

# *BIOSPHERE RESERVES FOR ENVIRONMENTAL & ECONOMIC SECURITY*

## *A CLIMATE CHANGE MITIGATION AND ADAPTATION PROGRAMME IN ASIA AND THE PACIFIC*

### *VIET NAM CHAPTER: RED RIVER DELTA BIOSPHERE RESERVE*



# FINAL REPORT

**Project title** Biosphere Reserves for Environmental and Economic Security (BREES): A Climate Change Mitigation and Adaptation Programme in Asia and the Pacific

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# 01 BACKGROUND

Viet Nam's eight biosphere reserves represent an important cross-section of its ecological and cultural diversity while providing economic opportunities to local communities. Communities within biosphere reserves are challenged by the effects of climate change and environmental degradation.

The Intergovernmental Panel on Climate Change identified Viet Nam as one of the countries to be most severely affected by climate change. Due to low-lying characteristics, high population densities and importance for food production, the Mekong Delta is expected to be the most affected region of Viet Nam, followed by the Red River Delta.

The Biosphere Reserves for Environmental and Economic Security (BREES) Programme for Climate Change Mitigation and Adaptation in Asia and the Pacific began successful implementation in Viet Nam at Cat Ba Archipelago Biosphere Reserve in Hai Phong Province. The local community within the biosphere reserve benefitted from cooperation between the UNESCO Regional Science Bureau for Asia and the Pacific based in Jakarta, the UNESCO Office in Viet Nam, the Viet Nam Man and Biosphere National Committee (MAB) and Hai Phong People's Committee.



2011 - Students in Cat Ba Biosphere Reserve plant mangrove trees as part of their Youth Award project

The BREES project in Viet Nam sought to enhance the capacity of communities and management agencies in Cat Ba Biosphere Reserve to adapt to climate change and improve environmental quality. The project fully developed its four main complementary components: i) training of primary school teachers on Teaching and Learning for a Sustainable Future (TLSF), ii) raising awareness about climate change through Community Learning Centres (CLCs), iii) hosting the student competition "Youth for Sustainable Development Awards", and iv) media professional training.

<sup>1</sup> The Intergovernmental Panel on Climate Change. 2007. *Working Group II Report: Impacts Adaptation and Vulnerability*.

<sup>2</sup> MONRE. 2009. *Climate Change and Sea Level Rise Scenarios for Viet Nam*.



2011 - MAB conducts teacher training in Cat Ba Biosphere Reserve

# 02

Building on this successful experience and lessons learned, UNESCO, the Ministry of Education and Training (MOET) and MAB, expanded the BREEES project to the Red River Delta Biosphere Reserve to enhance teachers' capacity, raise awareness of parents and community and support student implementation of school projects in environmental conservation and climate change mitigation.

The Red River Delta Biosphere Reserve is a trans-boundary coastal wetland spread over three provinces: Thai Binh, Ninh Binh and Nam Dinh. The UNESCO BREEES project was located in Nam Dinh Province, which is currently responsible for the management of the biosphere reserve. This management is rotated every five years among the three provinces.



*The Red River Delta Biosphere Reserve is a living space for hundreds of bird species, several of which are endangered*

The Biosphere Reserve is composed of various habitats including mangroves, wetlands, salt marshes, estuaries and beaches with high biodiversity. Over 128,000 people live in the biosphere reserve, mainly in the transition area. It also contains an extremely diverse range of tropical marine and coastal/island ecosystems including mangroves and wetlands with a core zone containing the Xuan Thuy Ramsar site, recognized in 1989 as the first Ramsar site in Viet Nam. Local residents rely on natural resources through farming and fishing for their livelihoods. In the Red River Delta Biosphere Reserve, most people and food production activities are situated in low-lying areas, which are at particular risk of sea level rise and of the increased frequency and intensity of natural disasters, such as typhoons, storms and floods.



*Viet Nam's Red River Delta Biosphere Reserve*

# 03

## EXPECTED RESULTS

**Expected results of the BRES project in the Red River Delta Biosphere Reserve were as follows:**



- Parents and community members have raised their awareness on climate change response and biodiversity conservation with support from Community Learning Centre (CLC) facilitators and enhanced their cooperation with schools to implement practical strategies for responding to climate change.
- 15 teachers and 5 school principals from 5 schools have applied appropriate modules of the Teaching and Learning for a Sustainable Future (TLSF) educational materials and increased their capacities to teach local students about environmental and climate change issues.
- Students have an increased depth of understanding about climate change, biodiversity and environmental issues through development and implementation of school projects in their community that contribute to better environmental awareness and practice.

# 04 OVERVIEW

The implementation of the project was contained in the Letter of Agreement between MOET and UNESCO on their 2013 work plan, so that the results and experience can serve as inputs in the curriculum review process currently being undertaken in the country, specifically in contribution to the inclusion and strengthening of Education for Sustainable Development as a cross-cutting area in the curriculum.



*Students from Giao Thien Lower-Secondary School*

The experience was supported and monitored by three departments within MOET: i) the Department of Science, Technology and Environment (DSTE), as it is responsible for development of content for curriculum; ii) the Department of Teachers and Education Administrators (DTEA), as it oversees activities related to teacher training; and iii) the Continuing Education Department (CED), because of its responsibility for non-formal and informal education, in particular for parents and community members.

Development and implementation of the project has been conducted by MAB, based on their expertise in ESD, their contribution to Viet Nam's education institutions in the areas of climate change response and biodiversity conservation, their support to the management and development of biosphere reserves in Viet Nam while strengthening their role as learning laboratories, and their engagement in Cat Ba BREEES activities.

At the local level, UNESCO, MAB and MOET coordinated the project's implementation with the Nam Dinh Provincial People's Committee, Nam Dinh Provincial Department of Education and Training (DOET) and the Red River Delta Biosphere Reserve Management Board. The Food and Agriculture Organization of the UN in Viet Nam (FAOVN) provided inputs for the definition of project examples shared with teachers and students.

# 05

The following chart includes the summary of main activities:







# DESCRIPTION OF PROJECT IMPLEMENTATION

## Project launching ceremony:

A formal ceremony held in the Red River Delta Biosphere Reserve for the project, launching was attended by local teachers, school principals and Community Learning Centre facilitators as well as representatives from MOET, Nam Dinh Provincial Department of Education and Training (DOET), Giao Thuy District Bureau of Education and Training, Red River Delta Biosphere Reserve Board, Viet Nam Man and Biosphere National Committee (MAB) and UNESCO Viet Nam. Three MOET departments participating in the project were represented at the ceremony: the Department of Teachers and Educational Administrators (DTEA), the Department of Science, Technology and Environment (DSTE) and the Continuing Education Department (CED).



*The BREEES launching ceremony included participants from MAB, MOET, the Nam Dinh Provincial DOET, the Giao Thuy District BOET, the Red River Delta Biosphere Reserve Board, and UNESCO as well as CLC members, teachers and educational administrators from 5 selected schools*

The launching ceremony was an opportunity for the Department of Science, Technology and Environment, MAB and UNESCO to outline the core components of the project, the interlinking roles of the various actors involved and the overall significance of the project.

The widely attended event was a good opportunity for all actors involved, from MOET officials to teachers, to build relationships and develop a sense of communal effort to achieve the aims of the BREEES Initiative.

The event received coverage from Vietnamese print media.



*Speaking at the BREEES launching ceremony, Mr. Le Trong Hung, Vice Director-General of DSTE/MOET stressed that Viet Nam faces significant challenges from the negative impacts of climate change, such as rising sea levels, and commended the various agencies involved for their efforts to successfully come together to jointly tackle this issue through the BREEES Initiative*

## Visit to five participating schools:

Local authorities, led by the Nam Dinh Provincial Department of Education and Training, the Giao Thuy Bureau of Education and Training, the Red River Delta Biosphere Reserve Management Board and UNESCO representatives visited all five schools to meet with students, teachers and principals participating in the project. This provided an important opportunity for the team to get to know those with whom they would be working with closely and to stress, in person, their commitment to supporting them in every stage of the project. The team used these visits to further outline the aims of the BREES project and the central role of the five schools in its implementation. The visits also allowed the team to assess the conditions and surroundings of the schools to understand the varying capacities of each to implement environmental projects. This assessment proved vital later on in the project as it allowed MAB and UNESCO to provide tailored advice to teachers and students on how to best approach development and implementation of their Youth Award projects.



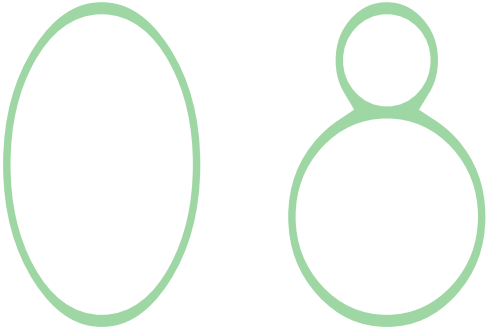
*VOV television crew interviews beneficiaries of the BREES project*

The visits were very well received by school principals, teachers and students, who were enthusiastic to show the team around their schools.

Accompanying the team was a television crew from Voice of Viet Nam (VOV) who documented the occasion and conducted interviews with school principals, teachers, local authorities and the UNESCO Representative to Viet Nam.



*Children from Giao An Primary School*



## Awareness raising for parents and the community

## Training of CLC facilitators:

Five CLCs closest to the participating schools were identified and CLC directors were each requested to select two CLC facilitators.

The 10 CLC facilitators received training throughout a two-day practical workshop, conducted in Xuan Thuy National Park by MAB and supported by a representative of CED/MOET and a UNESCO expert. Participants: i) enhanced their understanding of climate change-related issues and biodiversity conservation, ii) strengthened their ability to integrate the teaching aid 'Understanding and Responding to Climate Change book' (CC book) - produced by UNESCO and MOET - into CLC lessons, iii) enhanced their capacities to incorporate participatory teaching methodologies into CLC lessons, and iv) constructed a lesson plan using the CC book and other teaching aids provided.



*CLC facilitators learn new, participatory teaching methodologies*

The CC book provides learners with a general understanding of climate change causes, impacts and consequences in the Viet Nam context. The book also suggests actions the community can take to respond to climate change and methods to guide communities to prepare plans for responding to climate change in different occupational sectors.

During the workshop, CLC facilitators enhanced their skills to utilize the CC book and the 'Facilitators' Guidebook', developed by MAB, to assist in formulating participatory lesson plans. The tools found in the Facilitators' Guidebook include: i) an exercise for listing 'dos and do nots' relating to human action and climate change, ii) a form for drafting an action plan for natural disaster preparedness and response, and iii) a questionnaire to test the knowledge of community members on topics of climate change and biodiversity conservation. By the end of the training, all facilitators expressed their confidence in using the materials when delivering lessons to the community.



*CLC facilitators identify what they see as the main climate change impacts in their locality*

CLC facilitators were able to demonstrate the knowledge they had gained during the training through the collective development of a lesson plan on climate change issues and biodiversity conservation which they would later deliver to the community. Some highlights of the lesson plan include the use of group work to encourage discussion, educational games to create a relaxed learning atmosphere and questionnaires taken from the facilitator's guidebook to test and develop communities' knowledge of key concepts of climate change and biodiversity conservation.



*Ms. Hoang Thi Ngoc Ha, a CLC training facilitator from MAB, leading group work and discussion*

Guidance from MAB, CED/MOET and UNESCO ensured that the lesson plan utilized foundational concepts found in the CC book and introduced participatory teaching methodologies.

All materials produced for the training by MAB and UNESCO were reviewed and validated by MOET.

#### **Pre-and post-tests completed by facilitators taking part in the workshop showed the following:**

- Other than reading news articles, 6 out of 10 CLC facilitators had not read any material on climate change and biodiversity conservation previous to this training;
- 9 out of 10 had never received any training on climate change;
- 75% wrote that they had learned new skills and facilitation activities that would enhance their ability to conduct future trainings in CLCs;
- 100% of CLC facilitators indicated that, through the training, they increased their knowledge on climate change and how to respond to it in their daily activities and that they now felt more confident developing lesson plans for community members in this area.

*"After the two-day training, I feel like my knowledge has expanded a lot. Though I had learned a bit about these issues from television and newspapers before, this was the first time I had a chance to receive some direct training."*

**CLC facilitator**

## Training of parents and community members by CLC facilitators:

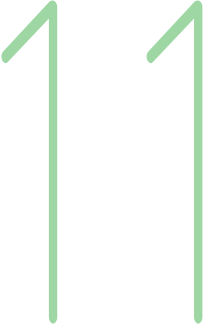
CLC facilitators were able to put participatory teaching methodologies into practice during the delivery of their lesson plan to members of all 5 CLCs which consisted of 45 participants in total, with a diverse range of livelihoods including agriculture and aquaculture farmers and small business owners.



*A CLC facilitator presents and discusses issues of climate change and biodiversity loss with parents and community members*

CLC facilitators led CLC members to discuss concepts such as the greenhouse effect, biodiversity conservation, weather versus climate and climate change adaptation and mitigation. Rather than explaining the in-depth science behind climate change and biodiversity conservation, CLC facilitators found it more effective to teach these concepts by stimulating discussion among the community about the impact of their daily practices on the environment. This methodology not only made it easier for the CLC facilitators to communicate the main message of their lesson plan, but also allowed community members to directly relate to topics of climate change and biodiversity conservation. A comment from one community member illustrated the effectiveness of this teaching strategy by stating, "before the training I knew that switching my motorbike off when stationary would save money but now I understand that this also helps to reduce green house gas emissions and will therefore lessen harm to the environment".

Interactive and participatory teaching methodologies were used by facilitators, including numerous group activities. For example, one activity led participants to identify and post 'dos' and 'do nots' of human action related to climate change on the board. Central to all the day's activities was the opportunity for all participants to give their comments and feedback regarding points and ideas shared by others. Female participants, who were initially reserved and hesitant to contribute, were encouraged to participate in group activities and discussions.



During the training, CLC facilitators led a discussion with parents and community members on their own experiences related to climate change and biodiversity conservation issues, including challenges they face in their daily lives. This discussion resulted in a list of six priority areas that the community felt could be featured in Youth Award proposals to tackle the most problematic issues that affect the community.

**These included:**

- Collect and separate waste to help conserve the local environment and to add to the process of recycling waste in the area;
- Prevent and raise awareness on the improper disposal of rice straw by farmers, including the burning of excess straw from rice cultivation that pollutes the air;
- Gain technical support from energy suppliers to help identify areas in the schools that are particularly wasteful and reduce the consumption of electricity in schools by replacing inefficient equipment;
- Raise awareness in the community about the need to save energy via a student-led campaign;
- Collect used books, notebooks, newspapers, picture books and other waste paper from the community to be used in school and/or community libraries;
- Plant mangrove trees to improve natural sea defences.



*CLC facilitators deliver a lesson plan to parents and community members and apply participatory teaching methods learned in the training sessions*

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The burning of rice straw on farms was discussed at length by the community due to its severe negative impact on the quality of air in the area. All ideas discussed and listed by the community helped students and teachers to create project proposals that followed the criteria of being dependent upon community involvement and relevant to the needs prioritized by the community, thus ensuring interdependence between schools and community when tackling problems of climate change and biodiversity loss.

The one-day training gave the 45 CLC members an appreciation for the importance of sharing experiences on climate change issues and improved their understanding of concepts of climate change and biodiversity conservation.



## Pre-and post-tests completed by parents and community members taking part in the training showed the following:

- 90% had never received any training on climate change;
- 89% of trainees confirmed that disasters such as floods and storms directly impact their families;
- All trainees had taken part in disaster prevention and response activities such as planting mangrove trees, constructing/protecting sea dykes and disaster rescue;
- Before the training, 69% of trainees had an idea of how climate change could harm humans; post-tests showed that following the training this number increased to 100%.

## Teacher training

### Training of teachers:

As a result of a three-day training workshop, conducted by the Secretary General of MAB, with the support of the DTEA/MOET and UNESCO Viet Nam, 15 teachers and 5 school principals: i) improved knowledge on issues of climate change and biodiversity conservation, ii) are better able to integrate issues of climate change and biodiversity conservation into lesson plans and iii) have the skills to implement participatory teaching methodologies in their schools.

Teachers and school principals have an improved understanding of climate change and biodiversity conservation as a result of their training using TLSF, a multimedia teacher education programme covering concepts of sustainable development, effective teaching and learning strategies and interdisciplinary curriculum themes. Of the 27 TLSF modules, 7 of the most relevant to Red River Delta Biosphere Reserve were selected for application by teachers in consultation between DTEA, MAB and UNESCO.

#### These were:

- Understanding sustainable development (Module 2)
- Accepting the challenge (Module 5)
- Citizenship education (Module 7)
- Consumer education (Module 9)
- Women and sustainable development (Module 12)
- Sustainable communities (Module 17)
- Climate change (Module 19)

The above were presented throughout the training, giving teachers and directors an introduction to concepts of climate change and biodiversity conservation and an understanding of how to utilize the other TLSF modules.



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20% of teachers had previously received training on climate change issues and were thus able to pick up the content covered in these modules with relative ease. During group tasks and debates, teachers who had already gained foundational knowledge of climate change provided insightful comments which pushed discussion and therefore helped the whole group grasp key terminologies associated with climate change.

In addition to deepening teachers' understanding of issues concerning climate change and biodiversity conservation, the training enhanced the capacities of teachers to use participatory teaching methodologies in their schools. Using methodologies outlined in TLSF and other materials, teachers gained knowledge of a wide range of different forms of participatory teaching techniques, including: i) new approaches to questions and answers, ii) story-telling, iv) group work, v) role-playing, vi) enquiry learning, vii) mind maps, viii) the use of multimedia, ix) future problem solving, x) educational games, xi) field work, and xii) case studies debate. Teachers were able to practice these teaching techniques which helped to give them an understanding of how certain methods might be used to construct a lesson on climate change and biodiversity conservation.

Groups selected a subject area (e.g. English literature) and an issue (e.g. climate change) from one of the TLSF modules previously outlined and developed a mock lesson plan. They then delivered this lesson, using two or three of the aforementioned teaching methodologies, in front of the whole group. Each presentation stimulated lively debate concerning the extent to which the teaching methodologies selected were feasible, appropriate to the content being covered and whether the concepts of sustainable development were relevant to the subject area chosen. Participants were very willing to discuss the strengths and weaknesses of each other's presentations. Teachers enjoyed and valued this form of peer-to-peer learning which was not limited to this one activity but was used throughout the three-day training, a practice which resulted in many new relationships being formed.

The training methods used by MAB were in themselves examples in the use of interactive and participatory teaching methodologies and included group activities, games, songs, quizzes and inter-group debate, most of which were adapted into the lesson plans teachers later developed. Beyond the content that teachers learned about and integrated into their lessons, they also adopted the participatory teaching methodologies they observed MAB apply during the teacher training.

To further test participatory teaching methods, teachers were asked to critique two example lesson plans: one created by UNESCO and one by a teacher from Cat Ba Island who was involved in previous BREES activities. Participants were asked to critique the content, teaching methodologies used and their appropriateness to their schools using a checklist created by MAB and UNESCO.

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This tool not only served as a way of assessing the knowledge gained during the training but has given teachers an instrument to assist them when they structure lesson plans in the future and will help ensure continued inclusion of TLSF content and participatory teaching methodologies in their lessons.

Fifteen different lesson plans, one created by each teacher, were produced during the training. Experts from DTEA, MAB and UNESCO reviewed the lessons to ensure the quality and relevance of the lesson plans produced. The 15 lesson plans featured numerous participatory teaching methodologies. One lesson plan, for example, used a song about tree-planting, true or false questions, 'if/then' scenario questions and a role-play involving a student acting as a reporter conducting an interview with other students to write a story about climate change and biodiversity conservation.

Based on the review and feedback provided by DTEA, MAB and UNESCO, teachers improved their lesson plans across a broad range of subject areas, including the sciences, social sciences, English language and arts.

Teachers received further feedback by email and phone from DTEA, MAB and UNESCO on how to improve the delivery of lesson plans.

**Before the training, most teachers felt that the contents of Education for Sustainable Development could only be integrated into some subjects, such as geography, biology, citizen education and extra-curricular activities. Following the training on TLSF, teachers indicated they felt these contents could be integrated into any school subject. This is noteworthy given the importance of interdisciplinary teaching.**



*Ms. Bui Thi Kieu Oanh, a biology teacher at Giao Lac Lower-Secondary School, practices the use of a 'Mind Map' exercise*



*Teachers develop their integrated lesson plans, outlining concepts of climate change and biodiversity conservation*



*"Thanks to the training, I now know how important it is to integrate issues of climate change and biodiversity conservation into my lesson plans. From now on I will teach my students about these issues which will give them the knowledge to take actions to protect the environment, conserve biodiversity and respond to climate change."*

**Mr. Trinh Van Luc**  
Literature teacher from  
Giao Thien Lower-Secondary School

The production of individual lesson plans challenged participants. Working hours were long but feedback was positive. As one teacher mentioned, "I am very happy to have been chosen for this project because I have learned a lot so far and I look forward to trying my lesson plan in my class".

#### **Pre-and post-tests of teachers taking part in the training showed the following:**

- 75% of teachers could understand and discuss the concept of 'sustainable development' before the training; this number was raised to 90% following the training;
- 10% of teachers could accurately define the terms 'climate change mitigation and adaption' before the training; this number was raised to over 70% following the training;
- 50% of teachers indicated they felt the school should cooperate with the community in their actions before the training; 90% agreed with this idea following the training.

## Delivery of lesson plans by teachers to students:

DTEA, MAB and UNESCO monitored the delivery of three lessons in each of the five schools by the 15 trained teachers. Subjects included biology, citizen education, literature, English language, ethics and geography. Issues of climate change and biodiversity conservation were integrated into these subjects.

In monitoring lessons' delivery, DTEA, MAB and UNESCO assessed the extent to which teachers were able to: i) integrate TLSF content into their lessons, ii) utilize participatory teaching methodologies, and iii) apply the concepts of climate change and biodiversity conservation in the local context.

Teachers received comments and feedback which was vital to aiding teacher development and helped pinpoint areas for improvement.



*The project team gives feedback to teachers in Giao Thuy A Upper-Secondary School after three lesson plans were delivered and monitored*



*Primary students from class 4A of Giao Thien A Primary School discussing the issue of forest protection*



## Integration of TLSF content:

It was evident that in most cases, teachers were able to stimulate enthusiasm and participation from students, with rapid questions and answers teaching techniques being the most commonly used to engage students and to maintain their involvement in the lessons.

Teachers have been able to integrate concepts of climate change and biodiversity conservation into their lesson plans utilizing a number of resources, in addition to the UNESCO-supplied TLSF, namely data found in subject-specific curriculum textbooks (such as Geography and English), ensuring that TLSF content can be used in parallel to pre-existing and contextualized educational material. This process of merging climate change and biodiversity content with existing curriculum materials has made teachers more comfortable and confident that they are not straying too far from the content used in students' examinations.



## Use of participatory teaching methodologies:

Using the skills acquired during the three-day training workshop, teachers effectively enhanced their teaching methodologies towards a more participatory approach. The 15 teachers who delivered lessons adopted methodologies advocated in TLSF, with the most commonly used being: “experiential learning”, “appropriate assessment” and “community problem solving”.

The majority of teachers demonstrated an increased capacity to use a range of participatory teaching techniques and it was common to feature at least three different techniques in one lesson with rapid questions and answers, group tasks and use of media equipment. Some teachers implemented a broader range of participatory techniques such as interactive games, songs, role play and mind maps which were particularly successful in engaging students with content of climate change and biodiversity conservation.

Teachers were encouraged by the project team to exploit more audiovisual equipment, besides a projector, to ensure that students can benefit from learning materials and develop ICT skills at the same time.



*“Although only three teachers from our school were trained on integrating sustainable development and participatory teaching methods into lessons, we have asked that all teachers adopt the same strategy as much as possible, immediately.”*

**Ms. Hoang Thi Tinh**  
Principal of Giao Thien A Primary School



**Ms. Phung Thi Dung,**  
Geography teacher  
at Giao Thuy A High  
School

*“After the BREES project, my colleagues and I give more attention to integrating sustainable development into lesson plans to raise students’ awareness on environmental issues so they can begin to take action to protect our environment.”*

### **Contextualizing concepts of climate change and biodiversity conservation:**

Teachers demonstrated a good understanding of the linkages between the global issues of climate change and biodiversity conservation at the local level and utilized images and videos related to both local and global problems.

Teachers successfully emphasized this linkage to students and encouraged the sharing of students' experiences to facilitate self-learning and peer-learning and to improve collective awareness of individual, local and global problems caused by climate change and biodiversity loss.



*Ms. Phung Thi Dung, a geography teacher, delivers her lesson, applying new participatory teaching methods*

# 20

## Youth Awards projects

### Orientation session:

Orientation sessions led by MAB in each of the five schools equipped students with a foundational understanding of the challenges created by climate change and biodiversity loss. MAB outlined the purpose and schedule of the Youth Awards and provided a guide on how to complete the project proposal form.

MAB, supported by UNESCO, used interactive and fun activities, such as singing and light-hearted interviews, during the sessions. Students were further engaged via the use of pictures, displayed by a projector, of scenes of deforestation, roadside waste and food markets selling endangered species. Students were encouraged to share their initial reactions to the issues represented in the pictures and to propose potential solutions to the problems shown, an activity of critical thinking that is crucial to creating a successful Youth Award proposal. Building on these reactions, MAB outlined climate change and biodiversity loss and emphasized the importance of communal action to tackle the challenges associated with it.

Students showed great enthusiasm and were encouraged throughout the sessions by MAB who responded accordingly using videos, role-play, prizes and other activities to keep students attentive and engaged during the session.

*"We are here in this orientation lesson today to learn how to protect the environment and I hope that in the future, we'll make our environment cleaner and more beautiful."*

**A student from Giao An Primary School**



*Students from Giao An Primary School in orientation sessions learn about climate change and biodiversity conservation*

Students learned how to complete the Youth Awards proposal form, a process that could determine the difference between a successful proposal and an unsuccessful one. To ensure that students were given the best possible chance of being successful in their project proposals, the project criteria were outlined. **Students learned that the Youth Award projects, and any other actions they may undertake to tackle climate change and biodiversity loss, should involve the local community to ensure priority environmental concerns are targeted.**



*Mr. Nguyen Thanh Cong, an expert from MAB, explains climate change, biodiversity and the Youth Awards to students*

#### **Criteria for school projects include:**

- The project must be original, creative and, most importantly, in line with local conditions for application and implementation.
- The project must contribute to raising awareness among students and surrounding community members on climate change, environmental protection and biodiversity conservation.
- The project implementation strategy must target priority environmental concerns of the local area.
- The project must have a widespread impact with benefits for the community and be feasible to implement. Projects that can be replicated by other schools and communities are strongly encouraged.
- The use of locally available materials and the recycling of waste are encouraged.
- Projects should be sustainable and designed to continue after the BREES programme has finished.



# 22

Using the community's list of six priority environmental concerns, students in the orientation session divided into groups and completed mock project proposals which provided an introduction to the process of brainstorming creative solutions to problems of climate change and biodiversity conservation.



*Students from Gioa Thien A Primary School discuss their mock Youth Award project proposals*

In their groups, students were encouraged to think of possible ideas for a Youth Award proposal and were asked to fill out the proposal forms. Mock proposals were presented by elected group leaders.

Students at the primary level were able to identify major problem areas but struggled to think of innovative ways to tackle them. Methods of garbage disposal and planting trees were the most common ideas to come out of this early drafting session.

To stimulate creativity amongst students, MAB showed a video of an environmental project of another school in Viet Nam which involved gathering data for analysis of solid waste and water pollution in their local area.

Although students felt limited in thinking of creative project ideas, it was still an early stage of the process and the orientation fulfilled its function of familiarizing students with the purpose of the programme and the process of completing the proposal form.

# 2 3

## Project proposals:

Students received initial support from MAB, DTEA and UNESCO with participation from FAO in the form of a guidance tool which included a list of example project ideas and ways of tackling the six environmental problems identified by the community.

This helped stimulate imaginations during the early stages of writing project proposals and gave students a feel for the process of designing projects. They then finalized the project proposal forms, for which they received vital support and guidance from their teachers.

Teachers were supported to help galvanise students to draft creative project ideas.








*Students from Giao Thien Lower-Secondary School share their thoughts on climate change and biodiversity conservation during the orientation session*

# 24

## Feedback to proposals

Once submitted, project proposals were reviewed by a Judging Committee consisting of representatives of DOET, DSTE, DTEA, MAB and UNESCO. The result of this process was the selection of one project from each school to be awarded US\$500 and a set of recommendations to help improve the implementation strategies of each. Projects that received awards were as follows:

-  Giao Thien A Primary School – Organic school vegetable garden
  - Recycling organic waste to produce organic vegetables for school meals to raise awareness of the importance of using natural fertiliser instead of chemical fertiliser.
-  Giao An Primary School – Tree planting
  - Planting trees in and around the school and creating green corners in classrooms to raise awareness of the importance of reducing the negative impacts of greenhouse gases.
-  Giao Lac Lower-Secondary School - Composting straw and bio-waste to produce fertilizer
  - Composting straw discarded by rice farmers to produce environmentally friendly fertiliser to be used by the local agricultural sector. Composted straw to be made available for Giao An and Giao Thien A Primary Schools for their tree planting and vegetable garden projects.
-  Giao Thien Lower-Secondary – Campaign to reduce, reuse and recycle in the area
  - Constructing recycling areas around the community to encourage the recycling of surplus plastic bags and raising awareness of the need for appropriate waste management.
-  Giao Thuy A Upper-Secondary School – Using bio-base when rearing livestock
  - Preparing a mixture of yeast, sawdust, straw and agricultural waste to produce bio-base for family-scale farms, to be laid in pens to absorb animal waste and reduce water run-off, thus reducing water pollution in the area.



*Ms. Phi Ngoc Diep from MAB delivers Youth Award grant for Giao Thien A Primary school to a student representing the school*

The comments of the Judging Committee were vital in guiding students towards appropriate, innovative, feasible, inclusive and sustainable projects and included advice on how to: i) locate adequate materials and local expertise for project implementation, ii) enhance community involvement, iii) incorporate awareness raising activities and iv) ensure that projects are self-sustaining and have the potential to be scaled-up once the BREES Initiative finished.

MAB and UNESCO, with the help of school principals and teachers, identified five local experts, one for each project, to assist students in developing their project work plans and budgets, indentifying appropriate materials and implementing projects.



*Discussion sessions in Giao Lac Lower-Secondary School had involvement of representatives of the Asian Costal Resources Institute-Foundation (CORIN) in Viet Nam and an agriculture cooperative, as well as parents, teachers, students, MAB and UNESCO.*

## Project implementation

*"This has been a great opportunity for school teachers, staff and students to understand the importance of environmental education and the need to engage more with the community to mitigate climate change."*

**Ms. Pham Thi Tuyet, Vice Principal**



### Using bio-base on family-scale farms: sawdust bedding by Giao Thuy Upper Secondary School

*"We have learned lots of new and different skills because of this project. It has been really fun doing these activities which have helped us understand all the things about the environment our teacher has told us in the classroom."*

**Student**

Students have contributed to raising the profile of sustainable farming in Giao Thuy by demonstrating how the use of sawdust bedding can successfully reduce the negative impact of family-scale farming on the environment. To do this, the project team made up of 10 students followed a three-step process to implement the sawdust bedding project on two family-scale farms. The students: i) mixed sawdust with organic waste (mainly from rice farms), ii) stored the mix in a warm environment for two days and iii) distributed the mix around livestock pens. The sawdust bedding mixture produced the desired effect, reducing the need for cleaning the pens which, in turn, reduced the risk of disease and the amount of contaminated run-off usually created during the cleaning process, a particular problem given the lack of adequate water management in the area. A local expert and officer at the Giao Thuy Agricultural Extension Centre, Mr. Phung Van Trung, trained students on how to produce the sawdust bedding mixture and helped them source materials for the project. He has described the student-led project as "a practical approach to educating students about environmental protection which has raised their awareness of local environmental pollution."



*Students collecting husk, one of the materials to be used for the bio-base mixture*

To raise awareness in the community about the positive results of the sawdust bedding initiative, students directly reported to and discussed with the Giao Thuy Agricultural Extension Centre and Giao Thuy Veterinary Medicine Centre (two centres under the administration of the Giao Thuy District Agriculture Department). They also made announcements over the school speaker system, designed and distributed 300 flyers to local farmers and broadcast messages over Giao Thuy district radio. The campaign produced numerous requests from community members for students to help them apply sawdust bedding on more family-scale farms in the area. The project also received attention from members of neighbouring commune Giao Lac who visited the projects to observe and copy the technique.



*Students meet to discuss work plan for project implementation*



*Students visit a pig farm to learn about the impact local farms have on the environment*



*Manure gives off bad odour and can cause disease*



*Students spread chaff around the pen*



*Happy pigs on the sawdust bedding which drastically reduces smell and increases cleanliness*



*Manure is discharged directly into the local environment; this needs to be controlled*



*"I really enjoyed doing the project and helping people understand the harmfulness of plastic waste and working together with them to help our commune become cleaner and better."*

**Student at Giao Thien Lower-Secondary School**



## **Reduce, reuse and recycle campaign by Giao Thien Lower-Secondary School**

Students have made a real and lasting contribution to their community by changing the attitudes and behaviours of local people through a campaign which has drawn attention to the devastating impact of plastic bag waste on the local environment.

Students began by collecting evidence on plastic bag waste through community surveys, interviews and field visits to badly affected areas. The results were analyzed by students and teachers and showed that the use of plastic bags is widespread, with the majority of people admitting to burning or throwing plastic bags into rivers, lakes, roads or other unofficial dumping sites. To combat this problem and to draw attention to the issue, students have raised community



*Students conduct a campaign in the commune market to raise community awareness of the harmfulness of plastic waste*

awareness through regular broadcasts over the Giao Thien radio thus ensuring the campaign's wide reach and impact across the commune. The campaign also targeted one of the root causes of plastic bag waste, the Giao Thien market. With the support of a local pagoda, which helped the students gain permission to use the busiest area of the market to publicize their message, the team conducted presentations and question and answer (Q&A) sessions to encourage shoppers to bring their own bags instead of using plastic bags from the market. The sessions were well attended and benefited from the positive participation of market-goers. Nguyen Van Cong, a parent and village leader, noted that "before the training I just accepted that waste and pollution were a part of daily living, but after the training and having seen the students working, we have realized the harmfulness of waste. I now understand more and want to persuade people in the community to work together to reduce the amount of waste discharged into the environment."



*The "Reduce, reuse and recycle" campaign is launched in school. The student body is asked to support the campaign by promoting the message in the community*



Adults are not the only perpetrators of plastic bag waste in the area so the project team also conducted awareness raising in the school by taking advantage of the monthly flag saluting hour to spread the “reduce, reuse and recycle” message to the wider student body and to encourage them to promote the cause at home and in the community.

In addition to this campaign, students, with support from teachers and the school management board, held a competition for the whole school (900 students) during which several groups designed products that the community could use as alternatives to plastic bags. More than 100 designs were entered, the most creative of which were displayed in the office of the Ho Chi Minh Young Pioneer Organization. The competition was successful in spreading the “reduce, reuse, recycle” message around the school and the community.

The campaign contributed to changing the way local people think about waste management which can be observed in their change of behaviour and in the visible reduction of garbage discharged into the environment.







## Tree planting and environmental corners by Giao An Primary School

*"Some students have told us that their parents were surprised by their knowledge of the environment and one parent even said that their daughter sounded like an expert on the television. I was very emotional when I heard this; it is amazing to have such young children showing older generations the right path."*

**Ms. Tran Kim Dan, Principal**

Primary school students learned about the importance of protecting and restoring the environment through a project that has taken them out of the classroom and into nature. The project saw students, with assistance from parents, community members and teachers, plant trees in and around the school and build 'green corners' in their classrooms. Every classroom now has a corner dedicated to raising awareness for environmental protection. Each corner has potted plants, a poster about environmental conservation and a daily comment mailbox made from recycled material.

Students, with the help of parents and community, transformed the school grounds by planting Royal Poinciana trees and plants which has provided more shade for students to play under, a shield against dust from the nearby road, a more attractive learning environment as well as protection against storms. Huyen, a student in the project team, states that "our district is near the coastline, so we have to plant a lot of trees to protect us from the strong winds and storms." The devastating impact of these storms was realized in April when many of the saplings planted by students were destroyed by a tropical cyclone accompanied by freezing rain on the night of 30 April 2013. Despite this set-back, teachers and community showed their commitment and passion for the project by donating replacement trees to the school. Teachers, community members and mass organizations invested their own money and time to ensure that the students could continue the project. Mr. Tran Van Toan and Mr. Lai Quang Phong, members of the local community, donated three attractive bonsai trees worth 35 million VND (1,650 USD) which were placed at the entrance of the school. In addition to replanting the lost trees, the school management board and teachers are trying to expand the project by seeking permission from local authorities to allow the students to plant more trees along a river bank near the school.

To raise awareness of the community and student body, regular announcements about the project were made over the local radio station and during the school flag saluting hour.

The project has demonstrated the importance of linking schools to their communities in order to build Viet Nam's resilience to the risks and threats posed by climate change, disasters and biodiversity loss.



*Students planting trees with the help of teachers and parents*



Students, together with teachers and parents, plant Royal Poinciana near the school



Mr. Nguyen Cong Ich, communal cultural officer and father of a 6th grade student at Giao An, broadcasts messages written by the students on project progress.



Launching the tree planting project at the school flag saluting hour



Greening the school corridors



Students draw pictures on tree planting



Students plant medicinal plants in the school garden



## Composting organic waste to produce natural fertilizer by Giao Lac Lower-Secondary School



*The organic waste was covered with plastic sheets and left to bio-degrade*

The atmospheric pollution caused by the widespread burning of agricultural waste is a major environmental challenge faced by many communities in the Red River Delta and throughout Viet Nam. Students chose to tackle this issue head on by offering a viable and sustainable alternative to farmers who engage in this practice and in doing so have increased communities' awareness on the issue.

Students decided to turn what has traditionally been seen by farmers as "waste" into a rich and abundant fertiliser by turning the organic waste left over from rice harvesting into natural fertiliser through composting. This has not only served to combat the issue of atmospheric pollution but has also offered an alternative to using chemical fertiliser which is commonly applied by local farmers and is known to have negative health and environmental impacts.



*"It was funny at the beginning when we tried to persuade adults to pay attention to our project. They were not very interested to begin with but we continued to persuade them and told them the benefits of using natural fertiliser and how easy it is to make."*

**Student**

Before setting about this task, the project team went on a fact-finding mission which involved interviewing 36 community members to learn about the types of fertiliser used by local farmers, the harmful effects of chemical fertilisers on people and the environment, the level of awareness of local people on the benefits of composting and how to handle organic waste. Using what they learned, students, with the support of teachers, community members and experts, underwent a five step process to complete the composting. They i) collected organic waste, ii) conducted research to find the best and most appropriate probiotics for composting, iii) mixed probiotics with the waste, iv) piled the mix in a sun-exposed area and covered it with sheets of plastic to achieve a temperature of 40-50 °C for incubation and, v) regularly monitored the compost, turning it when needed. Parents and community provided vital assistance throughout, helping students with the physical process of collecting organic waste. Nguyen Phuong Thao, Director of the Giao Thien Mushroom Cooperative, has been producing organic fertiliser for 15 years and agreed to provide his expertise to the students. He gave invaluable technical guidance throughout the project, helping to supply students with materials and probiotics and achieve the necessary incubation temperature. Mr. Thao has shown great enthusiasm towards this form of education and said that "this method of environmental education is very good, not only for students, but also for parents and village members because it has got everyone interested. When we went to the school to help the students, there were so many people there wanting to watch us work. "

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Students conducted a comprehensive campaign to spread their message as far as possible by broadcasting project activities over the local radio station, publicising the project in Community Learning Centres (CLCs), creating a school billboard on sustainable farming, distributing a brochure around the community on the harmful effects of burning agricultural waste and using the flag saluting hour to raise student awareness on the negative impacts of unsustainable agriculture on the environment.



*Ms. Hoang Thi Khuy, a member of the community who supported the project, states that the project has made her "aware of the benefits of composting and [she] will apply this method at my home to utilize waste straw and produce compost for taking care of my trees."*

The project has produced a multitude of benefits for both students and the community by giving students a practical learning experience on the importance of environmental protection while empowering them to contribute to their community's sustainable future. Local farmers have raised their awareness on the negative impacts of their unsustainable farming practices and have been provided with a viable alternative to using chemical fertilisers on their crops.

The students' long-term goal would be to sell their natural fertiliser to local farmers. Mr. Nguyen Xuan Thuan, from the Asian Coastal Resources Institute-Foundation (CORIN), who has been helping the local community build profitable enterprises, is ready to assist students to make their project commercially viable.

*"I have found out that this composted fertiliser has better effects on plants than chemical fertiliser. I have quite a large field of rice and I will use this composting method to produce fertiliser for my family's field."*

**Mr. Tran Van Tung and his wife, grandparents of school children**



*Students prepare organic waste for composting*



*Ms. Tran Thi Hang, the local commune's radio broadcaster, reads an article written by a student on the organic waste composting project.*

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## Organic vegetable garden by Giao Thien A Primary School

Many students from Giao Thien A Primary School are aware of the impact of the widespread use of chemical fertiliser on farms which has polluted waterways and contaminated produce, thus damaging the environment and health of local people. To tackle this problem, students decided to develop their own organic vegetable garden to show their parents and community just how easy and beneficial sustainable farming can be.

Students showed great enthusiasm when planting their organic vegetable garden and were actively involved in preparing the soil, planting seeds and maintaining the garden. The garden has been planted in the central courtyard of the school to increase the visibility of the project and to stimulate interest from the whole student body. A local expert, Mr. Mai Van Hao, used his experience in small-scale farming to help students produce natural fertiliser for the garden. Given the age of the students (10-11 years old), support from Mr. Hao, teachers and 10 parents proved particularly important during the early stages of the project. For example, they helped move fertile soil, often from their own homes, to the school garden and helped students plough and prepare vegetable rows. Community participation was vital for both the students and adults who enjoyed being actively involved in their children's learning experience. They also came away from the experience with a greater appreciation for organic farming and environmental best practices. One school parent commented that "although I had heard of organic farming I had never taken it seriously, but now, having seen the kids working in their garden and producing great looking vegetables without using pesticides, I can see the real benefit of this method."



*"I took some organic vegetables home for dinner and my parents loved it very much. They decided we should grow organic vegetables in our garden."*

**Student**

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Students were able to harvest their fresh produce and take it home for cooking which gave students great satisfaction and helped further promote their message at home and in the wider community.

In addition to promoting the practice of organic farming in the community, the project team implemented an effective awareness raising campaign in the school by distributing posters about the need for planting clean and organic vegetables and by using the flag saluting hour to regularly update the student body on project activities and to urge them to participate in the maintenance of the garden. The campaign was successful as many students became actively involved in supporting the project team in the daily maintenance of the garden and as a result became aware of the benefits of organic farming and the negative impacts of using chemical fertilisers to grow vegetables.



*Students made posters to raise awareness on the need for planting clean and organic vegetables*



*Students visit the vegetable garden of Mr. Thu, a community member, to learn about different types of vegetables and to practice gardening skills*

Going forward, the school principal, Ms. Hoang Thi Tinh, hopes that next year there will be a chance for Giao Thien A Primary School to team up with Giao Lac Secondary School: "We would like to use the natural fertiliser made by Giao Lac Secondary School to grow our organic vegetables."

By the end of the project, students demonstrated a solid understanding of the purpose and significance of acting sustainably and showed great enjoyment from learning in and from nature.

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*Clearing a space in the school yard to prepare it for planting*

*"Students were very enthusiastic throughout the project. The leader of the group has been early to school most days to tend to the garden and has been motivating her friends to weed and water the vegetables every day."*

**Nguyen Thi Ngat, teacher**



*Planting vegetables*



*Students lay fertile soil*



*The project team, with support from fellow students, water and maintain the vegetable garden*

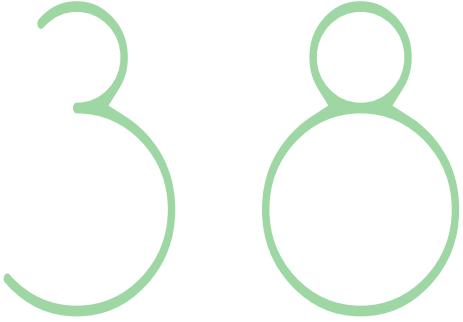
### Midterm review

Half way through project implementation MOET, MAB and UNESCO travelled to the Red River Delta to conduct a mid-term review to monitor the progress of all five projects and to identify areas where the schools might require additional support. The team used a questionnaire to assess: i) beneficiaries' ability to relate what they had learned during the trainings; ii) the steps of project implementation thus far; iii) logistical details related to project implementation, for example, materials used and location identified; and iv) major obstacles they were facing at the time. The results were positive as summarized below:

- The five students interviewed from each school were able to describe the implementation strategy and purpose of their projects;
- Teachers were able to clearly describe their role in guiding and coordinating the logistics of the projects;
- Community members were able to outline their involvement in the projects, highlighting their role in supplying the necessary materials for project implementation, the technical expertise to complete the various steps of each project and physical labour during certain stages of project implementation.

The mid-term review highlighted some areas, in some schools more than others, where beneficiaries required additional support. This information was vital to MAB, UNESCO and MOET who responded accordingly. One example of this response was the recruitment of local experts from the community to provide each school with the expertise and logistical support to ensure the successful completion of each project.





## Final event

The final workshop and closing ceremony for the BREES Initiative took place in the city of Nam Dinh. The closing ceremony was attended by 44 participants including students, teachers, principals, vice principals and community members as well as local media professionals and distinguished representatives from various departments of the Ministry of Education and Training, the Nam Dinh Province Department of Education and Training, the Viet Nam MAB National Committee and UNESCO Viet Nam.

The ceremony provided an opportunity for representatives from the five schools in the Red River Delta to share their experiences and thoughts on the BREES educational model and how it has enabled students, parents, teachers, and communities to take decisive action to respond to the growing challenges of climate change in their locality. During the workshop, students made presentations on the overall experience and achievements of their projects' implementation while teachers provided an outline of guidelines and recommendations on how to enhance continuing project activities and replicate future project endeavours.

National and provincial authorities discussed ways to sustain, develop and expand the environmental projects to other schools in the province while speaking about the successes of the BREES Initiative. Mr. Nguyen Van Tuan, Director of the Department of Education and Training of Nam Dinh Province, highlighted that the BREES initiative was a good opportunity for students, schools, community members and authorities to raise their own awareness and improve their skills and knowledge on how to preserve the environment while raising awareness of the others at the same time.

The Initiative was further praised for its intersectoral and multi-stakeholder design, linking and raising the awareness of a wide range of actors such as students, community members, government officials, local experts, broadcasters and others to enhance local knowledge, skills and ownership and ensure the sustainability of Initiative activities.



Students receive certificates, presented by DOET and MOET as well as MAB Viet Nam and UNESCO representatives, recognizing the achievements of their school projects



*"With the many achievements of the BREES Initiative, replication in Nam Dinh and other provinces would benefit every school nationwide."*

**Mr. Nguyen Van Tuan, Director of the Department of Education and Training of Nam Dinh Province**



*"This programme focuses on the importance of environmental security in communities, the country, and globally. Replicating the successes of the BREES Initiative and mainstreaming the programme into school curriculum should be a priority."*

**Mr. Do Huu Chi, CLC facilitator from Giao Lac Commune**



*"We have seen many positive contributions to the management of the site since the launching of the BREES Initiative. There are significant linkages between preserving intangible cultural heritage and environmental education within the community."*

**Mr. Nguyen Viet Cach, Director of the Management Board of the Red River Delta Biosphere Reserve**



*"The Initiative should be replicated in every province. Students of every age, even kindergarten, can make a difference. Nobody is too young to understand and care about the environment."*

**Mr. Nguyen Phuong Thao, Director of the Giao Thien Mushroom Cooperative**



**Mr. Nguyen Xuan Thuan, from the Asian Coastal Resources Institute-Foundation (CORIN).**

*CORIN has a strong presence in the Red River Delta Biosphere Reserve and assists the local community in developing local enterprises. Throughout the implementation of the initiative, they provided technical support to students during the planning and implementation phases of their projects, focusing on how to ensure project sustainability. They also facilitated interaction and information-sharing between students and local organizations and experts.*



**Le Trong Hung, Vice-Director of the Department of Science, Technology and Environment (DSTE),** stated that cooperation between different stakeholders, including MOET, DOET, schools, their communities and the Xuan Thuy National Park was a key factor in ensuring the sustainability of the project. Both the schools and their communities gain from close cooperation and local authorities can strengthen this relationship by supporting similar activities as the ones implemented under the BRES Initiative.



**Dr. Tri, Secretary General of Viet Nam Man and Biosphere Programme (MAB),** highlighted that the Biosphere Reserves should be widely used as laboratories to educate and bring together youth and their communities. It is through the participation in such projects that Biosphere Reserves can play a significant role and receive support from local communities.



**Mr. Trinh Van Luc, a teacher at Giao Thien Lower-Secondary School**, stated he understood the importance of reaching students and providing them with essential knowledge on issues related to environmental protection. To do so, he provided students with opportunities to take part in extra-curricular activities, such as observing waste dumping sites around the school and market. When they were directly confronted with the situation, students recognized the urgency to intervene and decided to advocate for the reduction of the use of plastic bags as well as for safe waste disposal.



**Ms. Dang Thi Tham from Giao Lac Lower-Secondary School** spoke about the project implemented by her school stating: "The burning of the straw had an impact on the health of students and the community, so we thought about using it for compost. The compost we produce helped us to take care of our own trees at the school, as well as the vegetable garden. We established a Communication Group that interviewed 26 community members, did a broadcast on the local radio station, and published a leaflet to advocate for the use of compost straw. Students now better understand the importance of this activity and have even educated their parents on how to change their behavior."



**In Giao Thuy Upper-Secondary School, Ms. Phung Thi Dung** used flexible methodologies and a learner-centered approach through group discussions, mapping and presentations to support her students to develop a model of organic bedding for livestock. Ms. Dung highlighted the success of their initiative, with initial results showing a reduction of air pollution, increased energy savings and a reduction of water use. Once these results were communicated to the community, many families replicated the model in their own home. The success of the project was encouraging to students, who have since expressed their willingness to get involved in other activities advocating for environmental protection in their community.



**Ms. Nguyen Thi Ngat, a teacher at Giao Thien A Upper-Secondary School,** highlighted the importance of using integrated teaching methodologies and learning approaches to ensure that students are fully aware of the issues that directly concern them. Ms. Ngat noted that students can now promote good practices and oppose actions which have negative consequences for the environment both at school and at home. Using the Biosphere Reserve as a learning laboratory is very useful to raise the awareness of the community as it can help us focus on identifying issues directly threatening the local community.



**Ms. Pham Thi Huong, a teacher at Giao An Primary School,** highlighted that she is now aware of her responsibility to bring new knowledge to her students and is renovating her delivery of lessons by mainstreaming environmental protection and involving students more in the learning process. During the final event, Ms. Huong stated that "thanks to the training I received, I now have the ability to do a better job, see my students take more initiative and improve their living and learning environment".

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*Student Nguyen Khanh Duy from Giao Thuy A High School speaks about the benefits of using sawdust bedding in household livestock breeding and care*



*Student Tran The Anh from Giao Thien A Primary School presents the students' experiences developing an organic vegetable garden*



*Student Do Thai Nam from Giao An Primary School talks about planting trees in the school garden and of the green corners*



*Student Dinh Thi Huyen from Giao Thien Secondary School discusses plastic bag use reduction in Giao Thien commune*



*Student Nguyen Thi Hoa from Giao Lac Secondary presents the schools' successes in composting fertilizer from straw and organic rubbish*

FINAL REPORT

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Giao Thien Secondary School



Giao Thien A Primary School



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Giao An Primary School



Giao Lac Secondary School



FINAL REPORT



**Giao Thuy A  
Upper Secondary School**



**CLC Facilitators**





# RESULTS ACHIEVED

## Community

### Expected Results

*Community Learning Centre (CLC) facilitators have raised awareness of parents and community members on climate change response and biodiversity conservation and enhanced their cooperation with schools to implement practical strategies for responding to climate change.*

### Achievements

Training materials to train 10 CLC facilitators and a facilitators' guidebook for use in training community members were produced. Ten CLC facilitators were trained to conduct climate change response and biodiversity/environmental conservation awareness raising activities for parents and community. The facilitators developed a lesson plan to be used during their training of parents and community. The monitoring of the training was facilitated by the Ministry of Education and Training and UNESCO.

Awareness raising training by 10 trained CLC facilitators for 45 parents and community members of 5 CLCs on climate change and biodiversity/environmental conservation was delivered. Specific climate change and biodiversity/environmental challenges in their locality were identified by community members during the training. These challenges served as a reference for students of 5 local schools to identify potential areas that could be addressed by Youth Awards projects.

## Teachers

*Fifteen teachers and 5 school principals from 5 schools in Red River Delta Biosphere Reserve have applied the appropriate modules of TLSF and increased their capacity to teach local students about climate change issues and biodiversity conservation.*

Fifteen teachers and 5 school principals from 5 participating schools were trained on climate change and biodiversity/environmental conservation. Teacher training focused on enhancing teachers' capacities to deliver lessons in the above subjects, as well as in participatory teaching methodologies and development of lesson plans. Training also covered the purpose of the Youth Awards and teachers' roles in assisting students for Youth Award projects' development and implementation with support from local community. After the monitoring of lessons' delivery, teachers received feedback from MOET, MAB and UNESCO.

Teachers delivered lessons to students, incorporating inputs from community awareness raising training by CLC facilitators on practical actions students can carry out as a part of Youth Awards component.

## Students

*Students in Red River Delta Biosphere Reserve have an increased depth of understanding about climate change, biodiversity and environmental issues through the development and implementation of activities in their community or school contributing to better environmental awareness and practice.*

Students received lessons on climate change and biodiversity/environmental conservation from their trained teachers. Students received orientation on the Youth Awards and guidance on how to prepare project proposals. The five best project proposals, one for each school, were selected from a total of 19 proposals and each awarded a grant of US\$500. With support of identified local expertise (community members, parents, an agriculture cooperative and the district Bureau of Agriculture) students implemented their projects.

In addition to regular monitoring of project progress, a mid-term review of the five projects was conducted and feedback and additional support were provided where needed. A final event was carried out for schools to share experiences with each other and to engage authorities in order to promote more environmental education in policy making.



# LESSONS LEARNED



- ✿ Nam Dinh Province has been an ideal location to implement the BREES Initiative, as provincial and local authorities, community members, parents, students, teachers and school principals are aware of, and directly affected by the effects of climate change and biodiversity loss. As a result, trainings and project activities have been well received by beneficiaries who have been enthusiastic to participate, learn and contribute.
- ✿ The capacities of the various age-groups involved in the Youth Awards, from primary to lower-secondary to higher-secondary, differed, which was a challenge for MAB and UNESCO, and other implementing partners, to provide support tailored to the needs of each school.
- ✿ Working with community members and parents to identify priority environmental challenges in the locality was central to narrowing down challenges for the schools to tackle through their projects. This process also fostered an appreciation for community-school interdependence when tackling climate change and biodiversity loss, two areas of interest for both community and schools.
- ✿ The guidance tool for preparation of projects was beneficial to all age-groups. This list of project ideas provided in the tool gave the necessary input to students who were struggling to draft proposals, an activity which they were carrying out for the first time. Many of the example projects listed in this tool addressed the environmental challenges identified by the community which helped to ensure that project proposals met the criteria of community involvement and directly tackled the most pressing environmental concerns in the area.
- ✿ Spreading the messages through local broadcasting in the community was key to integrating schools and surrounding communities and to raise awareness beyond the school grounds.

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- ✿ Some students were keen to implement activities such as rice straw composting, although the timing of this project did not coincide with the harvest season. Students responded to this by deciding to purchase stored straw and collecting other organic waste from the community for the first phase of the project. They still plan to contribute to the collection of rice straw from farmers during the summer harvest to compost it as well, preventing it from being burned as would typically be the case.
- ✿ Teachers taking part in these activities were constrained by curriculum obligations, namely their requirement to prepare students for examinations at the end of May. Thanks to the teachers' commitment and enthusiasm for the project, despite their busy schedules, combined with additional support from MAB and UNESCO than was originally anticipated, this did not negatively impact attainment of desired results. In future projects, it should be noted that implementing activities that coincide with exam periods places a heavy burden on teachers.
- ✿ CLC facilitators decided that, based on their experience, they needed to tailor the training for local communities by using less complex scientific language and focusing on more practical, day-to-day behaviours of the community to teach the content.

## **Monitoring and reporting team**

UNESCO and MAB have monitored every stage of the project and registered information throughout. This has been critical in identifying risks and challenges to successful implementation and responding to them as they arise. Such regular monitoring has been particularly helpful given the large number of activities, which must happen in sequence, and the tight timeframe for project implementation.

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## SUSTAINABILITY

-  As an official activity in MOET's work plan with UNESCO, BREES serves as a practical reference for the renovation of the country's curriculum through 2015 by showing concrete examples of good practices in incorporating Education for Sustainable Development in school and extra-curricular activities, and in linking communities to schools in tackling sustainable development challenges through practical activities.
-  Raising awareness of community, parents, school principals, teachers and students, as well the joint implementation of environmental projects by the community and schools has begun to change attitudes towards coordinated and practical strategies for responding to climate change. Schools and community are aware of the importance and feasibility of taking joint action to build not only immediate resilience to the effects of climate change and biodiversity loss, but also to instil a mind-set among future generations to take action to protect Viet Nam's natural resources in the long-term.
-  The youth projects have encouraged a long-term approach to tackling climate change and biodiversity loss and the five projects implemented were designed to continue after the BREES project is completed in Nam Dinh.
-  Teachers and CLC facilitators are now equipped with teaching materials, aids and skills to continue raising awareness of students and community on issues of climate change and biodiversity conservation. School principals and vice principals had their awareness raised and can continue to motivate implementation of activities in schools.
-  The BREES project will have benefits beyond Nam Dinh Province and the Red River Delta. Results of the implementation of the BREES programme in the Red River Delta will be shared with relevant partners, potential donors and other biosphere reserves to serve as a model for future implementation in other locations. The project experience is shared through the Asian Green Network of Biosphere Reserves and World Natural Heritage Sites.
-  The results of this project are a concrete contribution towards the production of e-learning teacher training courses that MOET and UNESCO are working on in the Education for Sustainable Development related areas of biodiversity conservation, climate change mitigation and adaptation and disaster risk reduction, which will be made available to all teachers in Viet Nam.
-  Lessons learned in the BREES project also benefit the implementation of the Ministry of Education and Training, UNESCO and Samsung Education for Sustainable Development Initiative, which will involve the development and harmonization of community action plans and school preparedness plans to respond to the challenges of climate change, disasters and biodiversity loss.



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