

PANAMÁ

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- **Organization and Number of Personnel:**

Ministerio de Educación – Dirección Nacional de Educación Ambiental

Number of Staff: 12 people

- **Funding by:**

At present, the activities and projects developed within the framework of the GLOBE Program are financed by the Ministry of Education.

- **Cooperating organizations/individuals:**

Public Institutions: Ministerio de Salud, Ministerio de Ambiente, Autoridad del Canal de Panamá, Autoridad de los Recursos Acuáticos, otros.

Organizations: Parque Natural Metropolitano, Fundación Ciudad del Saber, Fundación Moviendo Vidas.

ONG's: UNESCO, Wetlands,

- **GLOBE schools:**

1. Escuela Boquerón Abajo: 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. This educational center was provided with supplies and equipment for the development of hydrosphere and atmosphere protocols. In addition, training was provided by the U.S. embassy so that, with the equipment supplied, they could begin data collection.

- GLOBE Protocol Areas:
 1. Mosquito Habitats in more than 50 educational centers through the Mosquito Catchers project.
 2. Atmosphere and Hydrosphere Protocol: Escuela Boquerón Abajo, Colón.
- Number of schools that reported data during the past year:
For the year 2021, little data was recorded in the platform considering that it was an irregular school year and the GLOBE program was in the process of reactivation (selection of educational centers, training, etc.).

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. GLOBE teacher training: In the year 2022, as part of the actions for the reactivation of the GLOBE Program in Panama, 50 teachers will be trained virtually and in person (October 25-27). With the purpose of strengthening the capacities of the teachers who will use GLOBE platforms to add scientific data to the projects already being developed in the educational centers.



2. Education for Sustainable Development: It is an initiative promoted by UNESCO for capacity building in education that facilitates educators to understand the importance of educational transformation based on 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".



The EDS course provides teachers with a broader view of how to take advantage of our environment to learn in a more comprehensive way. Thus integrating the GLOBE Program as part of the learning process in which scientific data capture can be used to develop research, new projects, among others.

- **Science**

1. Caza Mosquitos: The Mosquito Hunting Project is being developed in more than 10 educational centers in conjunction with the Ministry of Health, as part of the anti-Aedes campaigns to eliminate 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. Siembra Tu Árbol Panamá: strengthening the initiatives of foundations, the project is developed with the objective of maintaining and preserving the biodiversity of different areas of the country, especially those areas that have lost vegetation cover as a result of the development of agricultural activities, logging for timber as a means of subsistence, among others. This project is covered by Law 243 of October 13, 2021, which designates the country's graduating students to plant a minimum of five seedlings. This establishes an important starting point to give continuity to these reforested areas with the following generations.



- **Community**

1. Guardians of the ACP Watershed: 159 educational centers develop 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: is focused on raising awareness among the school population located in wetland areas about the importance of promoting the conservation of these ecosystems, which are home to a large number of marine-coastal species, provide protection against natural events, and generate a large amount of moisture for the planet, thus reducing the impact of climate change.

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 Chame Bay and in the Chiriqui area, achieving to plant around 50 hectares in the year 2022.



- **Communication**

1. Celebration of environmental dates: During the year 2022, different activities were carried out to commemorate environmental dates to promote environmental conservation, raise awareness about the responsible and sustainable use of resources and respect for biodiversity. Among the dates that stood out this year were: the Month of the Oceans in which the Sand Sculpture contest was held, reinforcing the importance of this component as a habitat and life zone for biodiversity, among other important functions for the ocean, in addition to promoting the campaign "LIVING OCEANS, HERITAGE FOR FUTURE GENERATIONS".



2. Water Culture Program: 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, in relation to this topic, has developed: the Public Speaking Contest with the slogan: "Groundwater, making visible the invisible" promoting the protection of groundwater. In the same way, the diploma course "Water: articulation with education for sustainable development" is being carried out, where 35 teachers from all over the country are trained.



Plans and ideas for next years:

By the first quarter of the year 2023, 25 educational centers are expected to be active in collecting scientific data mainly in the use of the Mosquito and Cloud Habitat protocols in an integral manner with the projects that are already being developed aligned with the GLOBE approach.

By the second quarter of 2023, we expect to increase the number of active educational centers to 50, giving the appropriate follow-up to the trained teachers.

In the same way, we expect to develop training for 25 additional teachers with the objective of including those from schools in the interior areas of the country where another variety of Panamanian biodiversity can be evidenced.

Finally, for the year 2023 we plan to participate and demonstrate the development of GLOBE activities in Panama through the frequent use of GLOBE platforms and the use of the resources found therein.

Programa GLOBE 2023

Seleccione un periodo para resaltarlo a la derecha. A continuación hay una leyenda que describe el gráfico.

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|---|-----------------|-------------------|-------------|---------------|-----------------------|------------------|----------------------|---|--------------|---|-----------------------|---|-------------------------------|---|----|----|----|
| Duración del plan | | | | | Inicio real | | Periodo resaltado: 1 | | % Completado | | Real (fuera del plan) | | % Completado (fuera del plan) | | | | |
| ACTIVIDAD | INICIO DEL PLAN | DURACIÓN DEL PLAN | INICIO REAL | DURACIÓN REAL | PORCENTAJE COMPLETADO | PERIODOS (1 mes) | | | | | | | | | | | |
| | | | | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| Selección de 25 centros educativos para reactivar al Programa GLOBE | 2 | 2 | 2 | 2 | | | | | | | | | | | | | |
| Capacitación docentes GLOBE en Protocolos: Nubes / Temperatura del Aire/ Precipitación/ Vientos | 2 | 3 | 2 | 2 | | | | | | | | | | | | | |

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| Distribución de herramientas e insumos para el desarrollo de protocolos | 2 | 3 | 2 | 2 | | | | | | | | | | | | | |
| Seguimiento al desarrollo de Protocolos en centros educativos GLOBE | 3 | 12 | 3 | 12 | | | | | | | | | | | | | |
| Participación: WORLD WATER DAY con GLOBE | 3 | 1 | 3 | 1 | | | | | | | | | | | | | |
| Capacitación docentes GLOBE en Protocolos: Temperatura del agua/ Transparencia del agua/ Mosquitos/ Macroinvertebrados | 4 | 2 | 4 | 3 | | | | | | | | | | | | | |

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| Celebrate with GLOBE: Earth Day | 4 | 1 | 4 | 1 | | | | | | | | | | | | | |
| Distribución de herramientas e insumos para el desarrollo de protocolos | 5 | 2 | 5 | 2 | | | | | | | | | | | | | |
| Seguimiento al desarrollo de Protocolos en centros educativos GLOBE | 5 | 12 | 5 | 12 | | | | | | | | | | | | | |
| Reunión Centros Educativos GLOBE Panamá | 6 | 1 | 6 | 1 | | | | | | | | | | | | | |
| Participación GLOBE Annual Meeting con la representación de Panamá | 7 | 1 | 7 | 1 | | | | | | | | | | | | | |

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| Capacitación docentes GLOBE: Migración de aves/ altura de árboles/ | 7 | 2 | 7 | 3 | | | | | | | | | | | | | |
| Distribución de herramientas e insumos para el desarrollo de protocolos | 8 | 2 | 8 | 2 | | | | | | | | | | | | | |
| Seguimiento al desarrollo de Protocolos en centros educativos GLOBE | 8 | 12 | 8 | 12 | | | | | | | | | | | | | |
| Incorporar 25 nuevos centros educativos al Programa GLOBE | 8 | 9 | 8 | 9 | | | | | | | | | | | | | |
| Seguimiento al desarrollo de Protocolos en centros educativos GLOBE | 10 | 3 | 10 | 3 | | | | | | | | | | | | | |