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CASE STUDY

Building Sustainable Communities through the U.S.- Taiwan Eco-Campus Partnership Program

CONTRIBUTORS

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GEEP is a partnership of the U.S. Environmental Protection Agency, the Environmental Protection Administration of Taiwan, and the North American Association for Environmental Education.





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Overview

The U.S.-Taiwan Eco-Campus Partnership Program (EPP) seeks to build a clean and healthy living environment to achieve the goal of sustainable communities. EPP's main objectives include:

- Improve the collaboration between Taiwan and the U.S. in environmental education
- Promote the spirit of the Eco-Schools Program to elementary, junior high, and senior high schools in Taiwan
- Encourage schools to participate in eco-campus certification
- Communicate philosophies and knowledge of energy conservation, carbon reduction, and environmental sustainability to local communities

EPP provides schools with a systematic tool to achieve the Sustainable Development Goals (SDGs) by implementing environmentally friendly actions and demonstrating community engagement.

Working in cooperation with the US Environmental Protection Agency (US EPA) and the National Wildlife Federation (NWF), the Environmental Protection Administration of Taiwan (EPA Taiwan) commenced a trial operation of EPP in Taiwanese schools in 2011 and officially launched the program in 2014. EPP is based on the seven-step framework of the Foundation for Environmental Education's (FEE) [International Eco-Schools Program](#), and specifically NWF's [Eco-Schools USA Program](#). Students, teachers, and community members use the seven-step framework to address energy conservation, carbon reduction, and other sustainability issues in their communities, which enables Taiwanese schools to align with international sustainable development education standards more easily.



Implementation

The Seven-Step Framework

Schools use the seven-step framework below as a guide for implementing the EPP. Students take the lead in executing each step and think creatively and critically about environmental and sustainability challenges at their school to develop place-based solutions and eco-action plans. Teachers use EPP's award system to recognize students as they make progress implementing their plans. Steps 1-4 are best completed in order since each step is based on the results of the previous steps. Steps 4-7 are woven throughout the process and are considered critical for and long-term sustainability. The seven steps are:

1. **Form an Eco-Action Team.** This student-led committee represents the larger school community and is the driving force behind environmental education and action.
2. **Conduct a Pathway to Sustainability Audit.** The Eco-Action Team begins work with an audit of the school's sustainability performance.
3. **Create an Eco-Action Plan.** Using the results of the audit, as well as community input, the team develops goals, identifies actions, and sets the timeline for achieving results.
4. **Monitor and Evaluate Progress.** The team is responsible for monitoring and evaluating their progress toward the eco-action plan's goals and actions.
5. **Link to Existing Curriculum.** Teachers help the team connect learning and action to the standard curriculum.
6. **Involve the Community.** The team includes the broader school community in plan implementation, which provides access to a wide array of skill sets and perspectives.
7. **Create an Ecological Regulation or an Eco-Code.** The team develops a mission statement that the whole school and community can support.

Pathways to Sustainability

Taiwan uses the same 12 Pathways to Sustainability as Eco-Schools USA, namely *Energy; Water; Climate Change; Transportation; Schoolyard Habitat; Consumption and Waste; Healthy Living; Healthy Schools; Biodiversity; Sustainable Food; Learning About Forests; and Watersheds, Oceans, and Wetlands (WOW)*. Taiwan schools participating in the program can use NWF's grade-level appropriate [resources](#) for teachers and students to implement the seven-step process for each Pathway to Sustainability.

Award Recognition System

Taiwan made minor adjustments to the Eco-Schools USA [award recognition system](#) to recognize each school's accomplishments in the program. Registered partner schools can be recognized at bronze, silver, and green flag levels based on the number of Pathways to Sustainability they complete. Schools are free to choose a level appropriate for their circumstances, with the green flag designation the highest honor for an eco-campus. Schools apply for awards on the [EPA Taiwan Eco-Campus website](#).

When applying for bronze and silver flag awards, partner schools must not only conduct self-assessments, but provide the results of implementing the seven-step framework. Green flag award criteria require on-campus assessments from three external reviewers in addition to the bronze and silver flag award requirements (Figure 1). The reviewers assess the school's implementation using objective criteria to determine whether a school fulfills the requirements for the green flag award. To ensure continuous development towards sustainability, schools awarded a green flag undergo re-evaluation every two years. A school awarded four green flags is considered a permanent eco-campus.

Figure 1. On-campus Green Flag review



To align with global trends in sustainable development and the unique conditions of Taiwan, EPA Taiwan invited experts and academics in 2019 to discuss the most important Pathways to Sustainability for Taiwan, and identified Transportation, Climate Change, Sustainable Food, and Consumption and Waste as critical pathways for eco-campuses in Taiwan to receive recognition. When applying for silver or green flag certification (including re-certification), schools must implement at least one of these four pathways.

Eco-Schools USA Pathways to Sustainability

If the framework is the road map, then the pathways are the lanes. Using the Seven Step Framework, schools explore and take action through one or more pathways. Pathways are self-guided and concentrate on environmental focus areas, such as biodiversity or climate change. The most relevant pathways are chosen based on the [Sustainability Audit](#). (NWF Eco-Schools)

Evaluation

To better understand the implementation effectiveness of the EPP and the participants' experiences, EPA Taiwan developed a questionnaire and conducted a survey with practitioners and students to assess environmental knowledge, attitudes, and behavior. The results (see "Results") not only provide information on participant experiences, but also serve as a reference for future planning. EPA Taiwan uses mentors to follow up and connect with the participants in the EPP to evaluate whether teachers and students are using the skills learned in the program to bring about long-term sustainable, positive change

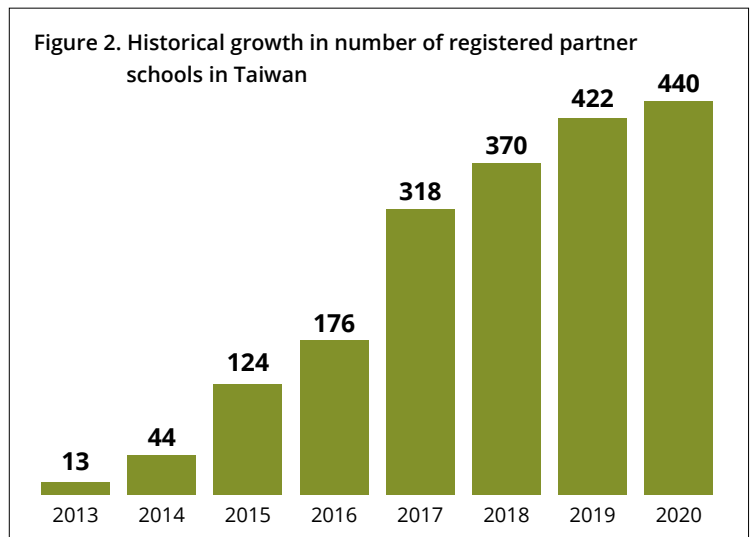
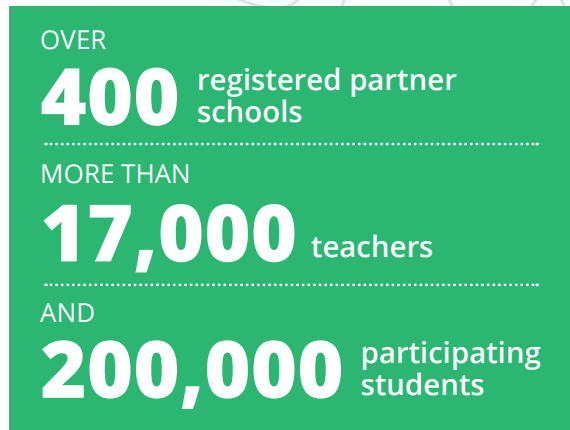
Results

In 2020, after six years of implementation, the program had over 400 registered partner schools (Figure 2), with more than 17,000 teachers and 200,000 students participating. Of the 400 registered partner schools, 292 received recognition at the bronze, silver, or green flag level in 22 cities and counties across Taiwan. Among them, Energy and Consumption and Waste are the most popular Pathways to Sustainability. Many schools in Taiwan have collaborated with the Taiwan Power Company to install solar panels on the rooftops of campus buildings. These panels primarily generate energy to power the campuses, with any surplus energy being fed back to the power company. In addition, in line with the Ministry of Education's Taiwan Green School Partnership Program, schools have gradually replaced traditional lighting with energy-saving lighting. Furthermore, Taiwan has been promoting mandatory garbage sorting and diversified reuse of food waste since 2007, and schools fully cooperate with the garbage sorting and waste recycling policies. These partnerships and policies have all contributed to more schools choosing to implement the Energy and Consumption and Waste pathways.

The results of the survey of practitioners and students and mentoring follow-up showed that:

- Teachers expressed EPP's **positive impact on the school environment, teachers, students, and the community.**
- The program implementers have **a clear understanding of the spirit and sustainability of EPP,** and the positioning of environmental issues.
- The program **inspires and enhances students' environmental awareness and literacy,** and students are enthusiastic about independent learning:
 - Students are actively engaged in various environmental and social issues.
 - Students take the initiative to find the reasons behind problems and solutions.
 - Students are no longer resistant to new things.
 - Students gain a sense of accomplishment and self-assurance.

In the future, EPA Taiwan will collaborate with the Ministry of Education to encourage more schools to join the EPP, greatly expanding the environmental education for sustainable development curriculum in elementary, junior high, and senior high schools in Taiwan.



Lessons learned

In retrospect, the program can be divided into two phases. Phase 1 is the growth phase from 2013 to 2017, and Phase 2 is the plateau phase from 2017 to the present (Figure 2). The number of registered partners in the growth phase rose quickly from 13 in 2013 to 318 in 2017. The fast growth in the number of registered partners can be attributed mainly to the following.

1. Government funding and resources

In the early phases of the program, EPA Taiwan allocated funding and organized many presentations to explain to schools the benefits of the EPP and encourage them to register. To help more schools succeed in implementing the program, EPA Taiwan assembled EPP advisory teams, comprised of teachers from green flag schools and experts in related fields, to share lessons learned with teachers from uncertified schools, and provide opportunities for cross-campus collaboration.

2. International networking

The environmental protection authorities of Taiwan and the United States worked together from 2014 to 2016 to facilitate sister-school matching for 85 schools in the two countries. These schools shared experiences via online courses and visits to each other's campuses (Figure 3). This was a major incentive for many schools to join the program.

Figure 3. Taiwan and US Eco-School students visiting each other



3. Public recognition

To recognize the achievements of partners who actively participate in the EPP, EPA Taiwan has organized an award ceremony at the end of each year since 2016. US EPA and NWF are invited to the ceremony to award medals and certificates to schools with outstanding performance. At the ceremony, posters of each school's results are displayed, and green flag schools are invited to set up booths to showcase their experiences and achievements. In addition, students from the recognized schools offer to give the guests a campus tour of their respective schools and present results from implementing their action plans (Figure 4).

Figure 4. A student-guided tour and the awards ceremony



The EPP faces many challenges in areas such as personnel, funding, resources, and parent participation. However, while most can be overcome with time, the greatest challenge is time itself. The education system in Taiwan confined Eco-Action Teams to conducting activities during lunch breaks or time between classes. However, monitoring activities often require longer intervals for continuous learning. This is a challenge for many schools. As the number of eco-schools increases across Taiwan, EPP staff expect gradual changes in traditional teaching methods that will help teachers and students progress toward a more open and diverse learning environment that better aligns with the spirit of the eco-campus.

Resources

FEE Eco-Schools Program (<https://www.fee.global/eco-schools-1>)

NWF Eco-Schools USA (<https://www.nwf.org/Eco-Schools-USA>)

U.S.-Taiwan Eco-Campus Partnership Program (<https://ecocampus.epa.gov.tw/>)

We welcome any interest in connecting with eco-campus in Taiwan.

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