

# Starting with Education to Address Environmental Challenges (Part 2)

Climate change poses significant threats not only to terrestrial and marine ecosystems but also to societal well-being. To tackle these pressing environmental and social challenges, it is essential to implement diverse and innovative solutions. Education plays a vital role by providing platforms and opportunities for students to explore creative approaches that can catalyse meaningful and positive changes.

Let's take a look at how two schools, recognised with the Outstanding Award in the "2023 Best Green Education Initiative Award", have responded to the United Nations Sustainable Development Goals (SDGs) through their green and innovative education initiatives. Their experiences showcased the potential for addressing environmental and social challenges in transformative ways.



## Education Initiative 1: Soybean Scientific Research Programme in CCASS

[Initiated School: Chiu Chow Association Secondary School]



### Theme

- Soybean Scientific Research
- Climate Change
- Sustainable Agriculture and the Environment



### Learning Objectives

- Develop a school-based curriculum with the theme of "Climate Change", which promote STEAM / Innovation and Technology Education through soybean research projects, allowing students to conduct inquiry-based learning, explore issues related to "food security" and "climate change", and master the knowledge and attitudes of sustainable development and carbon neutrality.
- Through experiential learning activities, cultivate students' positive values such as perseverance, hard work, respect for others, sense of responsibility, and commitment.



### Targets

- CCASS Soybean Scientific Research Ambassadors (A total of 24 F.3 students)
- All F.3 students

## Content

### 1. Leveraging external resources for activity implementation

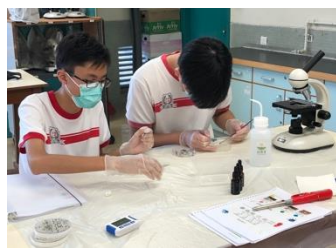
- Cooperated with the social enterprise “Soyvestors” to implement the “Soybean Scientific Research Trial Programme”, expanding soybean research to the school sector.

### 2. Experiential and inquiry-based learning

- Through a variety of experiential and inquiry-based learning activities, students explored soybean cultivation, examining its role in sustainable agriculture and its potential to address both environmental challenges like climate change and social issues such as food crisis.



Gained hands-on experience in the agricultural production process by planting soybeans



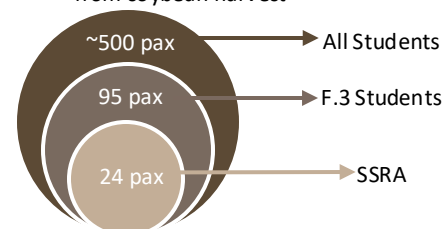
Conducted scientific investigation with different equipment



Made tofu and plant-based meat from soybean harvest

### 3. Empowering student ambassadors

- Established the “CCASS Soybean Scientific Research Ambassadors (SSRA) Team” to further expand the initiative’s influence among all students through the “train-the-trainer” approach.



SSRAs taught soybean cultivation techniques to their classmates



SSRAs shared learning outcome during sharing session



SSRAs cooperated with their respective classes to create presentations or videos to disseminate messages about soybean and climate change to other schoolmates

## Highlights

- The theme of the initiative was clear, and different subject panels (including Biology, Mathematics, Visual Arts, Computer and STEAM, etc.) collaborated to design the school-based curriculum. Using “climate change” as the theme and “soybean” as the entry point, the initiative allowed students to explore the relationship between soybeans and sustainable agriculture while investigate the use of seeds to combat climate change from the perspectives of different subjects, addressing real-life environmental challenges.
- The school leveraged external resources and expertise to implement trial activities, which not only expanded professional knowledge related to soybean research within the school sector, but also deepened students’ understanding of this field.
- The initiative adopted experiential and inquiry-based learning combined with STEAM elements related to Smart Agriculture, enabling students to think critically and solve problems independently through observation and experimentation during the soybean cultivation process.
- The initiative adopted the “train-the-trainer” approach to cultivate student ambassadors, and implemented the “Outstanding CCASS SSRA Award” to encourage students to participate in training as well as related activities and tasks. This helped raise climate change awareness among their classmates and the entire school, further multiplying the programme's influence throughout the school community.

## Education Initiative 2: Seaweed Education Project

[Initiated School: The Harbour School (Secondary Section)]



### Theme

- Marine conservation
- Green innovation



### Learning Objectives

- Utilise seaweed as the main focal point for teaching and investigations to deepen students' understanding of seaweed farming and its potential importance to the environment and climate change mitigation, from which to advocate local sustainable aquaculture.
- Conduct experiments to produce seaweed-based biodegradable plastic, which enable students to brainstorm potential green products derived from seaweed farming, advocating a reduction in single-use plastic.



### Targets

- Grade 8 students



### Content

- The school applied for funding from the Environmental Conservation Fund (ECF) to implement the initiative. Based on the school-based marine science curriculum, four Specialist Teams worked together to provide students with a rich learning experience:

Social Impact and Sustainability Program  
(Responsible for education initiative management)

Marine Science  
Centre

The Foundry

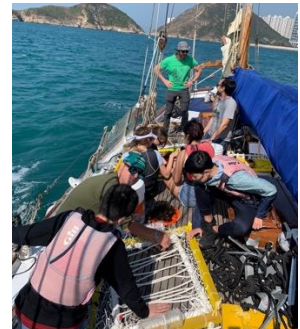
Black Dolphin Sailboat  
(a sailboat used as an  
outdoor classroom)



Delivery of biology lessons on seaweed to deepen students' understanding



Construction of seaweed farm prototypes by students and teachers



Deployment of a total of 17 seaweed farm prototypes

## Content (con'd)

- Students investigated the value of seaweed farming through various experiential activities:



Built seaweed farm by deploying prototypes at Lamma Island and Aberdeen Typhoon Shelter, and conducted biodiversity survey from the seaweed harvested



Conducted experiments on seaweed-based biodegradable plastics

- Programme evaluation was conducted with Grade 8 students. Survey results showed that students' understanding of seaweed has been significantly enhanced:
  - ↑ 83.3% Benefits and uses of seaweeds
  - ↑ 42.5% Different types of seaweed and their roles in the ocean
- The school proactively shared its valuable experiences and achievements in seaweed farming and education with other schools and education institutions to foster professional exchanges.



## Highlights

- The initiative stood out as a comprehensive education project, integrating green innovation, scientific research, marine conservation and climate change across multiple disciplines. It also offered a range of learning and extended activities to enrich students' learning experiences.
- This initiative provided experiential learning opportunities for students to explore innovative strategies for addressing climate change issues, demonstrating a forward-looking approach. It aimed to nurture a generation of environmentally conscious individuals equipped with the knowledge and skills to tackle environmental challenges and make informed decisions about the planet's future.
- The school shared relevant experiences with the schools sector, promoting a sense of community and encouraging knowledge exchange, ultimately inspiring a broader commitment to environmental stewardship and ocean conservation across different educational institutions.

## Summary

Schools serve as valuable platforms for experimentation and exploration, particularly through projects that incorporate various environmental themes and innovative elements. These hands-on experiences enable students to develop a deeper awareness on sustainability challenges while equipping them with practical skills to create innovative green solutions.

Such relevant learning experiences empower students to build a strong foundation for their future professional growth and cultivate them to become proactive environmental advocates. Beyond individual growth, their engagement has a ripple effect, fostering broader community awareness and active participation in sustainable development, ultimately contributing to a more environmentally conscious society.