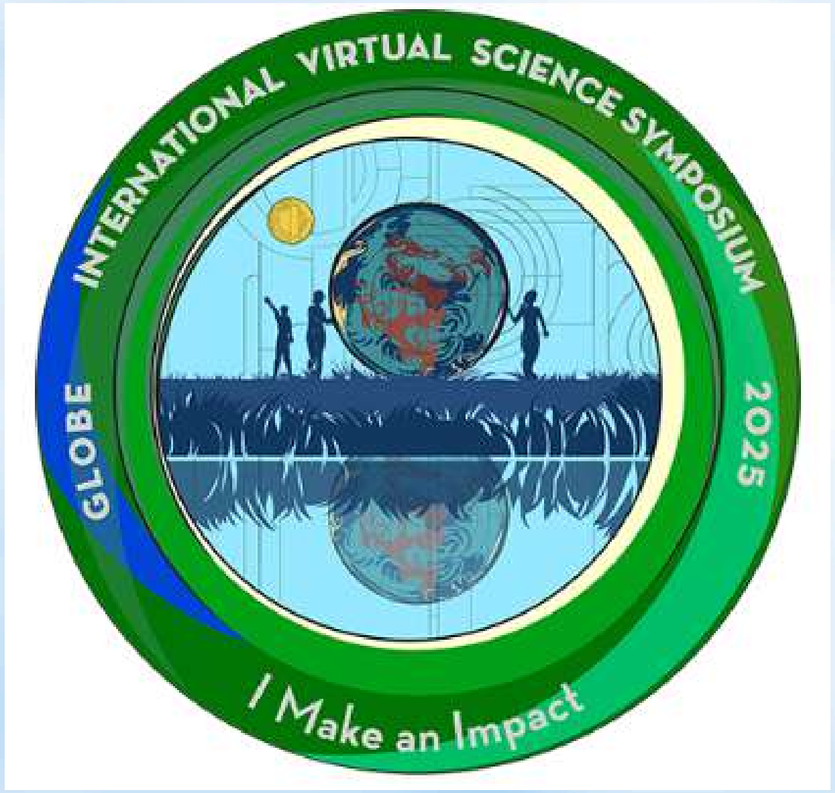
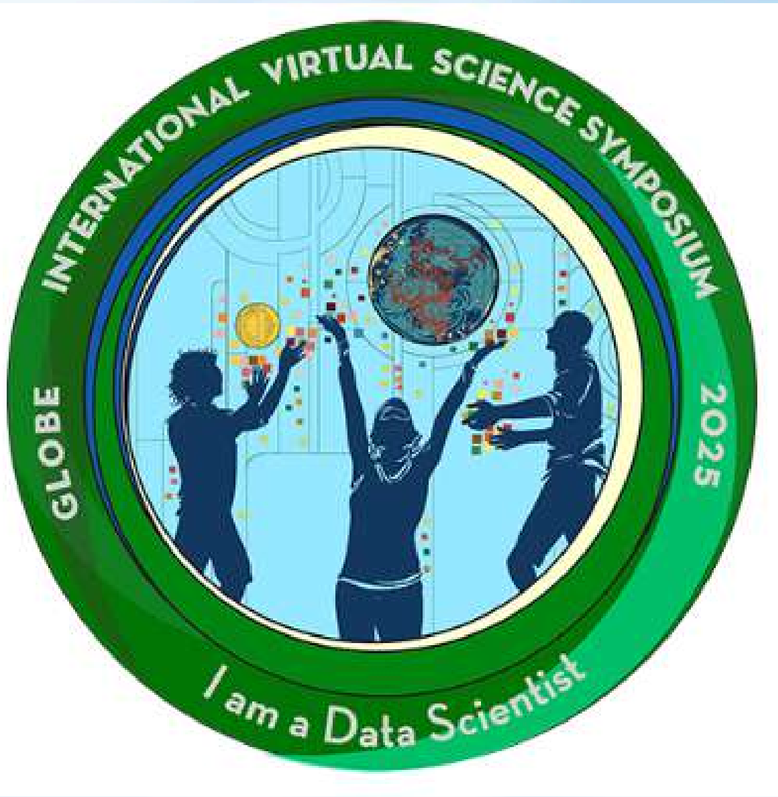
IVSS Badges



I make an impact

I am a STEM professional



I am a data scientist

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