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Brief History on GLOBE in Fiji

The GLOBE program was introduced to Fiji in 1997, with the Fiji Meteorological office agreeing to provide much needed support by being the central data collection hub for schools, through which data may be uploaded on the GLOBE website. In 2011, a total of 26 schools were invited to participate in a workshop that was aimed to review the objectives and activities of the program, and develop strategies to strengthen its roll-out. Sixteen schools attended this workshop.

Cooperating organizations:

In 2011, rain gauges were supplied to schools under the **Schools of the Pacific Rainfall Climate Experiment (SPaRCE)** program. Having the same objectives as GLOBE, the facilitating team decide to merge the two programs but to call the participating schools, GLOBE schools.

Participating schools:

Eleven schools were selected to pilot the program - Namosi Secondary, Kavanagasau Secondary, Cicia Secondary, Bua College, Solevu Secondary, Naiyala High, Khalsa College, Koro High, Latianara Secondary, Lomary secondary and Nadarivatu High.

GLOBE protocols used in country:

Atmosphere – cloud cover, precipitation – rain, air temperature a barometric readings

Description of the program in your country and recent activities in 2016:

As far back as 2012, data from schools had dwindled and then stopped altogether. Last year, however, when reaching out to the pilot GLOBE schools, the Ministry of Education received very positive feedback and expressed interest to re-launch the GLOBE program in the country. The program was seen as a great platform to

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engage students in data collection and other scientific process that encourage students to meaningfully participate in learning the different processes that govern weather and climate, and environmental changes.

JAPAN

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Name: **Dr. Tomoyasu YOSHITOMI** (~ 2016)
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Name: **Dr. Tomoyo F. KOYANAGI** (2017~)
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Cooperating organizations:

Ministry of Education, Culture, Sports, Science and Technology

Participating schools:

Hokkaido Sunagawa High School, Himi High School, Yasato Junior High School, Tokyo Gakugei University Senior High School, Nagatada Elementary School, Excellent High School, Nanzan Girls' Junior&Senior High School, Hachiman Technical High School, Ikuta High School, Kyoto Kaiyou High School, Kasumi High School, Uwajima Fishery High School, Kirikushi Elementary School, Kagoshima Fishery High School

Funding by:

Ministry of Education, Culture, Sports, Science and Technology

GLOBE protocols used in country:

Atmosphere (Cloud, Temperature, Barometric pressure, Relative Humidity)
Hydrology (Water Transparency, Water Temperature, Dissolved Oxygen, Salinity, Electrical Conductivity)
Earth as a System (Budburst, Green-up, Green-down)

Number of schools currently reporting data (2016):

15 schools - 2 elementary schools, 2 junior high schools and 11 high schools.

Description of the program in your country and recent activities in 2016:

See the following page.

GLOBE JAPAN Student Conference Held in Tokyo December 12, 2016

The 9th GLOBE JAPAN Student Conference was held from 3-4 December 2016 at the National Olympics Memorial Youth Center in Tokyo. Students from 15 GLOBE schools (and one non-GLOBE school) took part in this event supported by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT).

During the opening ceremony, participants were greeted by Mr. Yoichi Kiyohara, a School Inspector of MEXT, Prof. Mitsuru Kokubun, Vice-President of Tokyo Gakugei University, and Dr. Toshihiko Higuchi, GLOBE Japan Country Coordinator.



Dr.Higuchi

In addition, Miss. Asuka Asanuma, a student of Nanzan Girls' High School, and her teacher, Ms. Yoko Hayakawa reported on their participation in the 20th GLOBE Annual Meeting (http://www.globe.gov/news-events/meetings_symposia/annual-meetings/20th-annual-meeting) in Estes Park, Colorado, USA this summer.



On the first day, student representatives from each school gave an oral presentation on investigative activities into research in their local and regional environment using GLOBE protocols.



Oral presentation

On the next day, they also made poster presentation and shared ideas about their methods, experiences and challenges directly with each other. The students also enjoyed the night event to interact with other Globe students.



Poster presentation

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Previous to the opening ceremony, scientific programs were presented by the faculty members of Tokyo Gakugei University. There were three programs; Optics Experiment by Dr.Ohi, Heat Island Effect by Dr.Yamashita and Dr. Sawada , and Nature Observation in the Meiji-Jingu Shrine grove by Dr.Ogawa.

The conference provided a wonderful opportunity for all the students to share the results of their research activities and to realize how students at other schools were similarly involved in GLOBE. Students who have an interest in environmental conservation realized their opportunities to expand beyond the scope and reach of their research, and they were encouraged to continue their daily observations and measurements

Country

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Cooperating organizations: NOAA WSO Pohnpei, State Departments of Education

Participating schools: FSM Schools

Funding by: Domestic

GLOBE protocols used in country: None at this moment. Building capacity to conduct GLOBE protocols has been discussed through the board of Directors and other Stakeholders. No specific dates has been assigned.

Number of schools currently reporting data (2015): None

Description of the program in your country and recent activities in 2016:

GLOBE Micronesia has observed schools science fairs. GLOBE Micronesia has collaborated with Pohnpei WSO (NOAA) conducting and teaching weather observations for schools. The plan after capacity building workshop is to incorporate GLOBE activities into the national curriculum and solicit other funding sources to promote GLOBE in the small island nations in the Pacific.

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Country

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Cooperating organizations:

Ministry of Green Environment and Tourism of Mongolia
'Information and training center for nature and development' NGO
Eco schools (5), international laboratory schools (2)
Unit of project 'Sustainable education for development'

Participating schools:

West side: Khovd aimag, Buyant soum school
Zavkhan aimag, Aimag center school #3
East side: Selenge aimag, Mandal soum school #1
Baganuur Bolovsrol school
UB: Eco education center at NUM
Shine Erin school
Shine ekhlel school

Funding by:

Globe Asia and Pacific Region
Swiss development for Agency
Ministry of Education Culture, Science and Sports

GLOBE protocols used in country:

Atmospheric protocol (basic)
Hydrology protocol (basic)
Electrical conductivity
Water pH protocol using a pH meter
Water transparency using a Secchi disk

Number of schools currently reporting data (2015):

Only, measuring, collect data, fill the data sheet

Description of the program in your country and recent activities in 2016:

1. **Training of Asia Pacific trainers of training.** Dr Desh Bandhu, International trainer of the Globe Program, Director, Globe Program in Asia Pacific, together with one of the trainers conducted workshop involving 25 teachers of "Shine Ekhlel" International school on 16-18 May, 2016. **Participants of the training were able to get first hand information on the Globe Program, its main content, knowledge and skills on use of water, soil and air measurement and study techniques.** Cascading training was provided to Natural Science faculty members as part of their development program. Some faculty members involved in dissemination to colleagues and rural schools.

2. **Participation in international events.** One student took part in 20th GLOBE Annual Meeting in Colorado, USA that held on 15-23 July, 2016. Another 6 students with one teacher were successfully presented at ASIA-PACIFIC GLOBE SCIENCE FAIR 2016 sponsored by Korea. Our student learning from each other how to measure, collect and process data on

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water, air and soil, how to conduct analysis on collected data and make proper conclusions, and finally presenting techniques explored as well.

3. **Training of the 7 regional centers' teaching staff. On March 24-26, May 10-14, 2017**, representatives of ToT (trainers of training) together with 6 teachers conducted training at 7 regions on Sustainable Development Education during which Globe program was introduced as well as protocols on use of measurement tools at local level, and announced call for active participation in competition. We observed shortage of measuring tools of science teachers thus introduced handy simple techniques that could replace required sophisticated equipment.

4. **"Air, water, mountain, soil observation, measurement and analysis" presentation competition among secondary and high school students.** Ministry of Education, Culture, Science and Sports announced competition among secondary and high school students on "Air, water, mountain, soil observation, measurement and analysis" from 20 April to 20 May 2017.

5. **Small grants for local secondary school.** Together with NGOs we plan to finance eco club teachers research activities under Globe Program. "Who knows Globe Program best" action was organized among capital city school students.

6. Further actions:

- Take part in 21st GLOBE Annual Meeting in the USA, and participate actively in Taiwan events (1 teacher, 4 students);
- Provide internet access to local schools urgently;
- Identify required Globe measuring equipment and tools and organize provision, define possibilities of replacing some tools adjustable to Mongolian condition.

New Zealand

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Cooperating organizations:

Office of the Prime Minister's Chief Science Advisor
(Ministry of Education)

Participating schools:

Balmacewan Intermediate
John McGlashan College
Opunake High School
St Bernards School
Tahuna Normal Intermediate

Funding by:

Unknown.

GLOBE protocols used in country:

I am not sure.

Number of schools currently reporting data (2015):

In the past year, five GLOBE schools have reported over 13,500 atmosphere and hydrology measurements. They are:

Balmacewen Intermediate: <http://www.globe.gov/web/balmacewen-intermediate>
John McGlashan College: <http://www.globe.gov/web/john-mcglashan-college>
Opunake High School: <http://www.globe.gov/web/opunake-high-school-nznzcs3->
St. Bernards School: <http://www.globe.gov/web/st-bernards-school>

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Tahuna Normal Intermediate: <http://www.globe.gov/web/tahuna-normal-intermediate-nznzbdwt->

Description of the program in your country and recent activities in 2016:

Since 2000, GLOBE schools in New Zealand have reported over 78,000 data entries and received 36 honor rolls for their accomplishments. There are now 67 teachers and 211 GLOBE schools registered on the GLOBE website:

<http://www.globe.gov/web/new-zealand>

There are eight GLOBE trainers in New Zealand. Of these, four have logged in to GLOBE, including two in the past year.

The first GLOBE Country Coordinator was John Lockley, Department of Mathematics, Science and Technology Education, School of Education, Waikato University in Hamilton. He actively developed GLOBE in New Zealand, aligning GLOBE with the national curriculum. Over 275 teachers in more than 215 schools were trained. The management of GLOBE was transitioned to the Royal Society in 2005 and there were three Country Coordinators from the Royal Society between 2005 and 2010, with none since. During that time, GLOBE activities in New Zealand were highlighted in two GLOBEStar features:

http://www.globe.gov/news-events/globe-stars?p_p_id=commonstarsportlet_WAR_globegovcmsportlet_INSTANCE_Z0Bz&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=1

The aim now is to reinvigorate GLOBE activities and awareness of GLOBE in New Zealand.

Palau

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Cooperating organizations:

Ministry of Education, Palau

Participating schools:

Palau High School

Meyuns Elementary School

Ngarchelong Elementary School

Funding by:

None -

GLOBE protocols used in country:

None

Number of schools currently reporting data (2015):

None

Description of the program in your country and recent activities in 2016:

1. Ministry of Education in collaboration with inter-agencies in planning and organizing Earth Day activities.
2. Ministry of Education in collaboration with inter-agencies in planning and organizing Water Day activities.
3. Ministry of Education in collaboration with Palau Conservation Society Agency in Implementation of "Ridge to Reef" Project.
4. Ministry of Education in collaboration with Palau Community College in planning and organizing Science STEM Fair 2017.

Korea



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Participating schools: 20 schools in 2017

*33 schools are enrolled in GLOBE website

Funding by: Government (MSIP, Ministry of Science, ICT and Future Planning)

GLOBE protocols used in country:

- Atmosphere : wind speed, wind direction, air temperature, relative humidity, atmospheric pressure, precipitation, cloud, CO₂, O₂, COD
- Hydrosphere : Oxygen isotope(precipitation), pH(precipitation), temperature(sea, river), DO, pH, EC(electrical conductivity), alkalinity, nitrate, phosphate
- Soil : humidity, temperature
- Biosphere : mold

Number of schools currently reporting data (2016): 10 schools

Description of the program in your country and recent activities in 2017:

- Recruitment of GLOBE schools of 2017('17.4~5)
- GLOBE teacher training workshop('17.5.19~20)
- Participating in GLOBE annual meeting('17.7)
- GLOBE students inquiry camp('17.8)
- Contest of Final report and selecting best practices('17.11)
- Sharing best practices and award ceremony('17.12)

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Nepal

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Website: www.ecca.org.np



Cooperating organizations:

- Environmental Camps for Conservation Awareness (ECCA)
- Program Implementing Schools

Participating schools:

- Yashodhara Baudha Secondary School, Thaina, Lalitpur
- Prabhat Higher Secondary School, Tyagal, Lalitpur
- Kitini Secondary School, Godavari, Lalitpur
- Harisidhi Secondary School, Harisidhi, Lalitpur
- Tri Ratna Cooperative School, Bungmati, Lalitpur
- Jalpa Secondary School, Dhapakhel, Lalitpur
- Shree Krishna Higher Secondary School, Dhapakhel, Lalitpur
- Geeta Mata Higher Secondary School, Dallu, Kathmandu
- Jagat Sundar Bona Guthi, Dallu, Kathmandu
- Shree Mahendra Gram Secondary School, Tikathali Lalitpur
- Mahendra Adarsha Secondary School, Suryabinayak, Bhaktapur
- Kanya Co-Education Secondary School, Tekha Pukhu, Bhaktapur
- Mt. Kailash Sec School, Kathmandu
- Shree Gothbhyanjyang H.S.S, Dalchoki, Lalitpur
- Shree Kalidevi H.S.S, Malta, Lalitpur
- Shree Bidhyadhishwori H.S.S, Ashrang, Lalitpur
- Shree Bhagbhairab H.S.S, Kaleshwor, Lalitpur
- Shree Bhagbhairab S.S, Malta, Lalitpur
- Shree Mahankal H.S.S, Bhattendanda, Lalitpur
- Shree Magargaun H.S.S, Sankhu, Lalitpur
- Shree Janajagriti H.S.S, Ikudol, Lalitpur

Funding by:

- ECCA - Self Funding

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GLOBE protocols used in country:

- Hydrology
- Atmosphere

Number of schools currently reporting data (2015): 2016

Data is reporting through ECCA with the help of youth for the continuation of data entry.

Description of the program in your country and recent activities in 2016:

- **Climate Learning Training for Youths**

- Organized Youth Training on GLOBE activities and protocols
- Made youths aware about climate change issues and encouraged them to take initiative through unity



- **GLOBE Orientation Program to school teachers**

- Organized GLOBE orientation program for the teachers of different schools
- Discussion on climate change and importance of science education and practical learning in schools

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- **Herbal Garden Initiative**

- Supported schools for herbal garden reconstruction after the earthquake of 2015 with an aim to continuously conserve the traditional and indigenous knowledge of plants for future generations, in a fun and practical way.



- **Solar Water Pumping Program**

- Implemented solar pump program in 2 VDCs of Terai region to promote solar energy and replace diesel/petrol based pumps
- Held stakeholders training and orientation programs on use of solar water pumps
- Established Solar Powered Irrigation Management Committee and ongoing monitoring of the program



- **Paper Recycling Programs**

- Conducted paper recycling trainings in different schools of Nepal to make use of available papers and promote 5R concept

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- **Nature club Trainings**

- Yearly nature club management training for project schools. Nature clubs focus on environmental conservation as well as various issues of society



- **Nature hike**

- Hiking to bring students closer to nature and make them aware about contemporary climate/ecosystem based issues



- **Youth mobilization for regular data entry from ECCA office**

- One day Datas on atmosphere and hydrology are recorded by youth through weather station established at ECCA Head office premises

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- **Public Awareness Activities**

- Organized door to door safe drinking water campaigns through nature clubs
- Organized awareness raising programs in communities on the theme of safe drinking water



- **Water Quality Test**

- Supported students for water quality tests of various places within the valley
- Physico-chemical parameters testing of water samples were done including *E.coli* test



- **Children Playground construction by youths**

- Supported youths to construct a children playground at Lalitpur. This contributed to green space concept and promoting greener environment

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- **Support for women groups**

- Women groups within Lalitpur were supported for safe drinking water distribution process



- **Wall magazine Trainings**

- Organized wall magazine trainings to empower nature clubs for effective illustration of social and environmental issues

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- **Stakeholder Trainings on Water, Sanitation and Hygiene (WASH) Education**
 - Provided concept and visioning approach for better WASH friendly schools



- **Established Wash Corner**
 - Established wash corner in project schools to provide WASH facilities for students



- **Life Skill, WASH and visioning Training**
 - Organized life skill, WASH and visioning based trainings for youths

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Vietnam



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Cooperating organizations:

Center for Education and Development (CED)

<http://ced.edu.vn/>

Participating schools:

1. Thuc nghiem School
<http://thucnghiem.edu.vn/>
2. Nguyen Tat Thanh School

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<http://www.ntthnue.edu.vn/>

3. Hanoi- Amsterdam school

<http://hn-ams.edu.vn/>

4. Nguyen Sieu private school

<http://nguyensieu.edu.vn/>

5. The Olympia schools

<http://theolympiaschools.edu.vn/>

Funding by:

VAST: Vietnam Academy of Science and Technology

VNSC: Vietnam National Satellite Center

GLOBE protocols used in country:

- Not started yet

Number of schools currently reporting data (2015):

- Not started yet

Description of the program in your country and recent activities in 2016:

- Not started yet

Country

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Cooperating organizations:

IPST cooperate with Universities in Promoting Environmental Science Research Based on STEM Education Concept. In the fiscal year 2016 - 2017, IPST provided operational budget for this purpose to Thaksin University, Walailak University, Prince of Songkla University Surat Thani Campus, Suratthani Rajabhat University, Loei Rajabhat University, Burapha University, Srinakharinwirot University, Kasetsart University Kamphaengsaen Campus, Sirindhorn International Institute of Technology of Thammasat University, Mahidol University (only 2016), Mae Fah Luang University and the last new university, Rajamangala University of Technology Isan.

Participating schools:

There were 109 schools participated in 2016.

Funding by:

Ministry of Education, Thailand

GLOBE protocols used in country:

Atmosphere, Hydrology, Land cover and Soil Protocol

Number of schools currently reporting data (2015):

There were 61,639 total observations from 64 schools and 307 teachers.

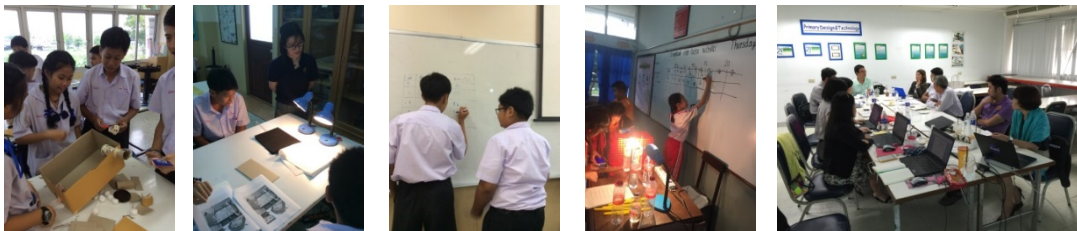
Description of the program in your country and recent activities in 2016:

GLOBE Thailand Report August 2016- May 2017

1. Climate Change Supplementary Materials Development

IPST had received partial grant from US Embassy and cooperate with Laos to implement the climate change supplementary into school. IPST had developed climate change supplementary for upper primary level (Grade 4-6) and Lower secondary level (Grade 7-9). These activities aim at giving the students practical experience in Climate Change education such as Weather and Climate, Impact, Mitigation and Adaptation of Climate Change. To increase students' awareness of sustained natural resource and environmental conservation, the learning activities have been designed to motivate them to continue their exploration, investigation and search for knowledge.

From August to September 2016, IPST invited 4 teachers from 3 schools to conduct a trial of the climate change activities. Dara Academy, Chiang Mai province tried out the activities in Primary and Secondary School level; Prayaprasertsuntrasai (kajank singhasenee) School, Bangkok, Primary School level; and Donchanwitthayakhom School, Kalasin Province, Secondary School level. IPST staff also conducted the trial in grade 5 and 8 in Pramochwittayaramintra School, Bangkok. After that, IPST arranged a meeting between teachers from the pilot schools and IPST staff at the IPST office to gather the ideas on the trial results.



IPST conducted a teacher training workshop on 15-17 December 2016 at Windsor Suites Hotel in Bangkok. IPST invited teachers from the pilot school and GLOBE teachers to serve as trainers in this workshop. The participants included 40 teachers from 4 Lao schools and 26 teachers from Thai schools. The workshop also had a sharing session for the participants and lecturers to exchange their ideas about climate change implementation.



2. Environment STEM Supplementary Book

IPST has developed Environment STEM supplementary book for upper primary level (Grade 4-6) and Lower secondary level (Grade 7-9) and GLOBE Protocol are integrated in these books. The four themes of books contain Atmosphere, Biosphere, Hydrosphere, and Pedosphere. The topics in book are Using clouds to predict the weather, Eco farm, Green building, Soil improvement, Smart farmer.

3. Cooperation with Universities in Promoting Environmental Science Research Based on STEM Education Concept

IPST cooperates with universities in the GLOBE network to systematically multiply the results of environmental education so as to build GLOBE Thailand's cooperative academic network at both national and international level as well as to develop students' knowledge and competence in undertaking environmental science research within the context of STEM education. In this fiscal year 2016 (1 October 2015 - 30 September 2016), IPST provided operational budget for this purpose to Thaksin University, Walailak University, Prince of Songkla University Surat Thani Campus, Suratthani Rajabhat University, Loei Rajabhat University, Burapha University, Srinakharinwirot University, Kasetsart University Kamphaengsaen Campus, Sirindhorn International Institute of Technology of Thammasat University, Mahidol University, and Mae Fah Luang University. In all, 72 schools took part in different activities organized by the universities as follows:

1. Thaksin University

The two projects undertaken this year are;

1) TSU Earth System Science Training: training GLOBE protocol and STEM education for 26 students and 17 teachers from 9 schools in Pattalung Province.



2) Mosquito Protocol Workshop: training Mosquito Protocol for 17 students and 11 teachers from 6 schools in Pattalung Province. Students develop 6 researches to study number of mosquito in Pattalung Province.



Faculty of Science, Thaksin University

คู่มือ ขยายพันธุ์ Mosquito

GLOBE STEM Education
Science Technology Engineering Mathematics

โครงการพัฒนางานวิจัยสิ่งแวดล้อมในรูปแบบสะเต็มศึกษา (STEM Education) ประจำปี 2559
โรงเรียนในเครือข่ายคณะวิทยาศาสตร์ มหาวิทยาลัยทักษิณ

วันที่ 30 มิถุนายน 2559
ณ คณะวิทยาศาสตร์ มหาวิทยาลัยทักษิณ วิทยาเขตพัทลุง

www.sci.bsu.ac.th | Facebook: คณะวิทยาศาสตร์ มหาวิทยาลัยทักษิณ | Line ID: sci.bsu

2. Walailak University

The two projects undertaken this year are;

1) Global Precipitation Measurement (GPM) workshop

The 4 teachers and 41 students from 4 schools measure rainfall by using GLOBE protocol in the “Precipitation Field Campaign” and send data into GLOBE website. The data can compare with the other country and GPM satellite to understand climate change. Students develop 13 researches to study relationship among cloud temperature humidity aerosol and rainfall.



2) GLOBE Data and Information System (DIS) Workshop

The 6 teachers and 28 Students from 5 schools receive Galileo board and sensor from Intel microelectronics (thailand) Co., Ltd. and The Aspirers Group Co., Ltd. for Galileo/IoT workshop for smart farm and smart ocean monitoring.



3. Prince of Songkla University, Surat Thani Campus

During this reporting period, PSU, Surat Thani Campus develops two projects are;

1) The tropical rice protocol by using Image Processing and ARDUINO Board. The 6 schools that took part in this project undertook 5 research works.



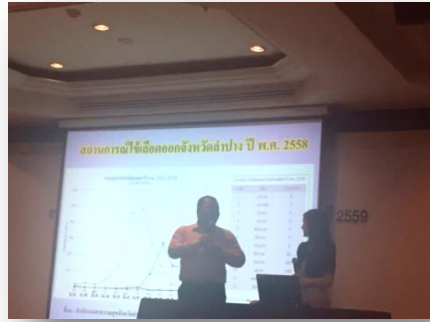
2) The tropical pitcher plants protocol

The 5 students from 5 schools develop 5 researches to study tropical Pitcher plants in Songkla Province by learning from online web base (http://www.s-cm.co:90/picherplant_learning)



4. Suratthani Rajabhat University

SRU was conducted the project which aim at supporting potential of GLOBE Alumni Thailand. Former GLOBE students open LINE group and Facebook page to communicate among alumni. Activities in each region were also publicized and updates provided through online channel. GLOBE Alumni set up environmental science camp for 122 students and 13 teachers to promote GLOBE protocol to new school.



5. Loei Rajabhat University

Earth system science training workshop for 14 students 7 teachers from 5 schools by collection of data on Soil, Hydrology, Atmosphere and Land Cover is under way.



6. Burapha University

A collaborative environmental research development project is cooperating among scientists and 8 teachers and 22 students from 5 schools and develops 6 researches.



7. Srinakharinwirot University

A training workshop on Galileo Board, sensor and Geo-information technology conduct with a view to applying Intel Galileo Board and environmental sensor such as temperature, humidity to monitor weather in school and create own database. The 12 students and 4 teachers develop 4 researches.



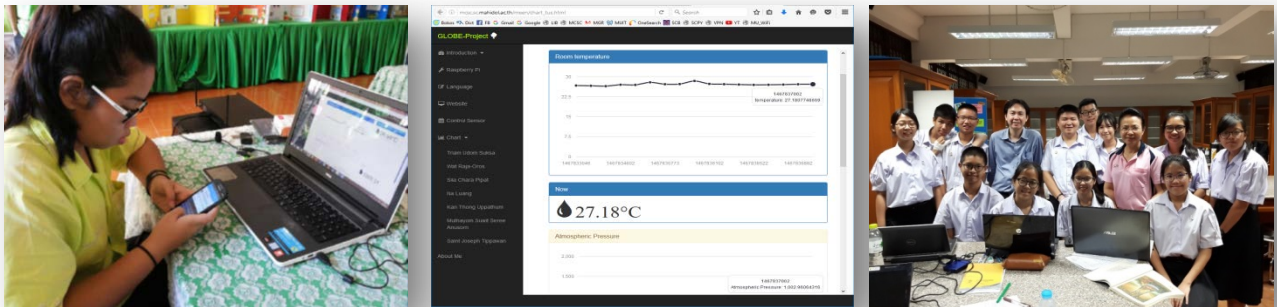
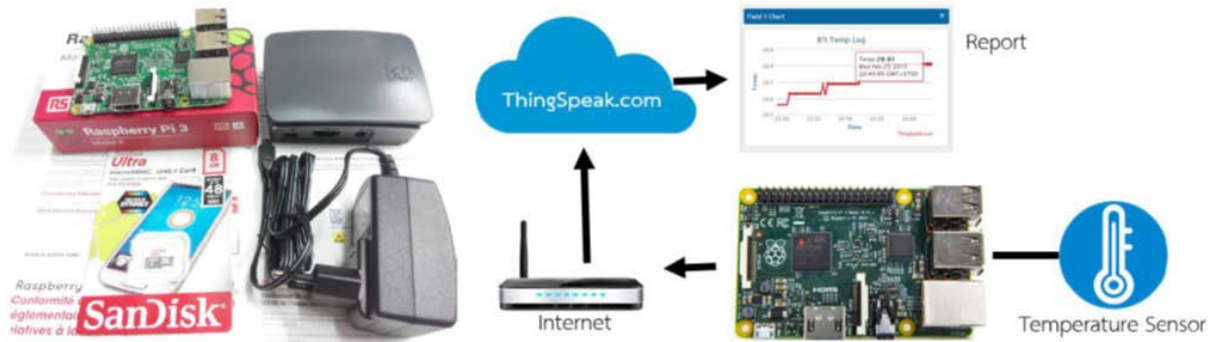
8. Kasetsart University Kamphaeng Saen Campus

The Kamphaeng Saen Campus of Kasetsart University implement a soil science research development project base on joint collaboration between scientists and teachers and students. Under this project, research grants are award to 5 schools to undertake one soil science research each. It is require that each research apply STEM education concept. The 18 students and 6 teachers from 4 schools develop soil science education research proposals within the context of STEM education.



9. Mahidol University

In an attempt to establish linkage between air pollution in Bangkok Metropolitan and its perimeter and other daily life factors, The workshop focus on measuring weather conditions and cloud observation by using Raspberry Pi Board and send data to website (<http://mcsc.sc.mahidol.ac.th/meen/>). The 21 students and 11 teachers from 7 schools develop 7 researches.



10. Mae Fah Luang University

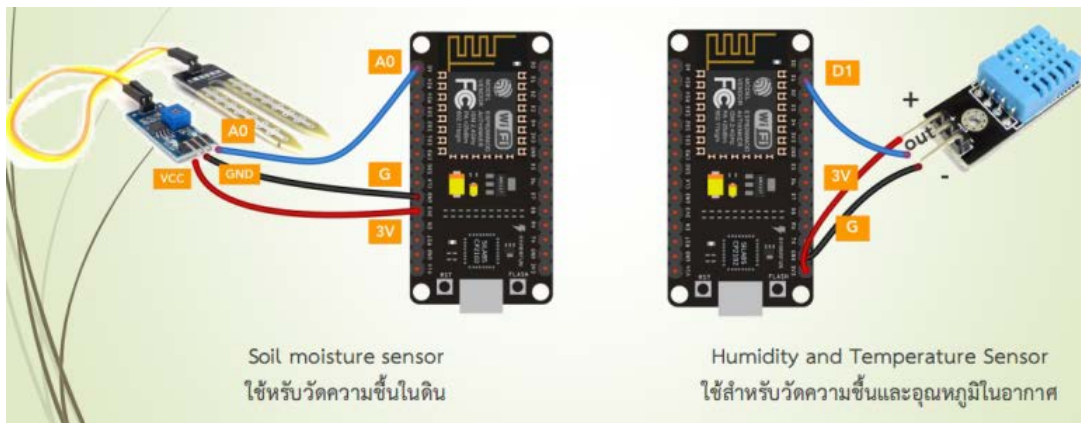
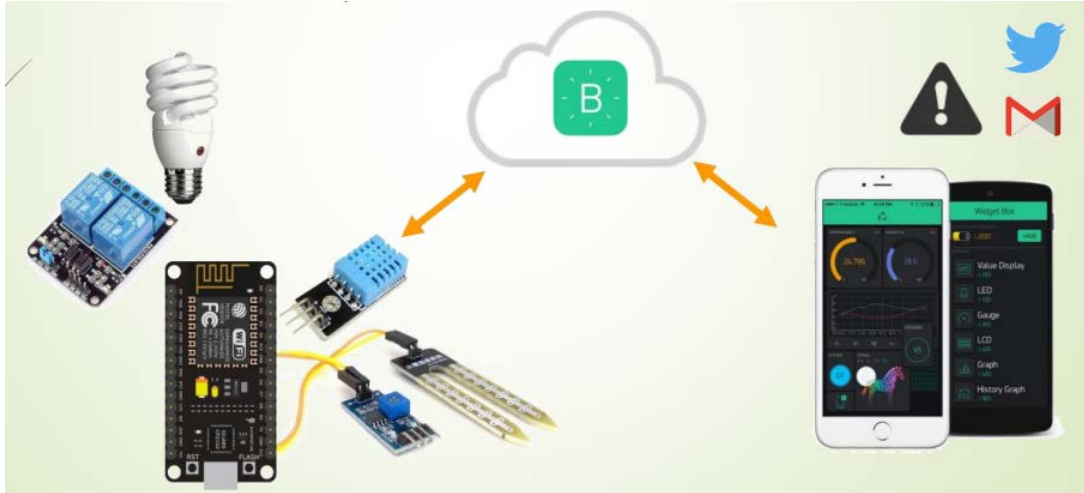
The impact of climate change on tropical rice in Chiang Rai Province. The project study on growth of tropical rice in different environments and collect data report to Google site. The 10 students and 4 teachers from 4 schools develop 4 researches.



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11. Sirindhorn International Institute of Technology

Under the project for the promotion of environmental learning through application of micro-controller and smart phone to monitor and control cloud Soil moisture sensor and Humidity and temperature Sensor. The 50 students and 5 teachers from 2 schools develop 6 researches.



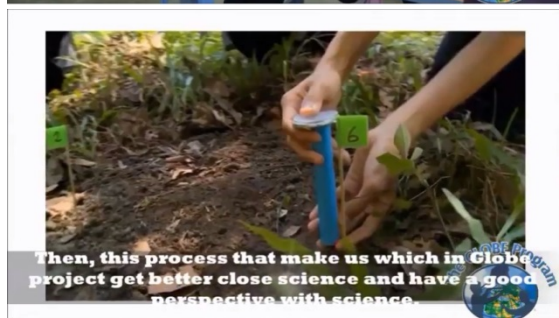
REPORT FOR 2016

In the fiscal year 2017 (1 October 2016 - 30 September 2017), IPST provided operational budget for this purpose to Thaksin University, Walailak University, Prince of Songkla University Surat Thani Campus, Suratthani Rajabhat University, Loei Rajabhat University, Burapha University, Srinakharinwirot University, Kasetsart University Kamphaengsaen Campus, Sirindhorn International Institute of Technology of Thammasat University, Mae Fah Luang University and the last new university, Rajamangala University of Technology Isan. They will report their project in September 2017.

4. Promotion of Environmental Science Research in Thailand

4.1 Earth Day Celebration

To celebrate Earth Day 2017, IPST invited GLOBE Schools in Thailand to submit a short video to express how GLOBE has influenced their awareness of their environment and their interest in Earth Science. Donchanwitthayakhom School and Saint Joseph Thiphawan School sent their story to Asia-Pacific Regional. Donchanwitthayakhom School has been selected to represent the GLOBE Asian and Pacific Region in the GLOBE Earth Day Broadcast on the GLOBE website (<https://www.youtube.com/watch?v=Vy45zwmkJ7c>) on 21 April 2017.



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4.2 GLOBE Data Entry Workshop

IPST conducted the GLOBE Data Entry Workshop on 19-20 January, 2017 at SMART Classroom 1, 15th Anniversary IPST Building. There were 37 teachers from all regions of Thailand. The workshop aimed to promote entering and using data from GLOBE website.



5. Thailand GLOBE Student Research Competition 2017

5.1 Thailand GLOBE Student Research Competition 2017

Thailand GLOBE Student Research Competition 2017 will be held at Siam Discovery during 8 – 10 June 2017. IPST has selected oral presentation 25 researches and Poster presentation 42 researches. In this year, IPST received the partial grant by Siam Piwat Co.,Ltd.

5.2 Thailand Junior Water Prize 2016 - 2017 (TJWP2016 – 2017)

IPST has signed agreement of cooperation with Stockholm International Water Institute (SIWI) on 25 December 2015 to send the winner team in Thailand to Stockholm Junior Water Prize 2016-2018. The winner of TJWP2016 was invited to submit their innovative water conservation methods to Stockholm Junior Water Prize 2016, Sweden on 27 August – 1 September, 2016. Thailand was the winner in this year and receives a USD \$15,000 award and a blue crystal prize sculpture from HRH Prince Carl Philip of Sweden.

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IPST organized the Thailand Junior Water Prize 2017 competition on 1 May 2017 with an objective to encourage students to learn about, care for, and conserve water resources. The winner was the research Titled “Green Energy Boat” from Suankularb Wittayalai Nonthaburi School, Surat Thani province. In this year, IPST received the partial grant by Government Savings Bank, Metropolitan Waterworks Authority, Nestlé (Thai) Ltd. and Siam Piwat Co.,Ltd. The winner of TJWP2017 was invited to submit their innovative water conservation methods to Stockholm Junior Water Prize 2017, Sweden on 26 – 30 August, 2017.



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6. Student Exchange Program

6.1 Thailand – India – Taiwan Student Exchange Program 2016

Eighteen students from India, twelve students from Taiwan and fifty students from Thailand took part in ISMTEC 2016 on October 18 – 23, 2016 at Ambassador Hotel, Thailand. The participants with opportunities to share and exchange experiences via poster presentation of their research.



6.2 Asia-Pacific GLOBE Science Fair 2016

Fourteen students, teachers and scientists from Dara Academy, Donchanwittayakom School, Sa-Nguan Ying School took part in the Thailand – India – Taiwan Student Exchange Program on November 7 – 11, 2016 at Ritzcarlton Hotel, South Korea. The participants with opportunities to share and exchange experiences via presentation of their research.



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6.3 India – Thailand– Taiwan Student Exchange Program 2017 in India

Eleven students, teachers and scientists from Saint Joseph Thiphawan school and Silacharaphiphat School took part in the India – Thailand– Taiwan Student Exchange Program on January 31 – February 4, 2017 at Bhubaneswar, India. The participants with opportunities to share and exchange experiences via presentation of their research.



6.4 STEP-NUS Sunburst Environment Programme 2016

STEP-NUS Sunburst Environment Programme 2016 took place in RELC International Hotel, Singapore during 20 - 26 November 2016. Six participants namely, Chanitapa Pichai (Chumphae Suksa School, Khonkaen), Natathaphon Thongbai (Chiangkhamwittayakhom School, Phayao), Piyongkul Phumjan (Bangpakok Wittayakhom School, Bangkok) and Phimpawi Phuditdetwat (Bangpakok Wittayakhom School, Bangkok), Ms. Lalida Umbua IPST and Tawinan Mala from IPST attended this Programme. The students presented their research project “The reduction of domestic waste in Thailand as a strategy to cope with climate change that affects the spread of mosquito-borne diseases” in oral and poster presentation sessions.



7. Earth System Science and Environmental Measurement Workshop

IPST arranged the Earth System Science and Environmental Measurement Workshop by using GLOBE protocol for 40 Premium Science Mathematics and Technology Teachers on May 11-13, 2016 at Ampawa, Samutsongkhram Province.

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8. GLOBE Annual Conference 2016

GLOBE Thailand joined the 20th GLOBE Annual Meeting on July 16 – 21, 2016 at Estes Park, Colorado, USA. There were 176 participants from 32 countries. The seven countries from Asia-Pacific Region are India, Japan, Mongolia, South Korea, Taiwan, and Thailand. There were 11 participants from Thailand, 2 GLOBE working group member, 2 IPST staffs, 4 teacher, and 3 students. In the conference, Assoc. Prof. Krisanadej Jaroensuthasinee and Assoc. Prof. Mullica Jaroensuthasinee introduced the new GLOBE Protocol, Mosquito protocol. Thai teachers, Mrs. Thip-Arpa Srivarangkul from Triamudomsuksa School, Mrs. Paninee Voranetivudti from Paphayompitthayakom School and Mr. Vithiwat Raksaphakdee from Thatumprachasermwit School shared their practices on GLOBE implementation in school. There was the student research presentation from Princess Chulabhorn Nakornsrihammarat on “Seasons and climatic factors affecting Dengue cases in Muang Nakhon Si Thammarat, Thailand. The members of Princess Chulabhorn Nakornsrihammarat team were 1 teacher, Ms. Kanokrat Singnui and 3 students, Mr. Phuwadon Noradin, Mr. Thiranai Keatpimol, and Mr. Thanayot Muangkeaw.



9. Meet GLOBE Earth Science Educator

IPST hosted the GLOBE Earth Science Educators meeting on 23 January, 2017 at Sukhum Srithanyaratana meeting room, IPST Administrative Building. Ms. Dorian M. Janney, Formal Education Specialist for Global Precipitation Measurement and Peter C. Falcon, Earth Science Outreach Coordinator shared their experience on NASA education mission with IPST staffs to inspired kids to investigate precipitation, observe cloud and interpret NASA satellite image. They also provided NASA resources link for Earth Science Education.

