

# **The Teacher's Experience for the GLOBE International Science Symposium Training**



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# PCSHS NST Science Project & GLOBE Project



## PCSHS NST's Curriculum : Science Project Course

Grade 10 : 2<sup>st</sup>Semester

Data analysis & report

Grade 11 : 1<sup>st</sup>Semester

Science project experiment

Grade 10 : 2<sup>st</sup>Semester

Project proposal & Project pre-study

Grade 10 : 1<sup>st</sup>Semester

Topic seminar and Project  
planning

Published/Conference

GLOBE Project

Supported by the  
Trainer

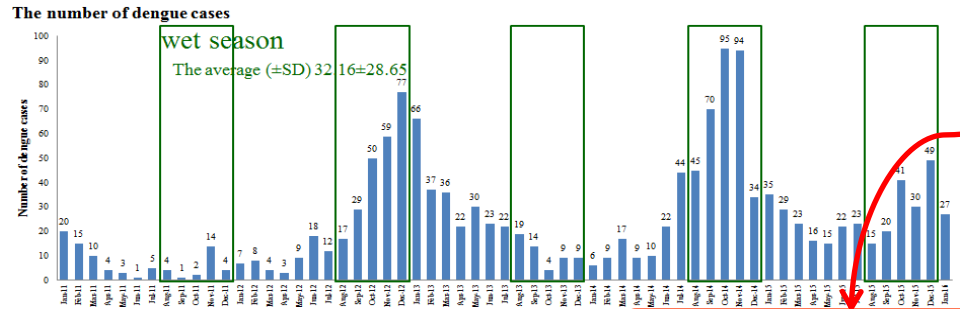
Workshop &  
Experiment &  
Data analysis

Project is started

# The GLOBE International Science Symposium

Consistent with the objectives and data supporting

	Rainfall(mm)	Relative Humidity (%)	Rainy days (days)	Temperature (°C)		
				Mean	Maximum	Minimum
Pearson Correlation	0.306	0.448	0.351	-0.364	-0.295	0.209
Sig(1-tailed)	0.108	0.031	0.076	0.690	0.117	0.202



Result & Report

project experiment

Clearly to collect the data.

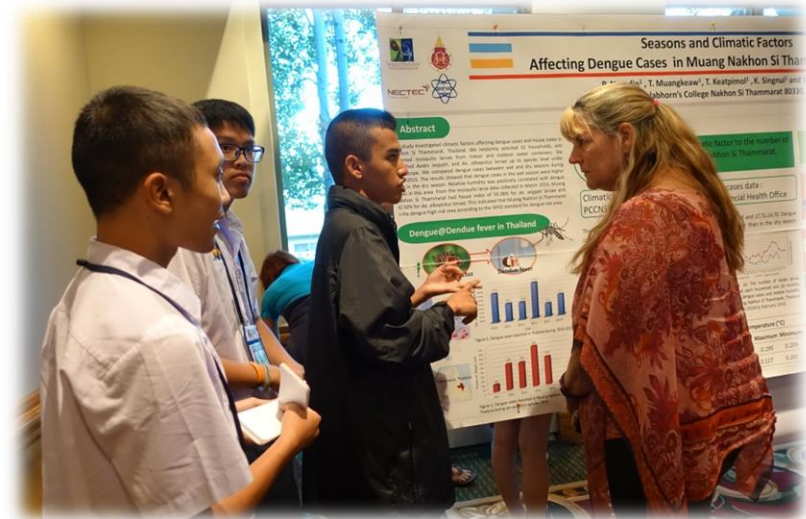
Project planning

Questions

Cause & Effect Diagram

Infographics

Presentation





# The GLOBE International Science Symposium



## Seasons and Climatic Factors Affecting Dengue Cases in Muang Nakhon Si Thammarat, Thailand

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### Abstract

This study investigated climatic factors affecting dengue cases and house index in Nakhon Si Thammarat, Thailand. We randomly selected 32 households, and collected mosquito larvae from indoor and outdoor water containers. We identified *Aedes aegypti*, and *Ae. albopictus* larvae up to species level under microscope. We compared dengue cases between wet and dry seasons during 2011-2015. The results showed that dengue cases in the wet season were higher than in the dry season. Relative humidity was positively correlated with dengue cases in this area. From the mosquito larva data collected in March 2016, Muang Nakhon Si Thammarat had house index of 59.38% for *Ae. aegypti* larvae and 62.50% for *Ae. albopictus* larvae. This indicated that Muang Nakhon Si Thammarat is the dengue high risk area according to the WHO standard for dengue risk area.

### Our Process



Study the affect of climatic factor to the number of dengue cases in Muang Nakhon Si Thammarat, Thailand.

Climatic data : PCCNST Weather Station

Dengue cases data : NST Provincial Health Office

Study the affect of the number of mosquito larvae to number of dengue cases



### Data collection

**Samples**

- 2 houses/sub-district
- 16 sub-districts
- Total 32 households

Collected all mosquito larvae from both indoor and outdoor containers

Placed mosquito larvae in plastic bags

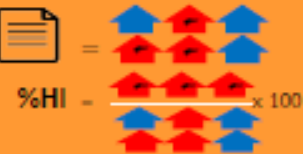
Preserved them in 70% alcohol

Identified mosquito larvae app. under microscope

### Data analysis

**House Index (HI)** The percentage of positive houses for *Aedes* larvae

$$HI = \frac{\text{No. of house positive for } Aedes \text{ larvae}}{\text{No. of houses inspected}} \times 100 \%$$



HI 59.38%

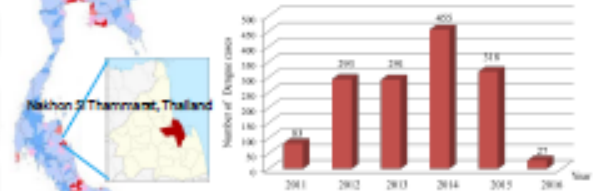
HI 62.50%

Figure 5. The number of *Aedes* larvae collected at each household

### Dengue@Dendue fever in Thailand



Figure 1. Dengue cases reported in Thailand during 2010-2015



The average ( $\pm$ SD) dengue cases in wet and dry seasons were 32.16 $\pm$ 28.65 and 17.72 $\pm$ 14.70. Dengue cases in Muang Nakhon Si Thammarat in the wet season were higher than in the dry season (Figure 3).



Figure 3. Monthly dengue cases in wet and dry seasons in Muang Nakhon Si Thammarat, Thailand for January 2011-January 2016.

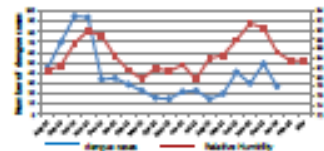


Figure 4. (a) The number of *Aedes* larvae collected at each household and (b) monthly reports of dengue cases and relative humidity (%) in Muang Nakhon Si Thammarat, Thailand from August 2014 to February 2015

	Rainfall	Relative	Rainy days	Temperature (°C)		
	(mm)	Humidity (%)	(days)	Mean	Maximum	Minimum
Pearson Correlation	0.306	0.448	0.351	-0.364	-0.295	0.209

### Conclusion

- Relative humidity strongly correlated with dengue cases ( $P < 0.05$ ).
- This indicates that mosquito eggs tend to be more viable in more humid area.

As WHO classified dengue risk area with HI greater than 5%. We got 59.68% HI. So we are thinking about launching some campaign to raise some awareness on mosquito larvae in

# Teacher/Trainer supporting

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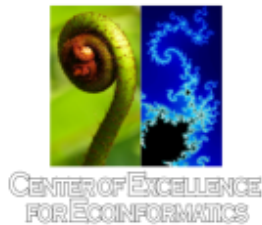
**Facilities for .....Planning**

**.....Contacting**

**.....Scientific method**

**.....Presentation technique**

**Partner & Coaching Technique**



# Acknowledgement

- Princess Chulabhorn Science High School Nakhon Si Thammarat.
- Center of Excellence for Ecoinformatics, the Institute of Research and Development, Walailak University and NECTEC

# Thank you