



GLOBE Taiwan Country Report

Presenter: Dr. Pay-Liam Lin, Taiwan Country Coordinator

Date: 15 January, 2020

Venue: Hyderabad, India





Current Status

Org. ID/ GLOBE ID	School Name	School Address	City, Territory, Country	Lat./ Long.	Teacher(s)	Reporting Status	First Report Date	Last Report Date	Total # of Obs.
24126901 GLIDDSCB	National Kinmen Senior High School	Guangqian Rd No. 94	Jincheng Township, TW	24.4355 118.3138	SHU-CHEN CHEN Email Teacher Yu-Chieh Hsueh Email Teacher KURO-PIN HUANG Email Teacher Yu-Hsien Lee Email Teacher Email All Teachers	Currently Reporting	04/29/2017	01/11/2020	123859
12983396 GLID9277	Houjia Junior High School	No.260, Dongping Rd., East Dist.	Tainan City, TW	22.9954 120.2297	Weichuan Hu Email Teacher Yi-Ta Pan Email Teacher Email All Teachers	Currently Reporting	01/05/2016	01/11/2020	123798
8778974 GLIDQ5WU	Feng-Shan senior high school	No.130, Sec. 2, Kuangfu Rd. Fengshan Dist.	Kaohsiung City, TW	22.6114 120.3493	Kuo-feng Chen Email Teacher	Currently Reporting	02/26/2014	01/12/2020	113708
12996058 GLID6ZDJ	Kaohsiung Youchang Junior High School	No.161, Shengchang St., Nanzi Dist., Kaohsiung City 811, Taiwan (R.O.C.)	Kaohsiung City, TW	22.7126 120.2863	Sheng Han Lin Email Teacher	Currently Reporting	03/01/2016	01/12/2020	110912

61 GLOBE schools

610217 Data entries

141 GLOBE teachers

11 Workshop held

3189 GLOBE students

146 People trained



Protocols currently used in Taiwan

- Digital Multi-Day Max-Min-Current Air
- Soil Temperature
- Barometric Pressure
- Clouds Observations
- Precipitation
- Relative Humidity
- Surface Temperature
- Davis Weather Station
- Aerosols
- Mosquito
- Land Cover
- Trees
- Water Temperature
- Water pH
- Transparencies
- Alkalinities
- Conductivities
- Nitrates
- Salinities
- Dissolved Oxygens
- GPS

2019 GLOBE Taiwan Events

- GLOBE Taiwan students participated GLOBE IVSS
- **Jan.** GLOBE Korea (KOFAC) visited GLOBE Taiwan
- **Jul.** 2019 GLOBE Taiwan Science Festival
- **Jul.** Special Event: MOST celebrating for 50th anniversary of first Moon landing
- **Oct.** Exhibition in 2019 Global Science and Technology Leaders Forum
- **Nov.** Taiwan teachers and students participated in GLOBE Thailand Students Exchange Program
- **Dec.** GLOBE TAIWAN SPECIAL EVENT

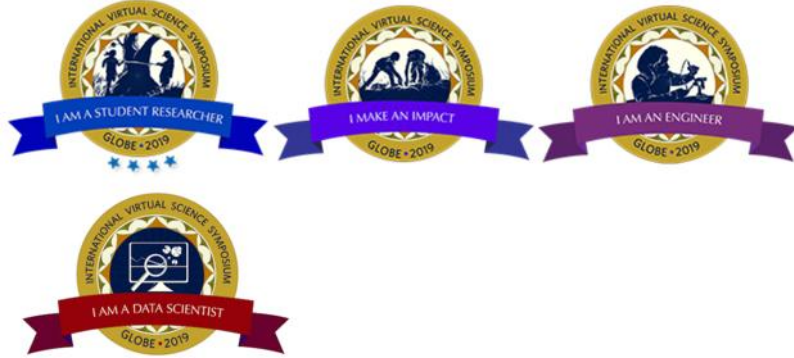


2019 GLOBE IVSS



KaoHsiung Girls' Senior High School

Discuss the influence of rainfall on the concentration of the pollutants



AnLe Senior High School

PM2.5



Water Quality Analysis of The Keelung River And Compares with the EPA's Data



DanFeng Senior High School

How Much Do You Know About The Air Pollution of Taichung?



ZhongZheng Senior High School

Factors Beitou Weather's Change



LoTung Senior High School

Oversleeping? The relation between students absence and meteorology factors



2019/01/15-18 Visiting of GLOBE Korea (KOFAC)



GLOBE Korea, Bo kyung Park, 2 teachers, and 9 students visited GLOBE Taiwan and one of GLOBE school, The Affiliated Jhongli Senior High School of NCU.



2019 GLOBE Taiwan Science Festival



We hosted 2019 GLOBE Taiwan Science Festival on July 10-12.
There were 45 GLOBE participants from Thailand and Taiwan.



2019 GLOBE Taiwan Science Festival

Students' Presentations



2019 科技開屏暨2019 GLOBE Taiwan Science Festival 活動

Discuss the influence of rainfall on the concentration of the pollutants.

Kaohsiung Henanling Senior High School, Taiwan. INSTRUCTOR : Chen,Chien-hung
STUDENT : Chen,Jia-juan & Kao,Fu-Hsi & Hsueh,Wen-Hsuan & Tang,Yi-Wen

Introduction

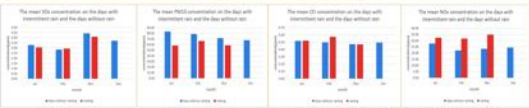
Air pollution has been serious in Kaohsiung. Especially for the factor of topography and the wind direction in winter. In addition, traffic emission increase the pollutants concentration. We are curious about whether rainfall will influence air pollutants such as CO , SO_2 , O_3 and NO_x . We choose to analyze the data of winter because in summer, the impact of typhoons have a wide range of effects. Furthermore, Taiwan is a monsoon climate, the wind in winter is more fixed, so we use the winter data to do research and analysis.

2. Explore changes in ozone concentration near the school

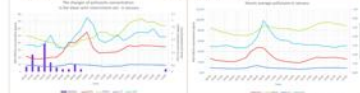


The concentration of CO , NO_x , and SO_2 reached to the peak around 8 a.m., and rose to the second peak around 5 p.m., whose tendency matched with rush hour.

Thus, we infer that concentration of pollutants change is associated with traffic emission. We infer that the source of air pollutants might come from traffic emission and airborne particulate.

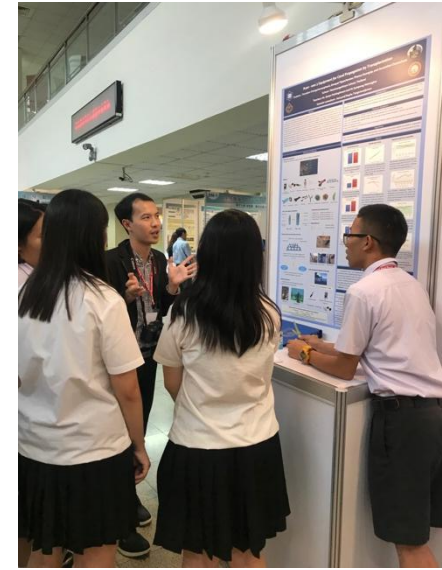


1. The SO_2 and PM_{10} concentration after rainfall was lower than without raising. Thus, we infer that the concentration of SO_2 and PM_{10} decreased owing to rainfall.
2. The changes of CO concentration on the days with intermittent rain and the days without rain were quite similar. We suggest that Photochemical Reaction led to CO decomposition, which make the concentration lower.
3. Raining had no effect on the change of NO_x concentration, and it rose on the rainy day. We surmise that it had been decomposed because of Photochemical Reaction on the days without raining, and make NO_x concentration lower.



If it rains in the morning, the upward trend of PM_{10} concentration will become slower, and the first peak will be pushed back to noon. The whole concentration will decrease apparently.

If it rains in the early morning, the peak time of SO_2 concentration delayed from around 9 a.m. to 10 a.m. The concentration decreased obviously because of rainfall. We found that rainfall would influence the tendency of air pollutants concentration. Consequently, the air pollution caused by thermal inversion on the days with rainfall in the early morning could be improved.



- Special Event: MOST celebrating for 50th anniversary of first Moon landing



We invited two master GLOBE trainers, Ms. Dorian Janney, NASA and Mr. Peter Falcon, NASA to share the history of Apollo Mission and the educational meaning of Moon Landing through the webinar. Besides, we also invited Academician Dr. Wing-Huen Ip to deliver a talk which was related to the cooperation between US and Taiwan on the research of space technology. There were 100 participants joined this event physically. And we also live broadcasted this event as well.



Video: <https://www.youtube.com/watch?v=BZq6m26kVck&feature=youtu.be>

- Global Science and Technology Leaders Forum

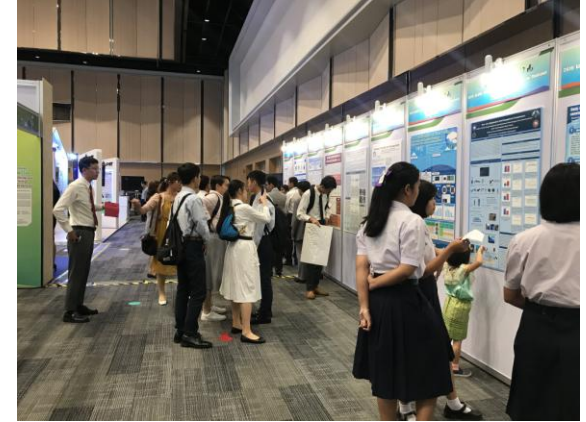
GLOBE Taiwan was invited to present the achievement through an exhibition which is hosted by MOST.



• GLOBE Youth Camp

Venue: Bangkok, Thailand

10 teachers and students from Taiwan participated in this event.





• GLOBE TAIWAN SPECIAL EVENT

12/17 STEM Education Workshop

This event was supported by MOST and American Institute in Taiwan (AIT) and was one of the series activities of "AIT@40", which celebrated the forty years of U.S.-Taiwan friendship and cooperation. We invited Ms. Dorian Wood Janney and Mr. Peter C. Falcon, GLOBE master trainers and NASA senior outreach specialists, to conduct a one-day STEM education workshop for GLOBE teachers and a half day for delivering environmental lectures for GLOBE students and the general public.





- GLOBE TAIWAN SPECIAL EVENT
12/17 STEM Education Workshop

The main purpose of this event is to share the teaching and learning resources of NASA and GLOBE, **to promote the GLOBE Observer App, and encourage students to submit their science reports to 2020 GLOBE IVSS.**



- GLOBE TAIWAN SPECIAL EVENT
12/18 GLOBE School Visiting



New Taipei Municipal New Taipei Senior High School joined GLOBE since 2017



- GLOBE TAIWAN SPECIAL EVENT
12/19 GLOBE Science Talk for students
There were 225 participants.

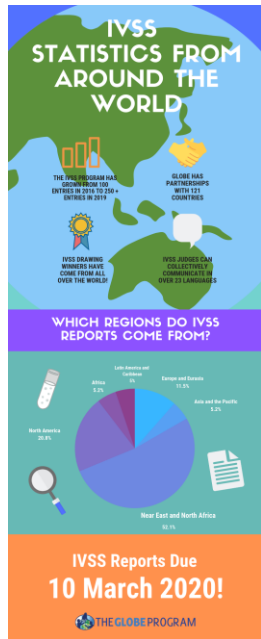


2020 PLANS

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1

Invite more schools to
join GLOBE

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3



Encourage students to
submit their GLOBE
science reports to IVSS

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2

Design and develop
GLOBE teaching plans
with GLOBE teachers



THANKS

- Any Questions?
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