

Panama

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- **Organization and Number of Personnel:**

Ministry of Education - National Directorate of Environmental Education

Number of Staff: 10 people

- **Funding by:**

The activities and projects that have been developed for the implementation of the GLOBE Program protocols are funded by the Ministry of Education.

- **Cooperating Organizations/Individuals:**

Public Institutions: Ministry of Health, Ministry of Environment, Panama Canal Authority, Ombudsman's Office, Aquatic Resources Authority, others.

Organizations: Metropolitan Natural Park, Chagres National Park Foundation, City of Knowledge Foundation, Moviendo Vidas Foundation, Non-profit organizations, UNESCO, Wetlands International, Panama Audubon Society Panama,

- **GLOBE Schools:**

1. **Boquerón Abajo School:** Educational center located in the Boquerón River sub-basin, carries out conservation projects with the Chagres National Park and is part of the 159 educational centers in the Panama Canal Watershed that are part of the Canal Watershed Guardians Program. This educational center was provided with supplies and equipment for the development of hydrosphere and atmosphere protocols. In addition, Fundación Natura provided support for the implementation of the mosquito protocol, and with the equipment supplied, they were able to begin data collection.

ANNUAL REPORT 2022 - 2023

- GLOBE Protocol areas:

1. **Mosquito Habitats** in more than 50 educational centers through the Mosquito Hunters project. Activities are developed from preschool onwards and tools were provided to enable teachers to develop the protocol workshops.
2. **Atmosphere and Hydrosphere Protocol:** Boquerón Abajo School, Colón, El Espavé School, Sajalices School and El Líbano School have been included in the pilot project for the installation of a small meteorological station to work on measurements and comparisons between the Chame Bay Mangrove and Panama Bay Mangrove.

- Number of schools that reported data during the past year:

For the year 2022-2023 data was registered in the platform regarding the tree campaign, however, we must make adjustments as teachers have registered data as citizens and not as teachers. We are still in the call for more schools to activate other protocols of the GLOBE program.

Program implementation, international cooperation in the GLOBE network and activities during the past year (categorized by objectives of the GLOBE Strategic Plan 2018-2023).

- Education

1. Training for GLOBE teachers: an induction day was held for 20 teachers and non-profit organizations to provide them with access to the benefits offered by the GLOBE program platform.



2. Education for Sustainable Development:

This project becomes a Public Policy that establishes the Guidelines for the implementation of education for sustainable development programs in educational centers for the strengthening of capacities in education that facilitate educators, to understand the transcendence of educational transformation from ESD. In this sense, ESD incorporates the environment, the economy and society into the educational process from a holistic approach (Whole School Approach), to meet the Sustainable Development Goals (SDGs)-Agenda 2030, in particular SDG4: "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030".

Supported by the Ester Platform of the Ministry of Education, a virtual course and a MOOC have been developed to include content from the GLOBE Program protocols that are aligned with Education for Sustainable Development, taking advantage of our environment to learn in a more comprehensive way.

3. Commemoration of D-Day for the eradication of mosquito breeding sites.

A training day was held for 20 teachers from 7 educational centers to include them in the GLOBE program and the execution of the Mosquito Protocol. The participating teachers were given tools and instruments for the execution of these protocols (magnifying glasses).



<http://www.educapanama.edu.pa/?q=educasitio/direccion-educacion-ambiental/dia-d-y-jornada-de-capacitacion-de-protocolo-de-mosquitos-e>

- **Science:**

1. **Mosquito Hunting:** The Mosquito Hunting Project is being developed in more than 50 educational centers in conjunction with the Ministry of Health, as part of the anti-Aedes campaigns, for the elimination of breeding sites of vectors that transmit diseases such as Dengue, Zika and Chikungunya.

The Mosquito Hunters are student groups from educational centers that identify breeding sites and potential mosquitoes that transmit diseases; all this with the objective of developing, from the hydrosphere protocols, the mosquito protocol for the identification of eggs, larvae, pupae and their characteristics in adult stage as part of the dengue prevention campaigns, which, at the moment, is the most common disease transmitted by the *Aedes aegypti* mosquito in Panama



2. **Graduate Program for the Reforestation of Panama**

Panama implements policies in line with the adaptation and mitigation of climate change, so the Graduates for the Reforestation of Panama Program was created, which seeks to promote the culture of conservation of ecosystems. Law 243 of October 13, 2021, which designates the graduating students of the country to plant a minimum of five seedlings.





3. **Plant Your Tree Panama:** strengthens partnerships with foundations that support projects that seek to maintain and preserve the biodiversity of different areas of the country, especially those areas where vegetation cover has been lost due to the development of agricultural activities, logging for timber as a means of subsistence, among others. This project is covered by the. In this way, an important starting point is established to give continuity to these reforested areas with the following generations.

4. **Conversation with the Hurricane Hunters**

Students from different educational centers participated in the conversation with the Hurricane Hunters whose objective was to offer the opportunity to learn about hurricanes, reduce the vulnerability of the communities and encourage them to be prepared for these events generated by atmospheric phenomena. <http://www.educapanama.edu.pa/?q=educasitio/direccion-educacion-ambiental/conversatorio-en-vivo-con-los-cazadores-de-huracanes>

• **Community**

1. **Guardians of the ACP Watershed:** This program, which serves 159 educational centers, is successfully maintained and develops environmental education programs, promoting conservation, entrepreneurship and collaborative work, through a Cooperation Agreement between the ACP and the Ministry of Education. Projects related to vegetation cover, trees, clouds, measuring the amount of precipitation, among others. These are programs that include the participation of the communities surrounding the Panama Canal watershed with the objective of keeping the population informed and aware of the importance of the resources that surround them, not only as part of the Canal, but also as a benefit for their communities.



2. **National Wetlands Conservation Program:**

the aim is to raise awareness and sensitize the educational community in general about the importance of promoting the conservation of these ecosystems that are home to a large number of marine and coastal species, provide protection from natural events, and generate a large amount of moisture for the planet, thus reducing the impact of climate change.

3. The students, together with their teachers, are in charge of maintaining their

mangrove propagules nurseries and once they are ready, they coordinate planting days. Currently, the planting days are carried out in four areas of the country, mainly

ANNUAL REPORT 2022 - 2023

Chame Bay, Panama Bay and the Chiriqui area, achieving to plant around 55 hectares in the year 2023.

4. **Weather Station Pilot Plan**

Visits were made to the El Espavé, El Líbano and Sajalices schools to present the pilot plan that aims to make a comparison of the Chamer Bay and Panama Bay. This project seeks the installation of meteorological stations in each educational center for the implementation of the GLOBE Program's Atmosphere Protocol. Support is provided to these educational centers with 9 specialists in the scientific area, for data collection and to generate learning in students and teachers, as well as support from the team of the International Center for Sustainable Development.



• **Communication**

1. **Celebration of environmental dates:** Activities have been developed to commemorate environmental dates, such as environmental education day, wetlands day, earth day, mangrove ecosystem defense day, soil desertification day, water day, mangrove day, tree day, among others.



2. **Water Culture Program:** A program developed jointly with different institutions at the national level, in which each one, from its own sphere, develops actions to promote the rational use of the resource, disseminate existing regulations, among others. The Ministry of Education has initiated an awareness campaign and training sessions for teachers through a

ANNUAL REPORT 2022 - 2023

diploma course. This project has been developed in alliance with state institutions and non-profit organizations.

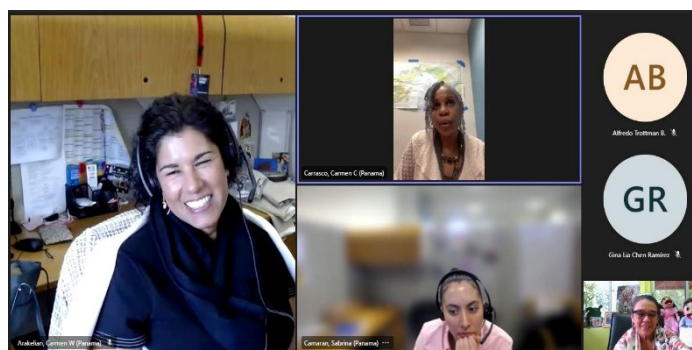
3. **Promotion of the Tree Campaign:**

The meeting of successful experiences was held where the GLOBE program was represented by Professor Guillermo Fadull, from the Panama Norte Institute with the purpose of presenting to 300 teachers the benefits of being a GLOBE teacher, as well as extending a cordial invitation to participate in the tree campaign. A media promotion was also carried out in order to sensitize the population in general about the importance of this campaign.

4. **Coordination Meetings with the U.S. Embassy in Panama Team**

In order to coordinate actions for the implementation of the GLOBE Program in Panama, we have met with personnel from the United States Embassy in Panama. Among the topics discussed were the coordination for the Regional Meeting 2023 to be held in Panama on April 17 and August 21.

On April 30, we also held a coordination meeting for the development of the Mosquito workshop to be held on June 26.



Plans and ideas for the following year:

By the first quarter of the year 2024, it is expected to increase the educational centers that collect scientific data mainly in the use of the Mosquito Habitats, Clouds and Atmosphere protocols through projects with focus in accordance with the GLOBE Program approach and the current laws of Education for Sustainable Development.

By the second quarter of 2024, strengthen educational centers with tools and instruments that allow them to implement the GLOBE program protocols.