



Regional Campaign: “Trees within LAC”

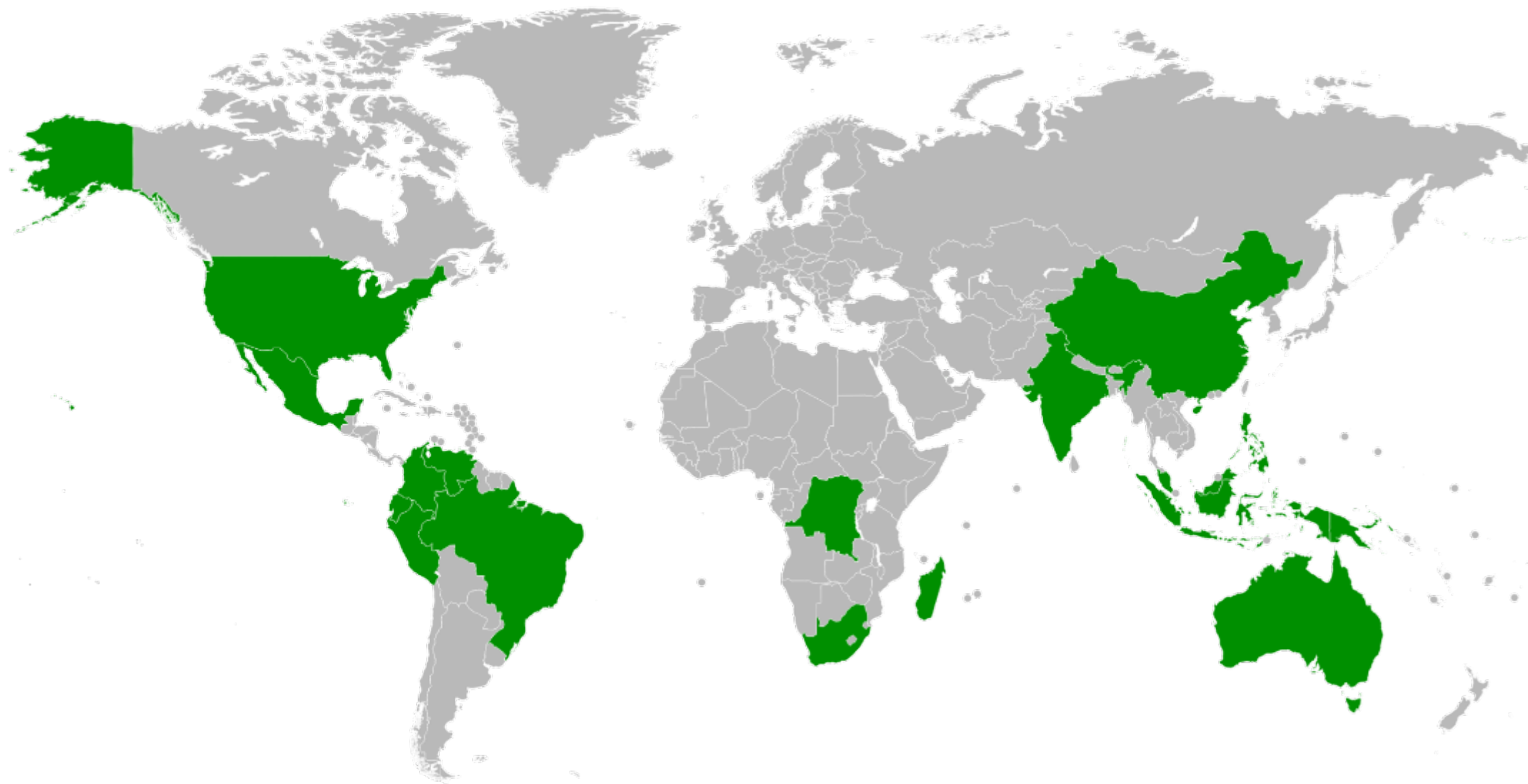


**Two years of seeding knowledge
and producing discoveries**





Trees have a remarkable importance in a variety of biophysical processes. A fact that is crucial in megadiverse countries such as most the LAC countries.





The Trees within LAC campaign was designed to deepen understanding of tree ecology across LAC's diverse landscapes, from natural forests to urban environments, describing the existing problems and proposing solutions.



The campaign offer an opportunity for teachers to have new tools to make their classes more meaningful and improve students' perception of their environment.



The campaign aimed to contribute to the achievement of some important SDGs





The campaign was launched in the year 2023 with the aim of Identify the most common tree species in LAC countries, describing their phenophases and the variables related to their development.

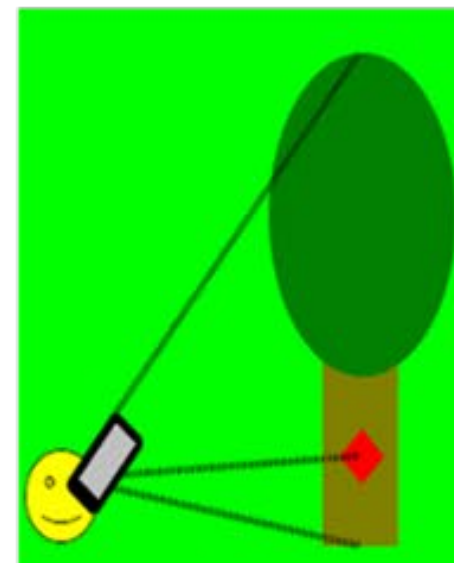
Specifically, during the first year we wanted to know:



What are the most important tree species in the region?



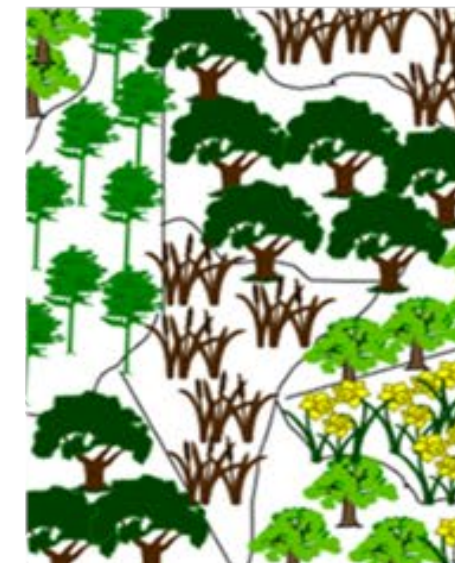
Comparing the phenological phases of trees common in the region.



Measuring tree height



Measuring the diameter of trees



Characterize land cover of the sites where trees grow



Identify the environmental variables influencing tree growth



Recognize the importance of trees for educational communities.



The most interesting results of the first year include the following:

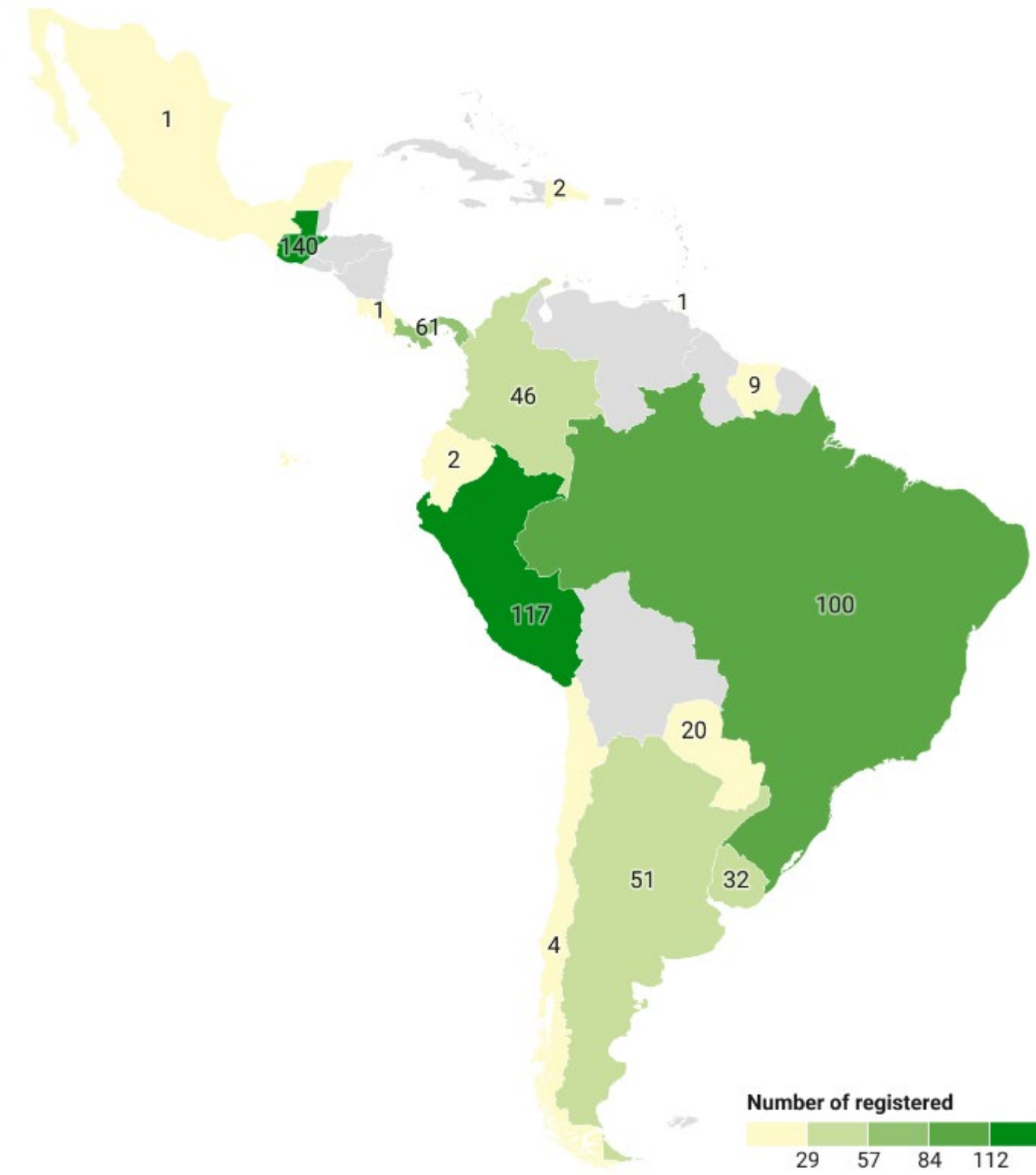


Estudiante: **Mayerli E. Juárez**
Escuela: **Centro Educativo Bugarvilia**
País: **Guatemala**

A logo chosen after a drawing contest with 258 submissions from 8 countries



Countries of origin of those registered for the campaign in 2023



Created with Datawrapper



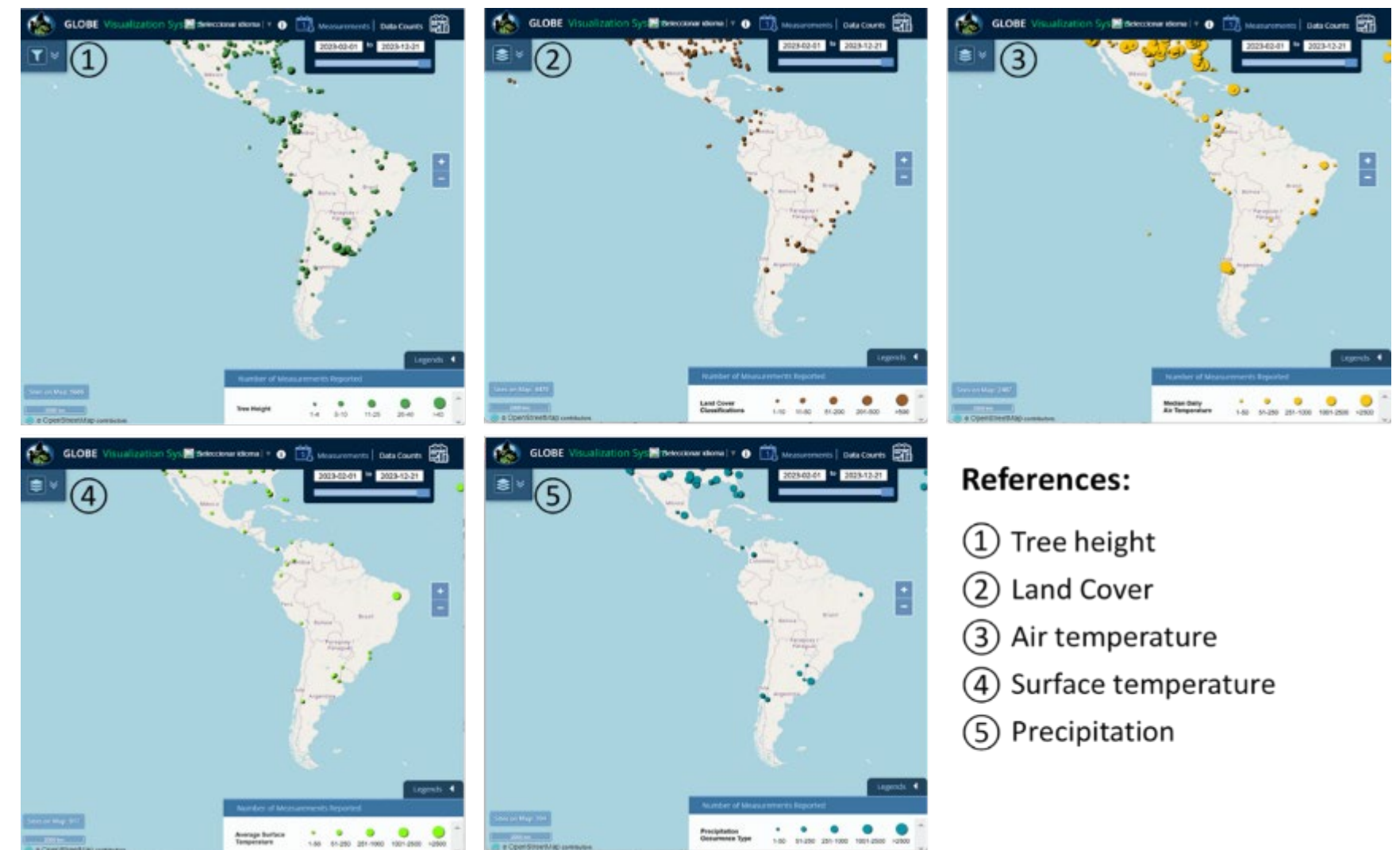
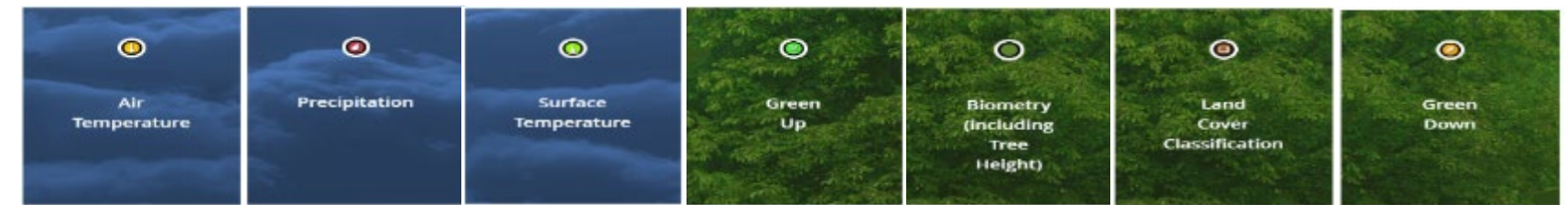
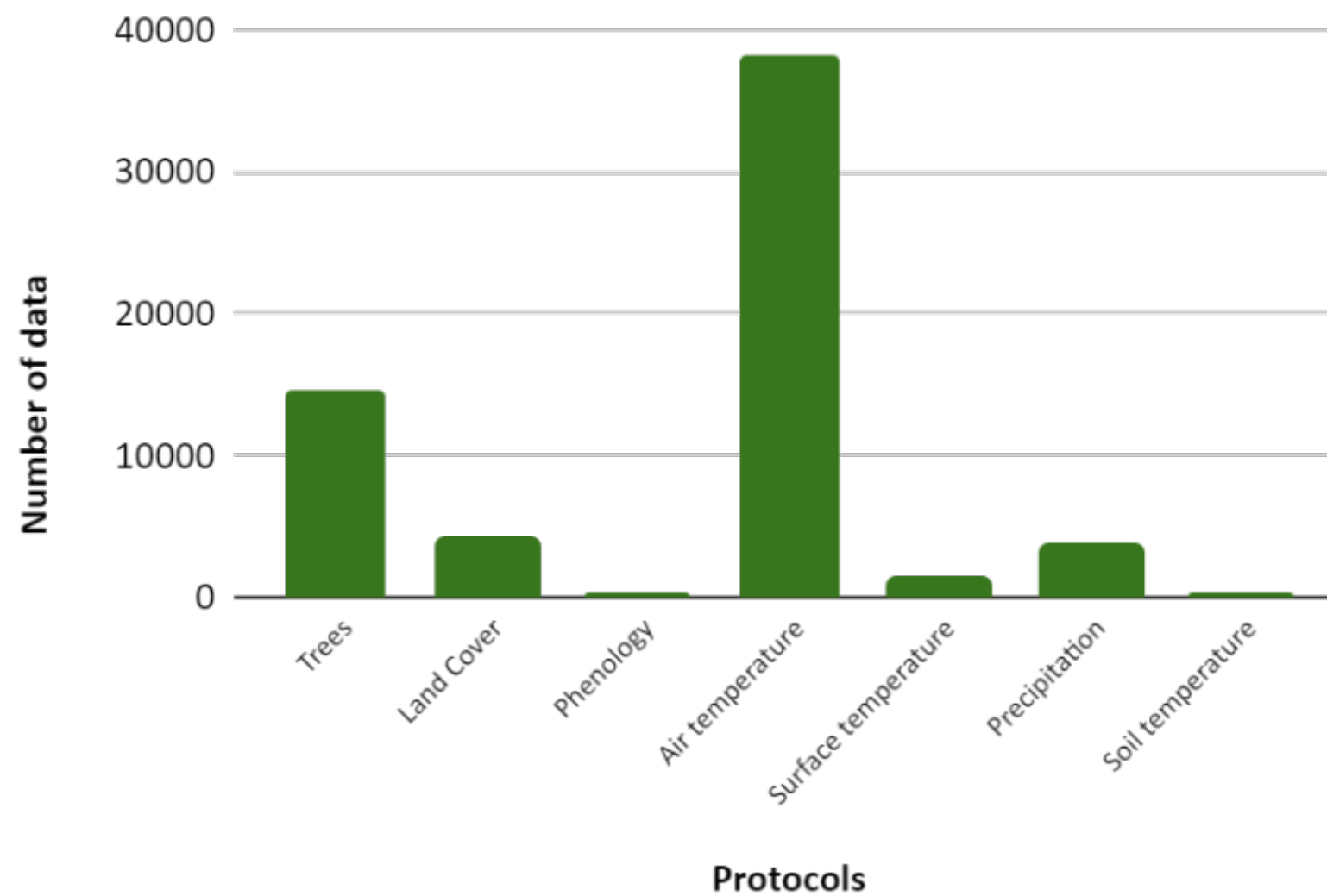
The Campaign in numbers 2023

Items	Numbers
Total registered to the campaign:	566
Total people who have attended the webinars:	405
Total number of teachers, schools or citizen scientists who have carried out measurements in the campaign:	110 (13 new schools in September)
Countries that submitted data:	18 (Argentina, Bahamas, Belize, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Panama, Paraguay, Peru, Dominican Republic, Suriname, Trinidad & Tobago, Uruguay)



A total of 66,067 data using 7 GLOBE protocols from which 14,971 data were from trees

Number of measurements per protocol



References:

- ① Tree height
- ② Land Cover
- ③ Air temperature
- ④ Surface temperature
- ⑤ Precipitation



Common tree species shared in a Padlet



Enterolobium contortisiliquum (Vell.) Morong



Jacaranda mimosifolia D. Don



Erythrina crista-galli L.

5 Mentions



Schinus molle L.

4 Mentions



Araucaria araucana



Ceiba speciosa



Peltophorum dubium (Spreng.) Taub



Phytolacca dioica L.

3 Mentions



Populus alba



Syagrus romanzoffiana



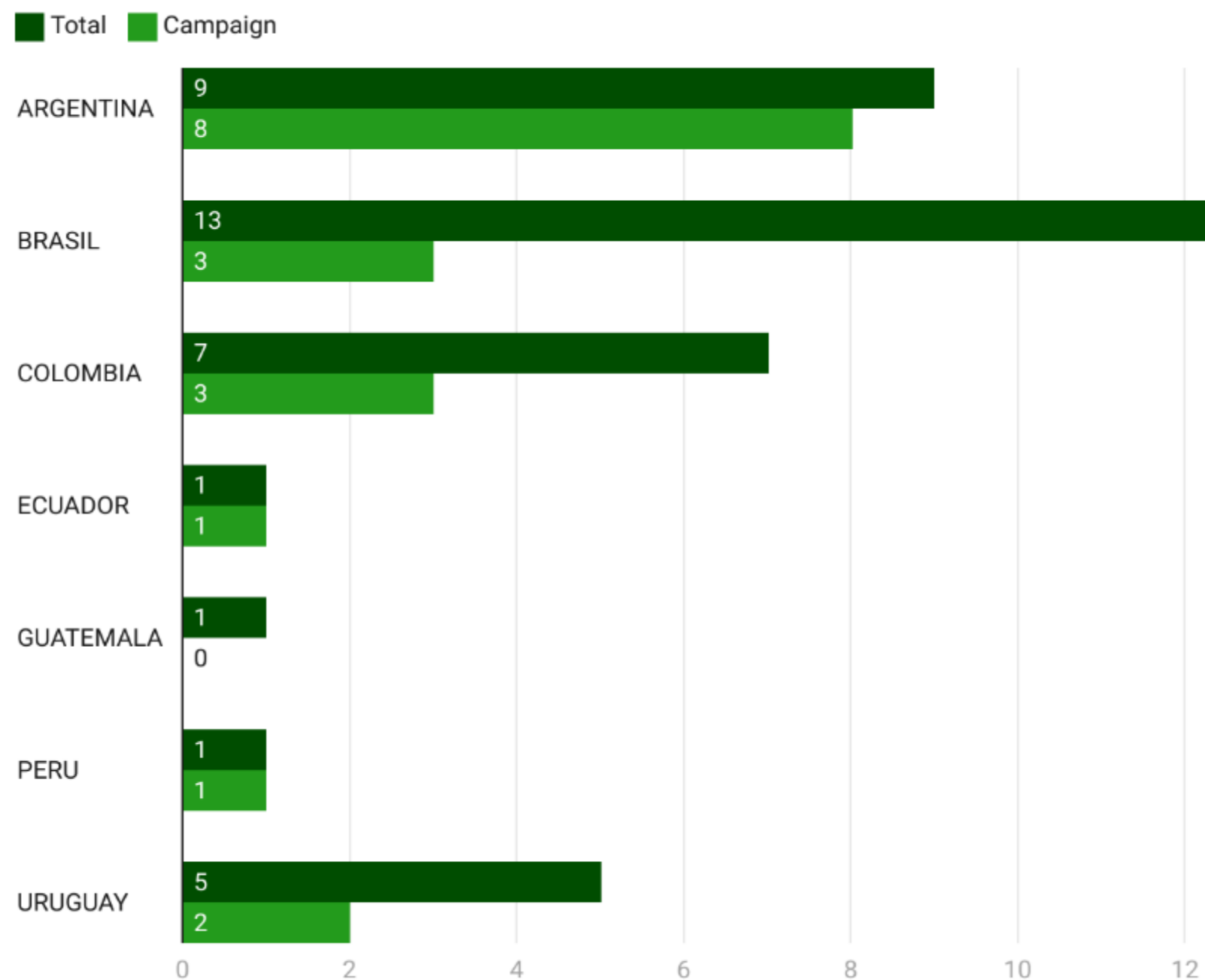
Tecoma stans (L. Juss. Ex Kunth)



Tipuana tipu (Benth.) Kuntze

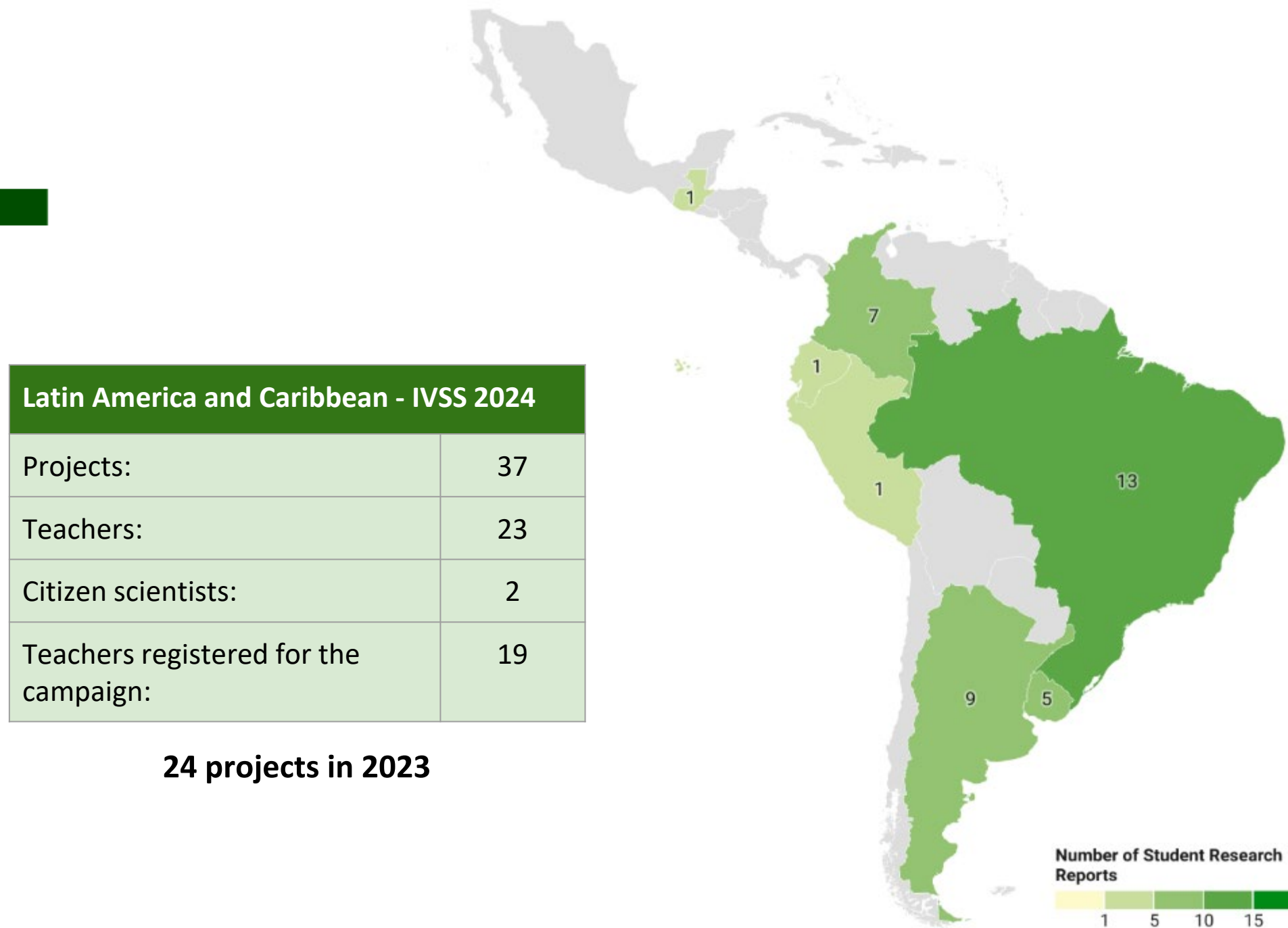


Student Research Reports - IVSS 2024



Created with Datawrapper

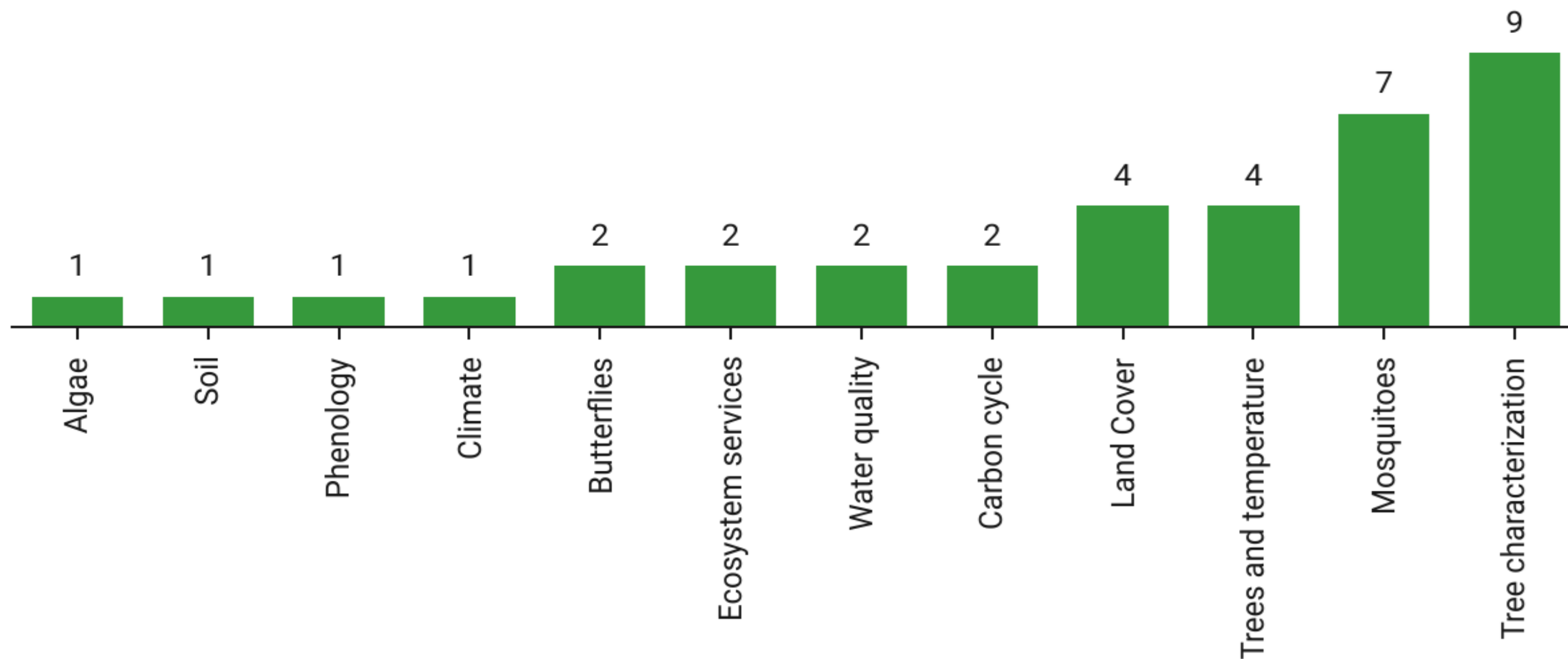
Student Research Reports - IVSS 2024



Created with Datawrapper



Project topics



Created with Datawrapper



Webinars: February - December 2023

Webinar: Lanzamiento Campaña "Árboles dentro de LAC"

16 de febrero
18:00 Hs de Argentina
Plataforma ZOOM

- ¿Cómo aplicar la educación STEM y hacer un proyecto de investigación con estos temas?
- Concurso de elaboración del logo de la campaña
- Presentación IOP (Intensive Observation Period - Período Intensivo de Observación) Abril y Mayo
- Uso de la app GLOBE Observer
- Navegación por el sitio web de la campaña

129 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

Primeros pasos para iniciar con la campaña de árboles

16 de Marzo - 18:00 hs Argentina
Plataforma Zoom

Temas a tratar:

- ¿Cómo aplicar la educación STEM y hacer un proyecto de investigación con estos temas?
- Concurso de elaboración del logo de la campaña
- Presentación IOP (Intensive Observation Period - Período Intensivo de Observación) Abril y Mayo
- Uso de la app GLOBE Observer
- Navegación por el sitio web de la campaña

125 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

WEBINAR: BIOMAS Y TRABAJOS COLABORATIVOS

20 de abril - 18:00 hs Argentina
Plataforma Zoom

TEMAS A TRATAR:

- Anuncio del ganador del logo elegido para la campaña
- Uso de la app GLOBE Observer para cobertura terrestre
- Manual de cobertura de dosel y de suelo
- Ejemplos de biomas de GLOBE LAC
- Ejemplo de actividad de aprendizaje con imágenes satelitales
- Proyecto colaborativo: Fenómeno ENSO
- Recordatorio IOP

94 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

WEBINAR

"Aprendiendo a extraer, analizar y visualizar datos"

17 de agosto 6 pm Argentina
Temas

- Cómo descargar datos y procesarlos
- Análisis e interpretación de datos (uso de gráficos)
- Nuevo IOP (Período de Observación Intensiva): Agosto - Septiembre
- Adjudicación de fondos para las salidas de campo

41 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

WEBINAR

DENDROCRONOLOGÍA: SU CONTRIBUCIÓN AL ENTENDIMIENTO DE LA DINÁMICA AMBIENTAL EN AMÉRICA DEL SUR

Dr. Ricardo Villaiba
Instituto Argentino de Nivología, Glaciología y Ciencias Ambientales (IANIGLA)
CCT-CONICET

14 de septiembre 6 pm (hora Argentina)
Plataforma de Zoom

72 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

WEBINAR

EL ARBOLADO URBANO EN LA ESTRATEGIA DE ADAPTACIÓN AL CAMBIO CLIMÁTICO

DÍA 26 de Octubre
HORA 08:00 PM (HORA ARGENTINA)
PLATAFORMA Zoom

Orador: Elisa Daigalarrondo (Ingeniera Agrónoma)

65 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

Webinar: ¿Cómo cambian los árboles en las distintas estaciones del año?

18 de mayo 6:00 p.m. Argentina

TEMAS A TRATAR:

- Carga de datos GLOBE en forma manual
- Fenología y fenofases
- Protocolo de fenología: Green Up y Green Down
- Fenología desde el espacio
- Recordatorio IOP
- Datos en mapa y resultados parciales

88 participants

Campaña "Árboles dentro de LAC"

WEBINAR: ¿CÓMO INFLUYEN LAS PRECIPITACIONES EN EL CRECIMIENTO DE LOS ÁRBOLES?

15 de Junio 18:00 p.m. (Argentina)
Plataforma Zoom

Temas a tratar:

- Las precipitaciones y el crecimiento de los árboles (Dorian Janney, Científica de NASA)
- Uso de la app GLOBE Observer para registro de las mediciones atmosféricas
- Inicio del trabajo de investigación
- Aclaraciones, recordatorios, preguntas y respuestas

38 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

WEBINAR

¿UN BOSQUE EN EL AGUA? LOS MANGLARES

13 de julio 6:00 PM Argentina
PLATAFORMA ZOOM

Temas a tratar:

- Biodiversidad
- Servicios ecosistémicos
- Desafíos de conservación

32 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

WEBINAR

USOS TRADICIONALES DE LAS ESPECIES ARBÓREAS

16 de Noviembre 08:00 pm (Hora Argentina)
Plataforma de Zoom

Oradora: Gladys Tello (Universidad Nacional Agraria La Molina, Perú)

30 participants

CAMPAÑA "ÁRBOLES DENTRO DE LAC"

Webinar

Bosques en todas partes y al mismo tiempo

Los bosques y sus productos están más cerca de nosotros de lo que pensamos, aunque no vivamos en ellos

1. Productos del bosque: más cerca de nosotros de lo que imaginamos
2. Servicios que nos dan los bosques: efectos locales y globales

Jueves 7 de diciembre 08:00 pm (Hora Argentina)
Plataforma de Zoom

Orador: Ignacio Larco Roca (Ingeniero Forestal, Universidad Agraria La Molina, Perú)

34 participants



Guests to the webinars 2023



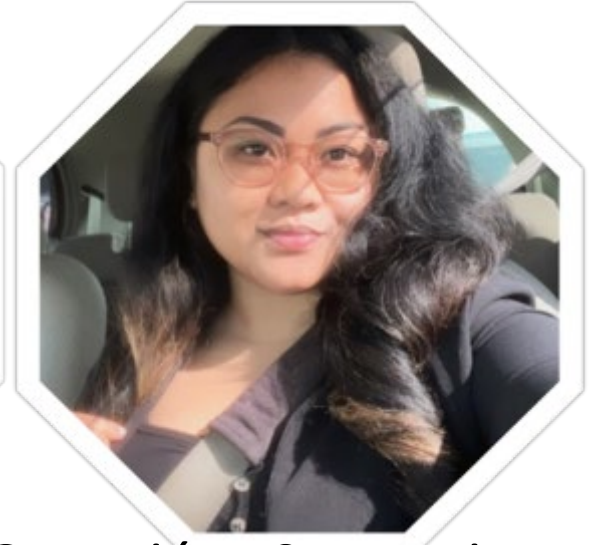
Brian Campbell
(United States)



Dorian W. Janney
(United States)



Monique Pool



Geneviève Sontowingolo
(Surinam)



Ricardo Villalba
(Argentina)



Gladys Tello
(Peru)



Elisa Dalgarrondo
(Uruguay)



Ignacio Larco Roca
(Peru)



Field trip opportunities for teachers and their students

Five stipends of **US\$300** each were awarded to 5 teachers from different educational centers for field trips with their students to a park or nature reserve where they could perform other measurements for the campaign.

A total of 10 applicants applied.

Profesor / Teacher:	Escuela / School:	País / Country:
Emiliano Vinocur	EETP N° 449 "Pago de los Arroyos" y EPPI N° 1345 "Nuestra Señora del Carmen"	Argentina (Acebal y Pujato)
Juan Manuel Martínez	Escuela No. 88 Alfred Nobel (rural)	Uruguay (Canelones)
Erquinio Taborda	Semillero de Investigación en Ciencias Espaciales (SICE)	Colombia (Barranquilla)
Maria Fernanda Kielmanowicz	Colegio de la Mesopotamia	Argentina (Victoria)
Raúl Rocha	Institución Educativa Carlos Vieco Ortiz	Colombia (Medellín)



Opportunity to participate in the Regional GLOBE Meeting in Panama and observe the solar eclipse

Regional Meeting in Panama:

6 teachers and 6 students were chosen to attend the **2023 LAC Regional Meeting**. They could choose to bring a second student at their own expense.

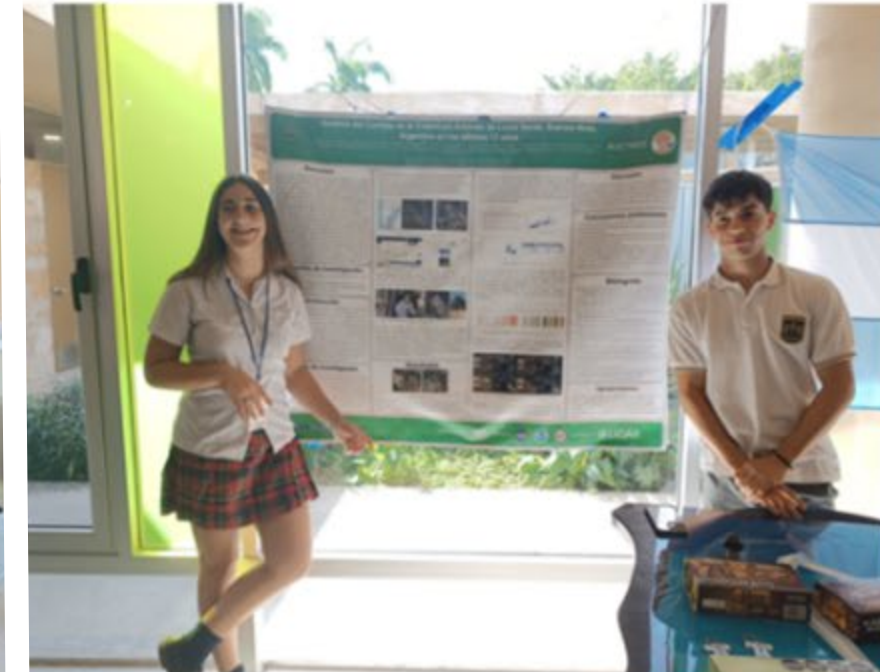
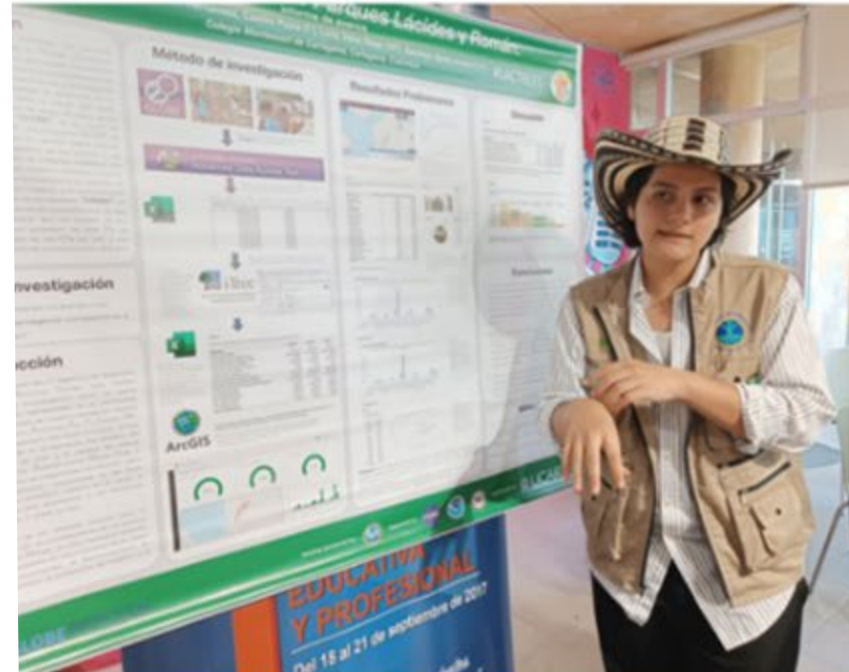
The students participated in activities organized for them, with other children from the host country and the teachers participated in the regional meeting and the training that was developed.

12 applications were submitted.

Profesor / Teacher:	Escuela / School:	Estudiante/ Student:	País / Country:
María Fernanda Kielmanowicz	Colegio de la Mesopotamia	Victoria Zanoni (12)	Argentina (Victoria)
Emiliano Vinocur	EETP N° 449 "Pago de los Arroyos" y EPPI N° 1345 "Nuestra Señora del Carmen"	Juan Manuel Hernández (18)	Argentina (Acebal y Pujato)
María Inés Amato	St. Luke's College	María Pilar Bartrons (14)	Argentina (Buenos Aires)
Juan Felipe Restrepo	Grupo de Investigación Biontessori	Diego Andrés Luna (15)	Colombia (Cartagena)
María Marta Gutiérrez	St. Luke's College	Felipe Sanes (15)	Argentina (Buenos Aires)
Juan Manuel Martínez	Escuela No. 88 Alfred Nobel (rural)	Bruno Acevedo (11)	Uruguay (Canelones)



Presentation of Research Reports at the Regional Meeting of Panama





Student experience at the Panama Regional Meeting - Field trips





The campaign during 2024

A new phase

The Year of Climate and Carbon





This year the campaign is focused on:

Analyze the relationship of changes in climatic variables in the development of trees and land cover throughout the year in the study sites.





Specific objectives:

Measure tree height and diameter to identify growth patterns and trends of change (ecological succession)

Observe and record the phenological response (leaf color, flower, fruit) of the trees to climatic variables throughout the year

Determine the carbon storage capacity of the measured trees

Describe land cover changes where trees grow by identifying drivers of change

Contribute to climate literacy by understanding their teleconnections to explain various events that impact socio-ecosystems

Recognize the most important tree species in the region



Expected results



Biometry and phenology records of trees observed throughout the year.



Records of climatic variables throughout the year.



Research relating land cover change and use to climatic variables



Estimation of the carbon storage potential of the trees studied



Calendar with popular trees in the region



Narratives on trees, climate and carbon in the region



Training actions to explain conceptual and procedural elements of the campaign

Planned activities

- Webinars
- Protocols
- IOP (Intensive Observation Period)
- Guest presenters
- Tree photography contest
- Tutorials and other resources in 3 languages
- New learning activities
- Conducting virtual workshops/online modules
- Measurements
- Collaborative padlets
- List of popular species uploaded by participants
- Project advice to present research projects to the IVSS



The GLOBE Program

"TREES WITHIN LAC" CAMPAIGN

**EXPLORING THE
VEGETATION'S
RESPONSE TO THE
SEASONS OF THE YEAR**

MARCH 21ST 06:00 PM
(ARGENTINIAN TIME) ZOOM
PLATFORM

Sponsored by:  Supported by:    Implemented by:  UCAR

The poster features a light beige background with green leaf illustrations. A circular inset shows a tree with yellow leaves. The text is centered and uses a mix of bold and regular fonts. Logos for NASA, NSF, NOAA, EPA, and UCAR are at the bottom.



Protocols

Biosphere

- Biometry (including Tree Height)
- Land Cover Classification
- Green Down
- Green Up
- Carbon Cycle
- Fire Fuel

Atmosphere

- Air Temperature
- Precipitation
- Surface Temperature
- Clouds
- Relative Humidity



Webinars: February - June 2024

Launch of the campaign "Trees within LAC" Year 2
The year of Climate and Carbon

February 29th
06:00 pm (Argentina time)

We look forward to welcoming you with information and updates!

81 attendants

"TREES WITHIN LAC" CAMPAIGN
EXPLORING THE VEGETATION'S RESPONSE TO THE SEASONS OF THE YEAR

MARCH 21ST 06:00 PM (ARGENTINIAN TIME) ZOOM PLATFORM

74 attendants

Campaign 'Trees within LAC' WEBINAR

THE ROLE OF VEGETATION IN THE CARBON CYCLE

SPEAKER
ERIKA PODEST

APRIL 25TH
06:00 pm (Argentina Time)
Zoom Platform

104 attendants

"TREES WITHIN LAC" CAMPAIGN
WEBINAR

CLIMATE CHANGE AND EXTREME EVENTS

SPEAKER
GRACIELA SALABERRI
METEOROLOGIST

MAY 16TH
06:00 PM ARGENTINE TIME
ZOOM PLATFORM

59 attendants

"Trees within LAC" campaign
WEBINAR

RESEARCH PLAN IDEAS: HOW TO DEVELOP AN EFFECTIVE INVESTIGATION?

THURSDAY, JUNE 27
06:00 PM ARGENTINA TIME
ZOOM PLATFORM

32 attendants

Next Webinar

"Trees within LAC" CAMPAIGN
WEBINAR

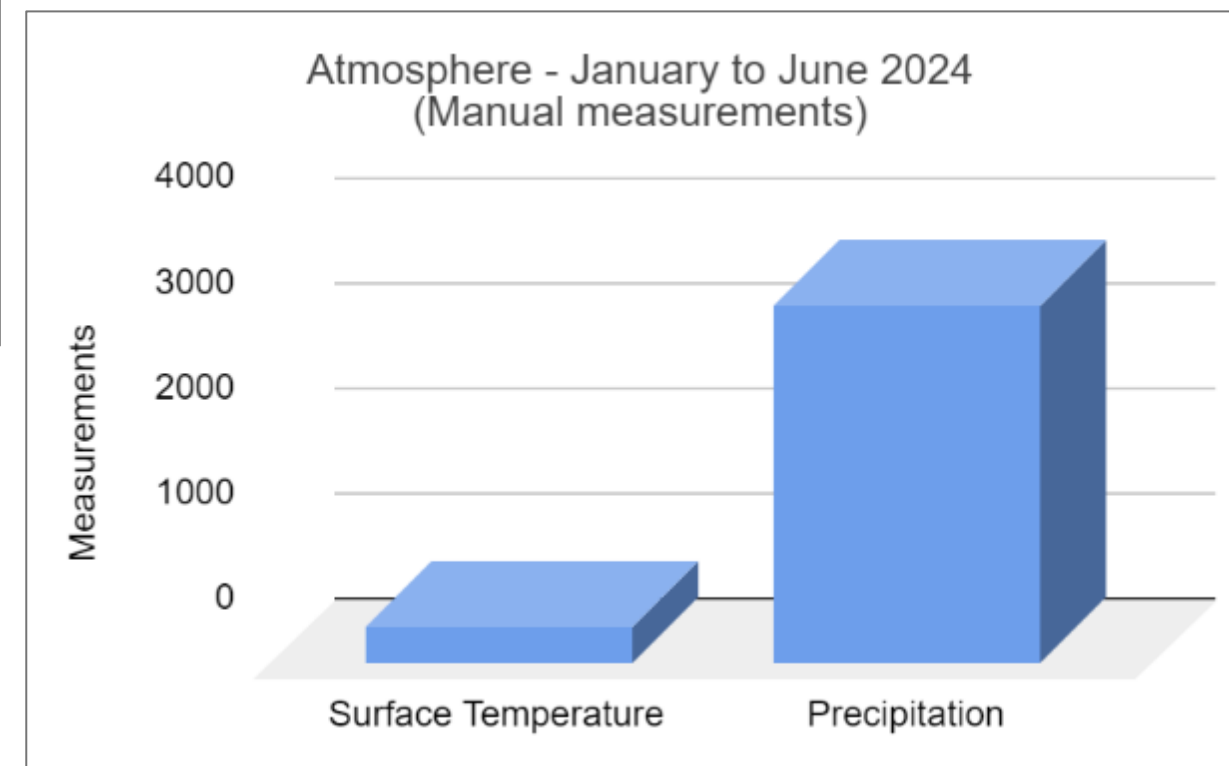
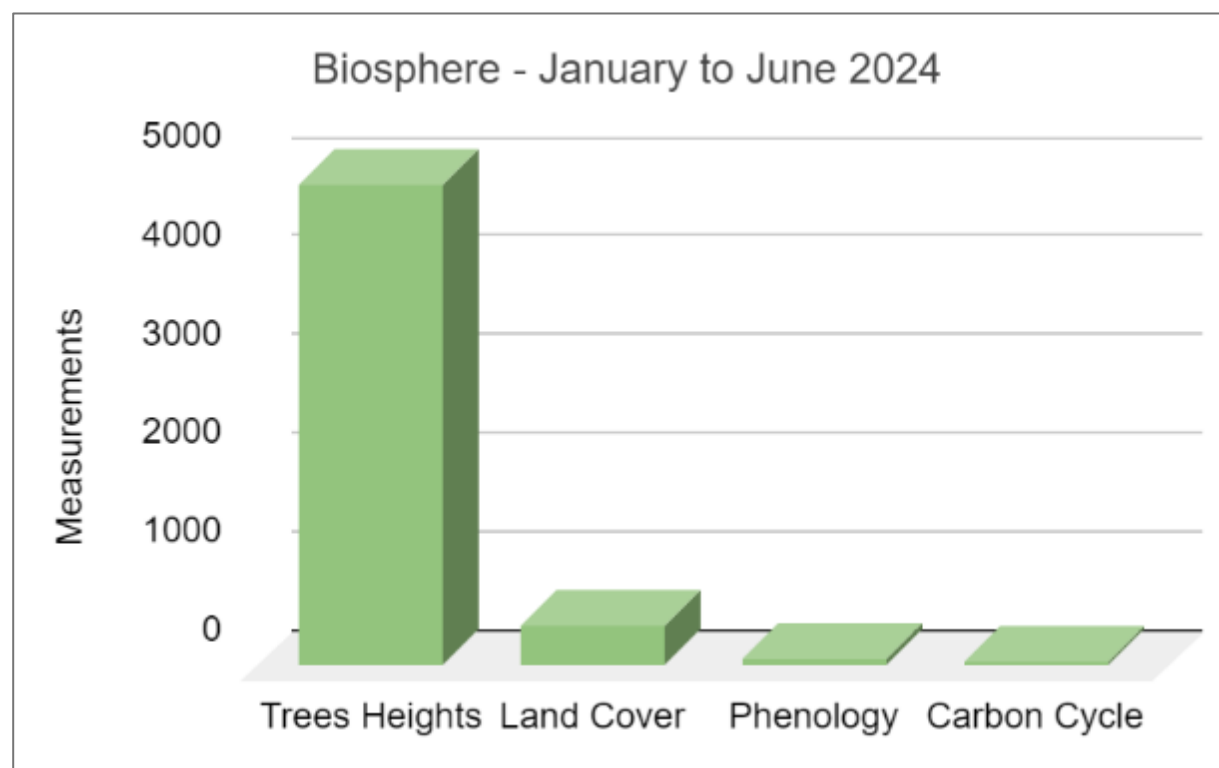
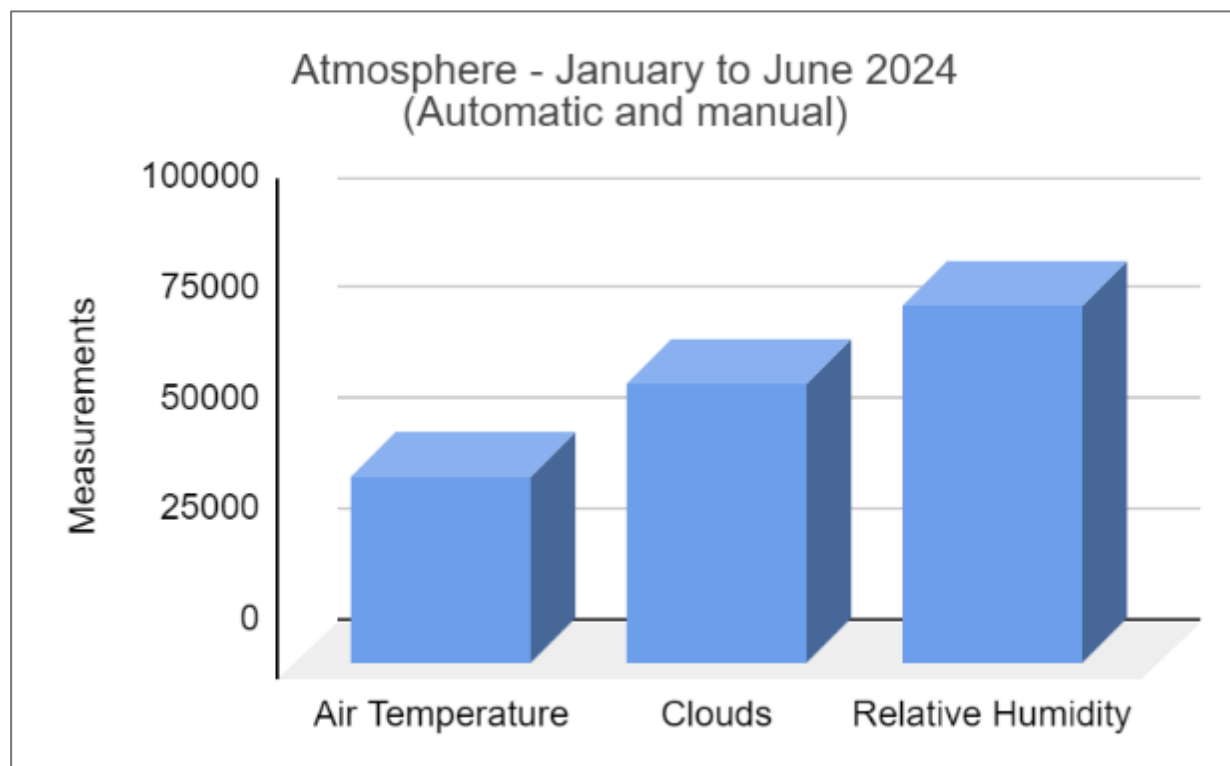
IMPORTANCIA Y CURIOSIDADES DE LOS BOSQUES DE ARAUCARIA EN EL SUR DE SUDAMÉRICA

25 de Julio
18:00 HS HORA ARGENTINA
Plataforma de Zoom

Special Speaker:
Dr. Javier Sanguinetti
Doctor en Biología



Total data measured in 2024: 195,843 data





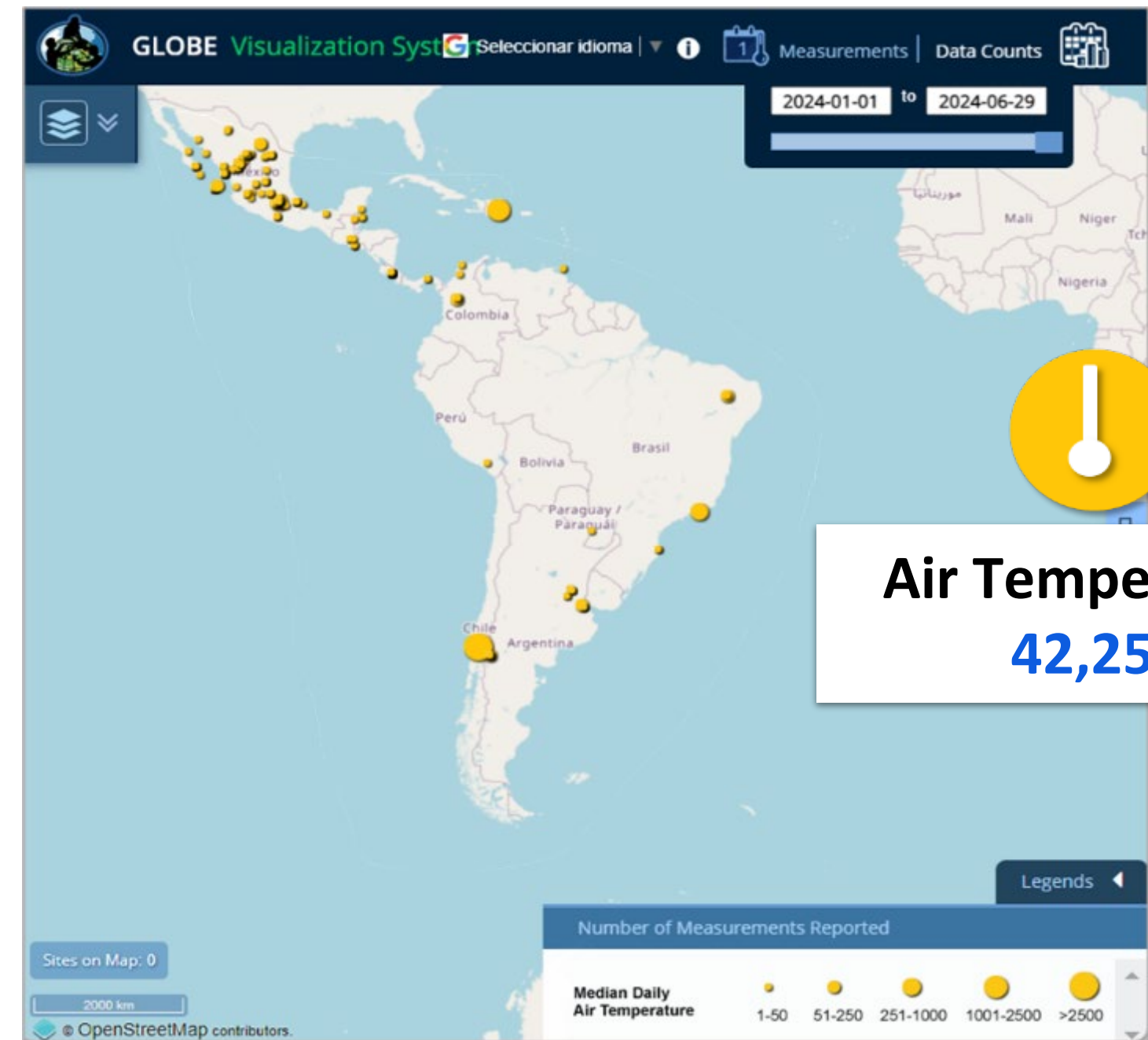
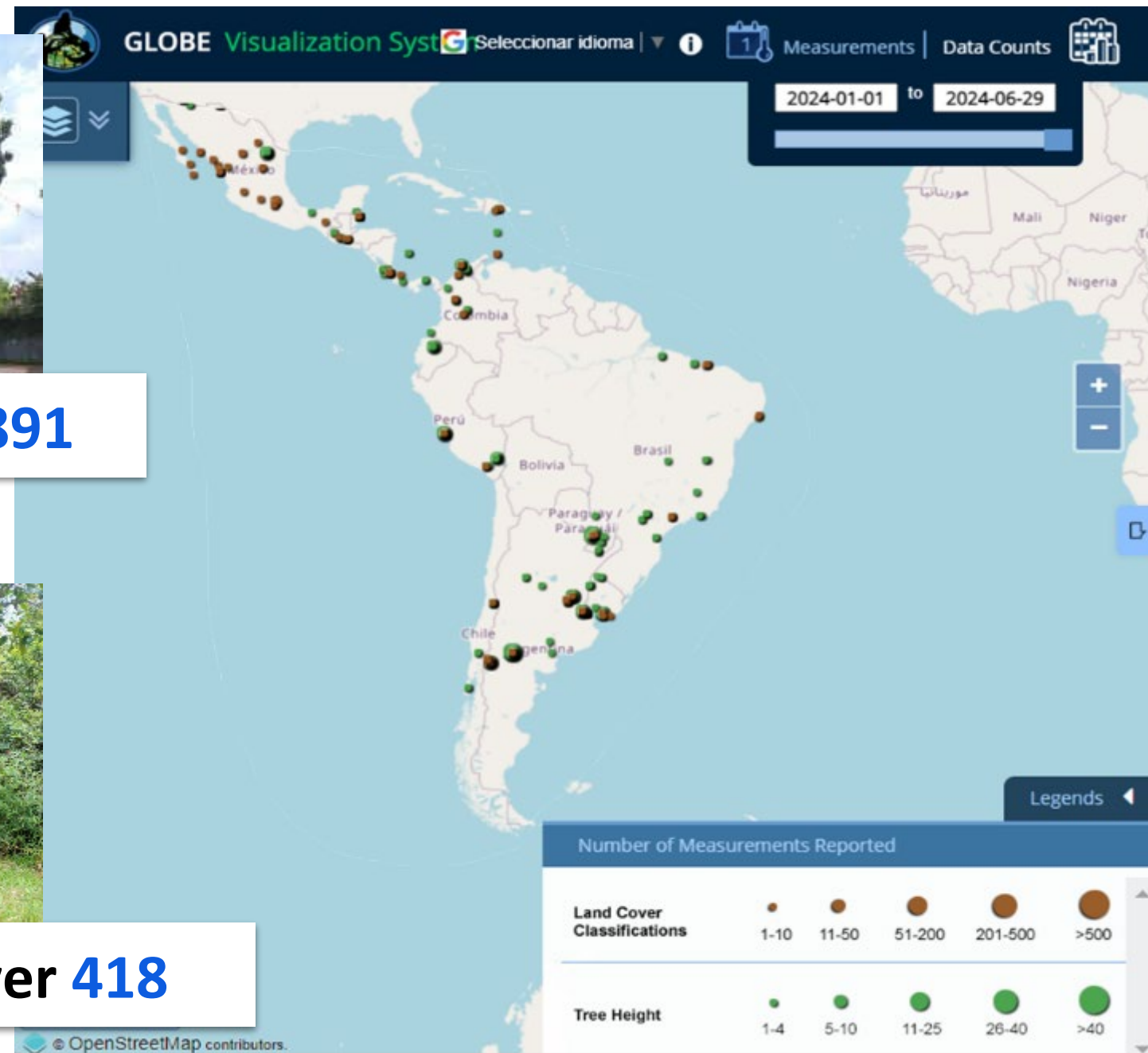
A total of **195,843 data** using 11 GLOBE protocols from which **4,891 data were from trees** - Data: January to June 2024



Trees 4,891



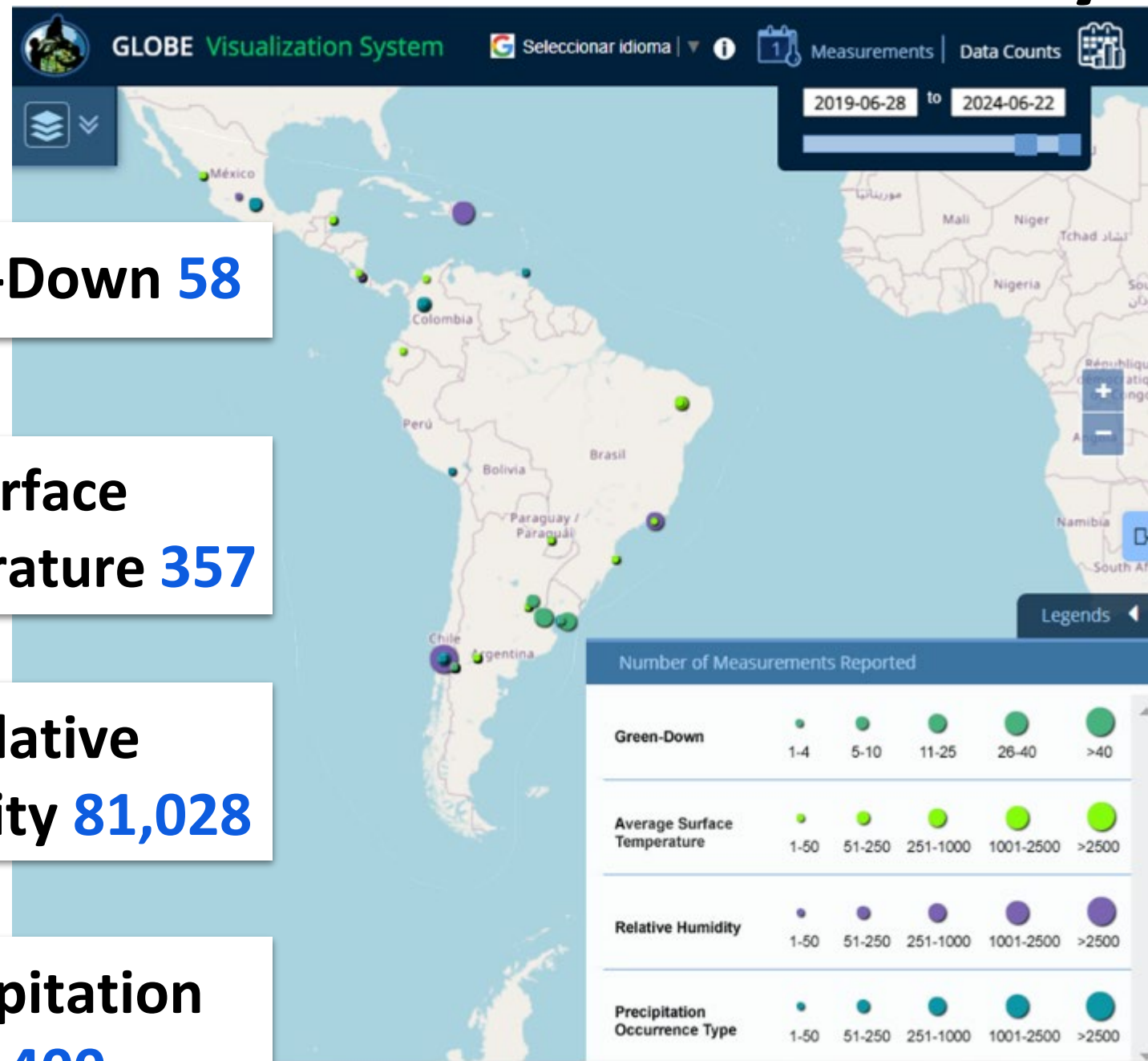
Land cover 418



Air Temperature 42,254



A total of **195,843 data** using 11 GLOBE protocols Data: January to June 2024



Green-Down 58



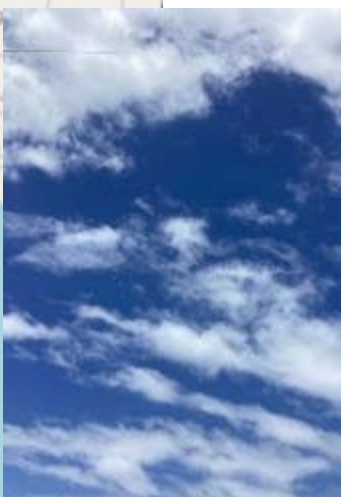
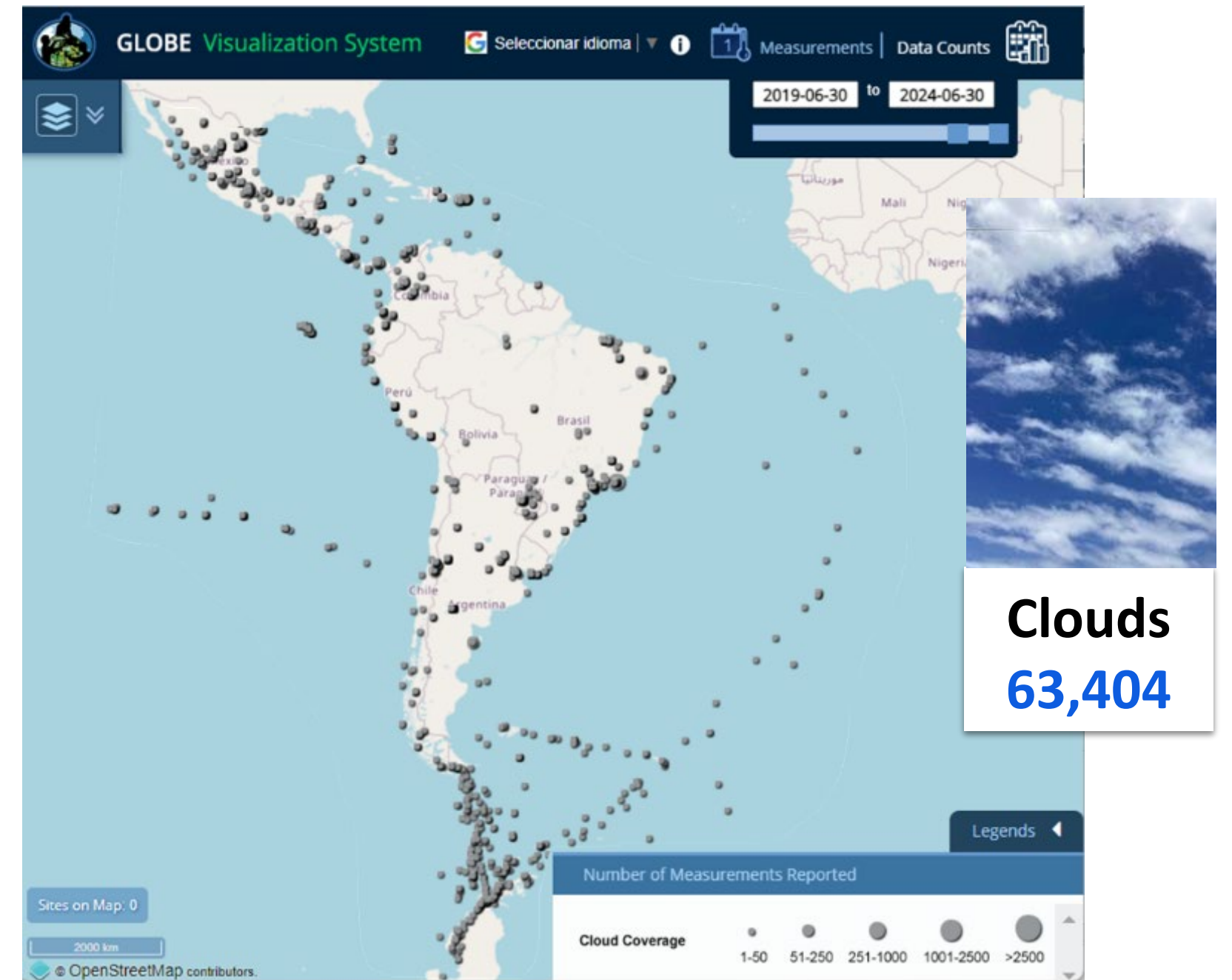
Surface Temperature 357



Relative Humidity 81,028



Precipitation 3,400



Clouds 63,404



Schools with more data uploaded during the first months (January-June 2024)

Manual measurements

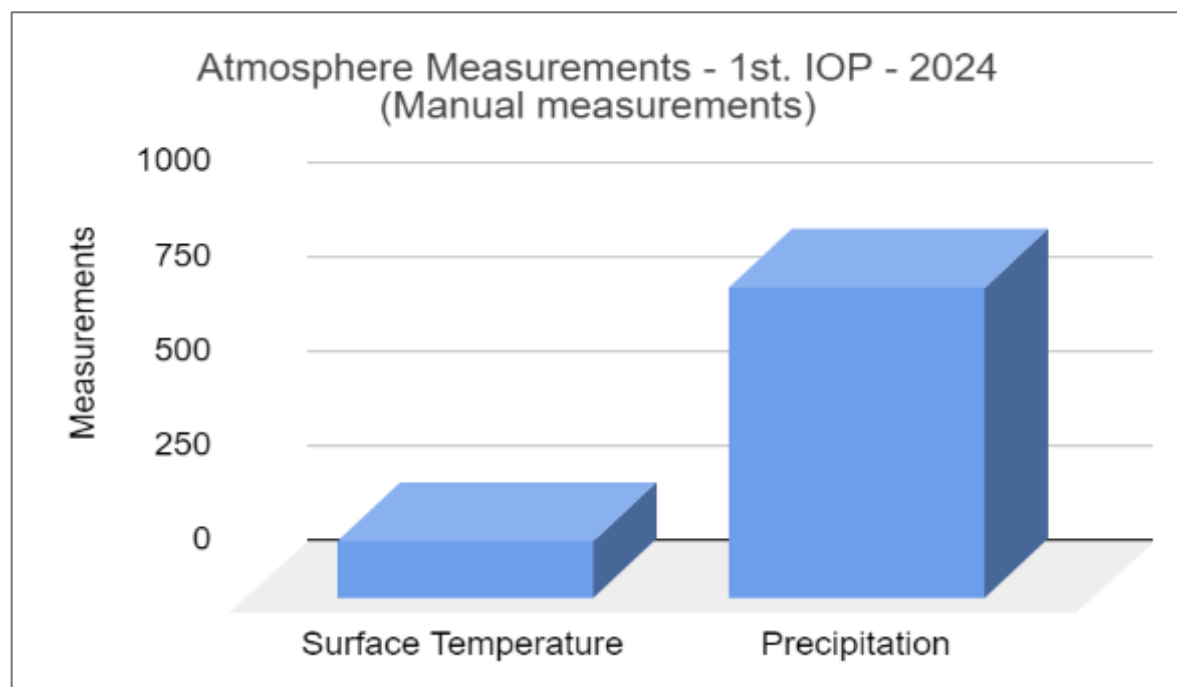
School/College/University	Country	Data
Colegio de la Asunción	Paraguay	3,273
Universidad Nacional del Comahue	Argentina	1,718
Colegio San Lucas	Argentina	1,617
STEAM Program-USAC Galileo GTO	Guatemala	1,212
Club de Ciencias Huechulafquen	Argentina	1,260
Colegio de la Mesopotamia	Argentina	1,034

Measurements with automatic weather stations

School/College/University	Country	Data
Colegio Madres Dominicacas	Chile	63,265
Earth Network GLOBE Virtual School	México	51,002
Notre Dame School	Rep. Dominicana	6,454
Facultad de Estudios Superiores Cuautitlán	México	2,676
Sociedad Antioqueña de Astronomía UDEA	Colombia	2,579
Instituto Federal do Maranhao	Brasil	1,646



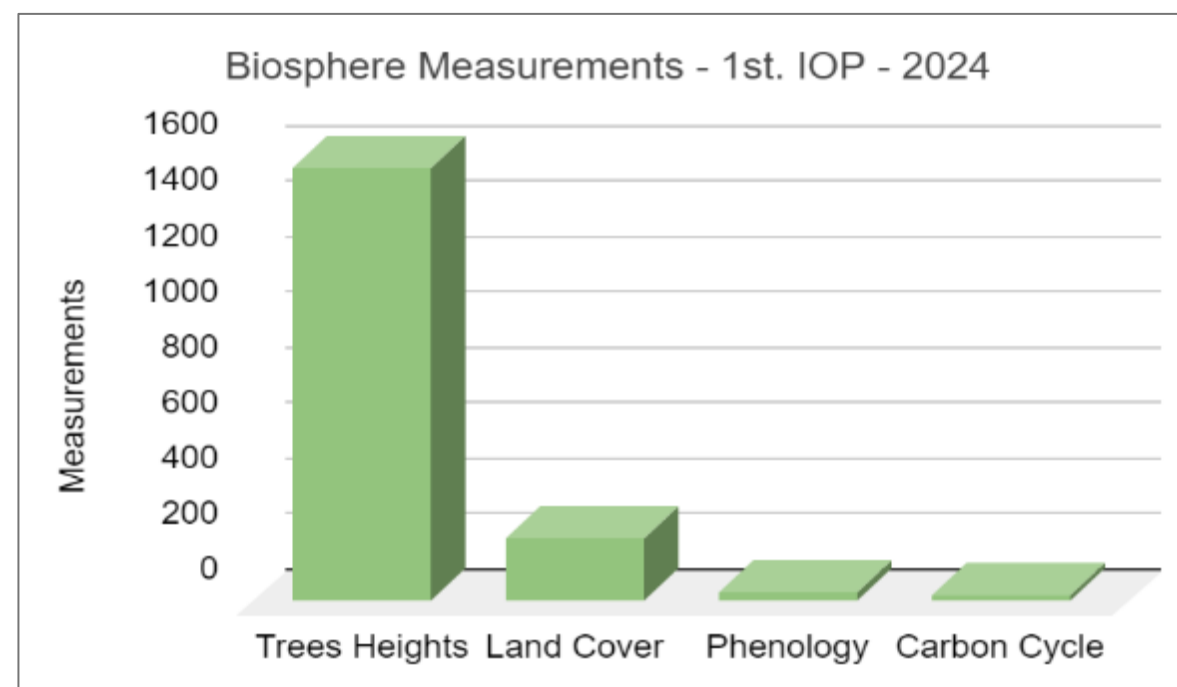
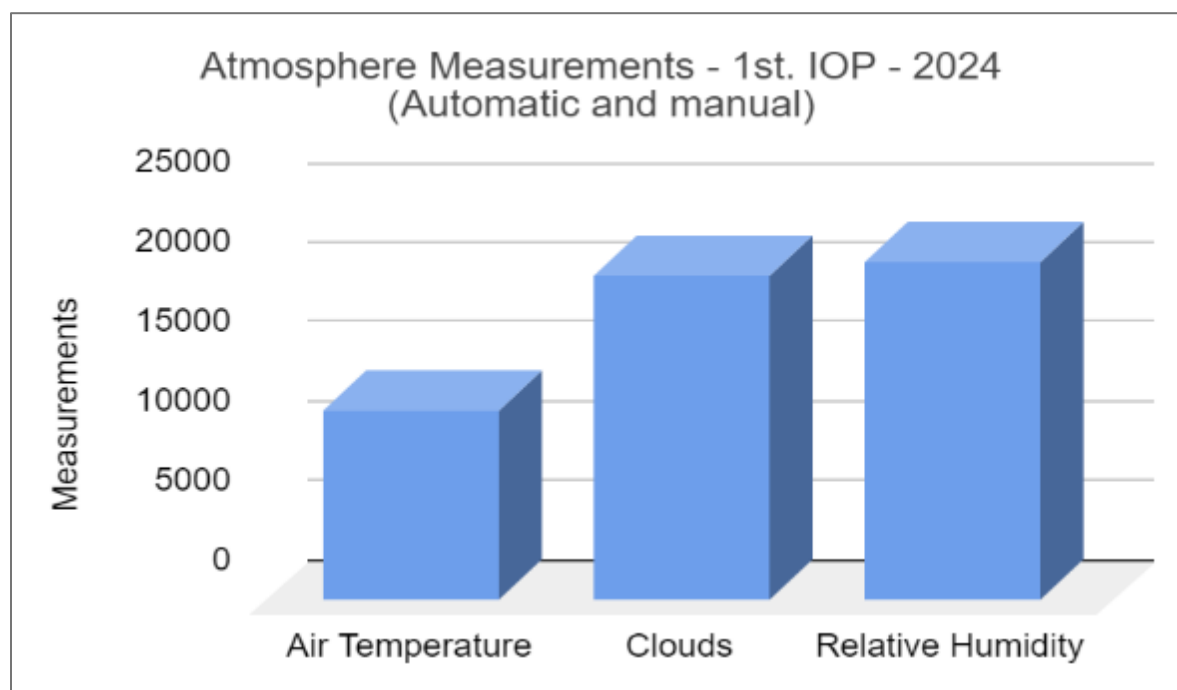
IOP (Intensive Observation Periods) - Campaign 2024



1st April - 10 th May
55,982 data

Next Campaign IOPs:

- July 1 to August 10, 2024 (Winter)
- October 1 to November 10, 2024 (Spring)



Optional: (considering the Caribbean school year)

- January 15 to February 15, 2024

Recommended: registration of at least **two protocols** in each period



Photo contest

Contest for students from elementary school to University.

The contest took place from March 1 to April 15

TREES WITHIN LAC'
CAMPAIGN YEAR 2



Photography Contest

"Celebrating the Connection Between Trees, Climate, and People"



Registration link in the description

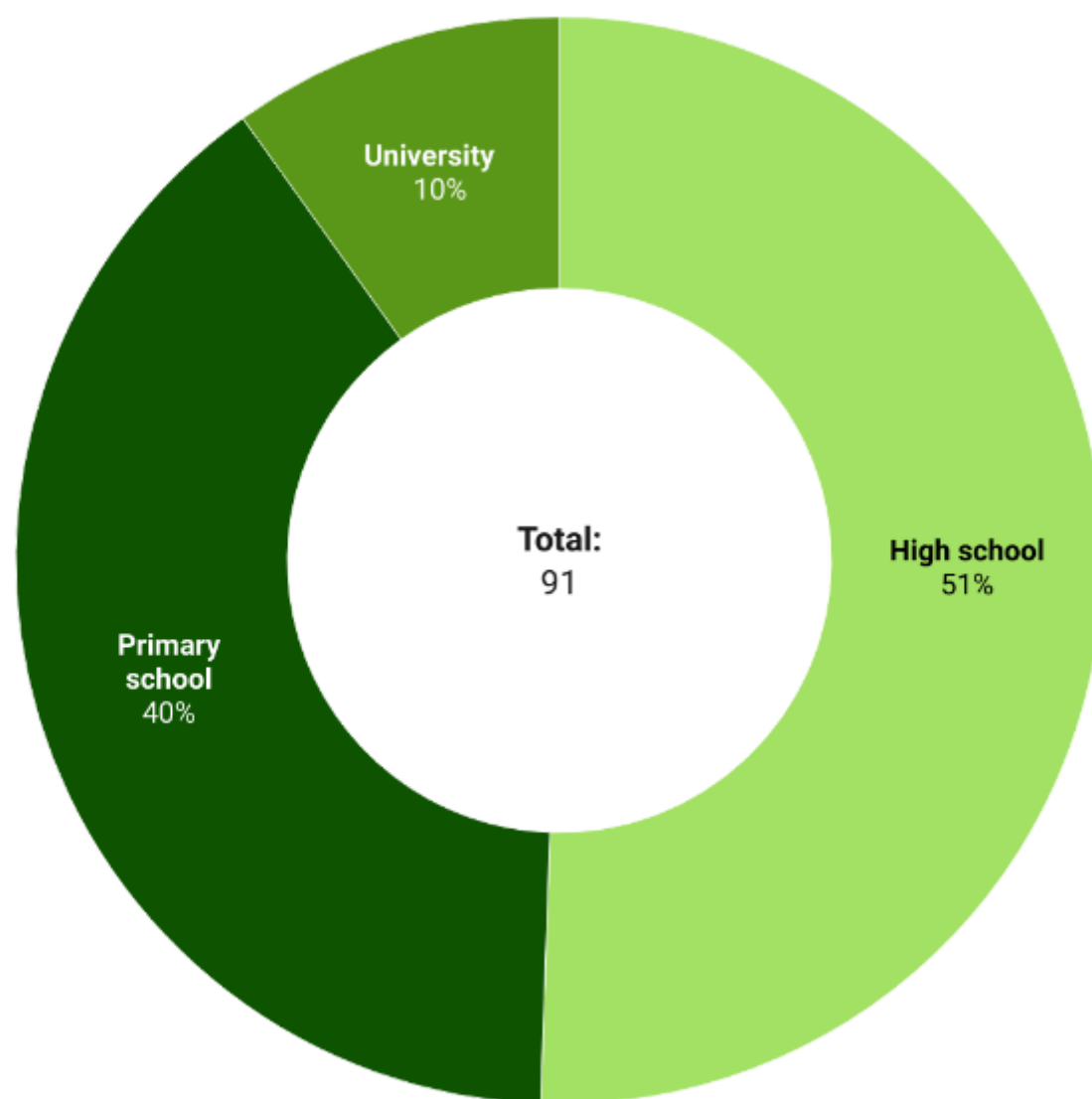
DEADLINE OPEN UNTIL APRIL 15TH

Sponsored by:  Supported by:    Implemented by:  UCAR



Announcement of the Photography contest winners 2024

Participation by educational levels



Creado con Datawrapper

Countries that sent photos of trees



Created with Datawrapper



Winning photographs by category



Secondary School

1st place:
Juan Ignacio Hernández, 18.
6to. year

Teacher: Emiliano Vinocur
EETP 449
Acebal, Argentina



Primary School

1st. place: Shared
Giannara Alviso, 6
1st. grade

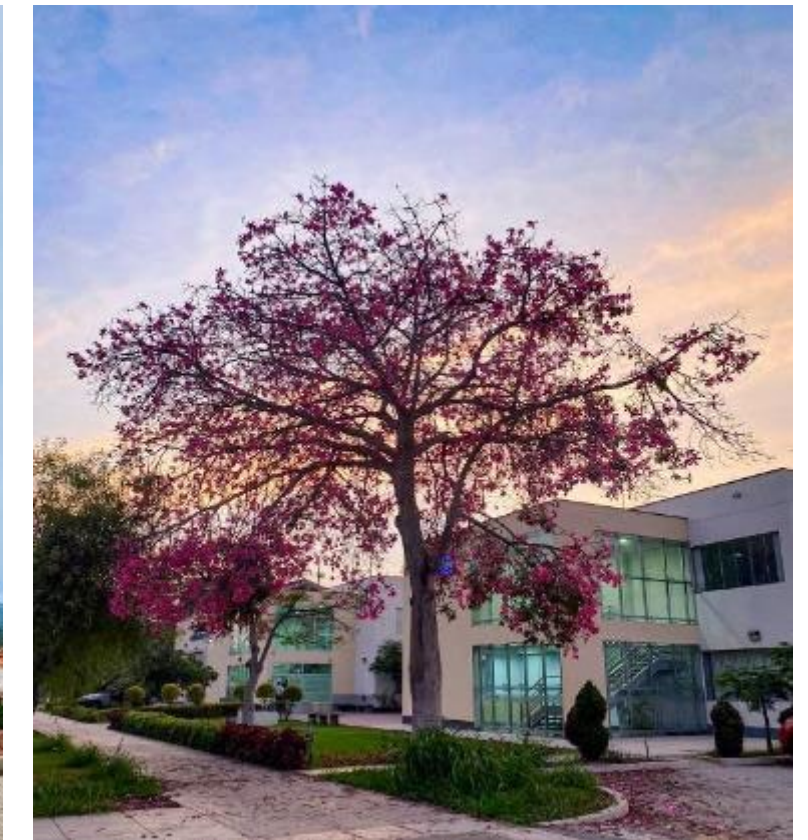
Teacher: Bárbara Camacho
Colegio de la Asunción
Paraguay



Primary School

1st. place: Shared
Dante Speratti, 9
3rd grade

Teacher: Bárbara Camacho
Colegio de la Asunción
Paraguay



University Category

Ruth Milagros Valiente, 23
Pregrader

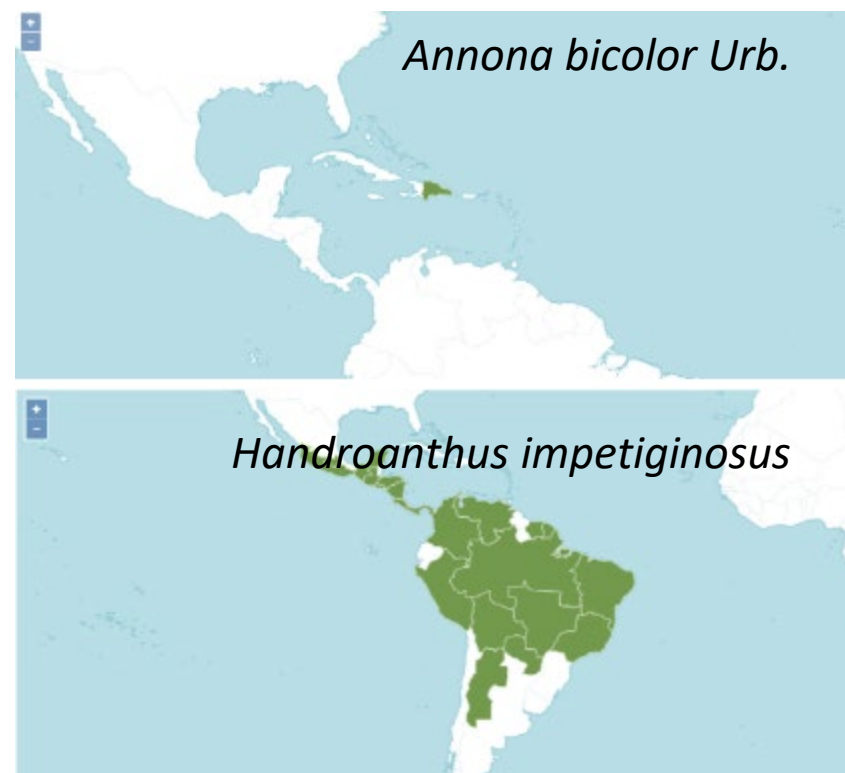
Teacher: Claudia Caro Vera
Universidad Agraria La Molina
Lima, Perú



GLOBE tree database expanded - Thanks GLOBE!

20,500 tree species from Latin America and the Caribbean added

Species distribution



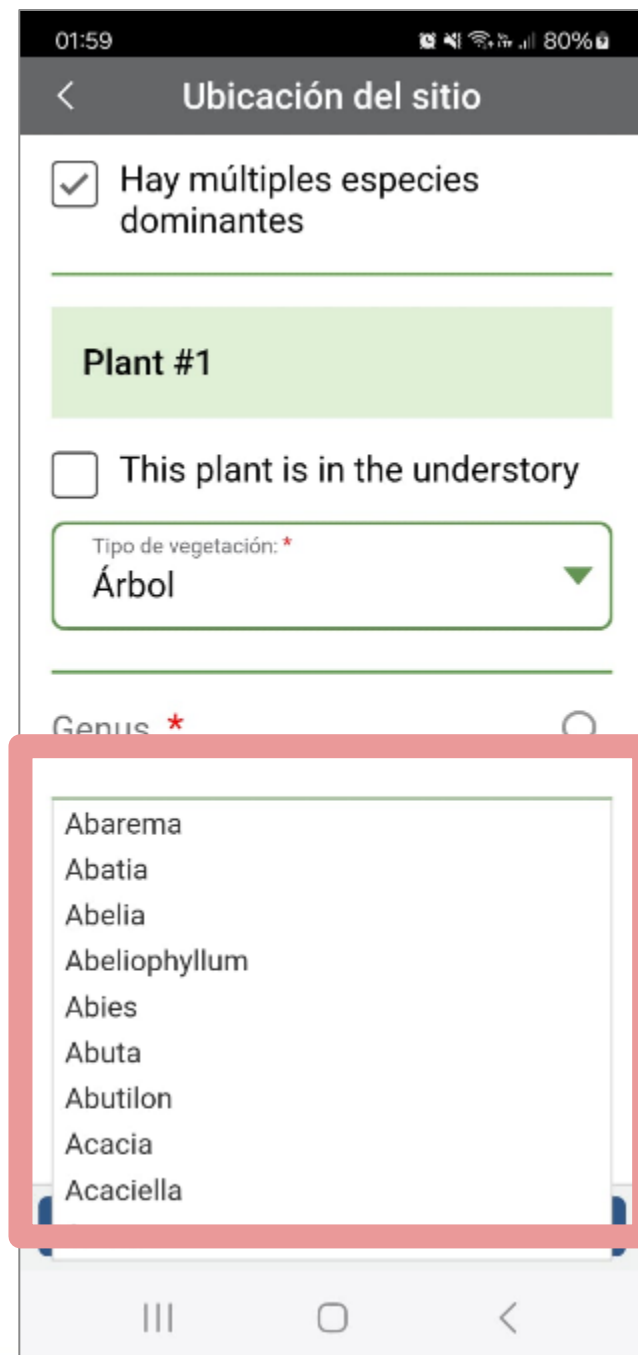
Data from the Protocols (of LAC tree species) can be uploaded:

- Green Up
- Green Down
- Carbon cycle

Species search process

1. We looked for the list of **species by country** in [Botanic Gardens Conservation International](#).
 - The list has the following format: Family, Genus and Species
2. We searched the [Catalog of Life](#) for **information about Phylum, Class and Order**.
 - We placed the link in Phylum showing Class, Order and family.
3. We searched the [Tropicos.org](#) database for **families that are not in Catalog of Life**.
 - Then we put the link in Genus or Species.
4. Finally we **checked with national inventories** of tree species and with requests from GLOBE teachers for species that were not in GLOBE Observer and on the website.

Note: The list included only trees native to Latin America and the Caribbean.



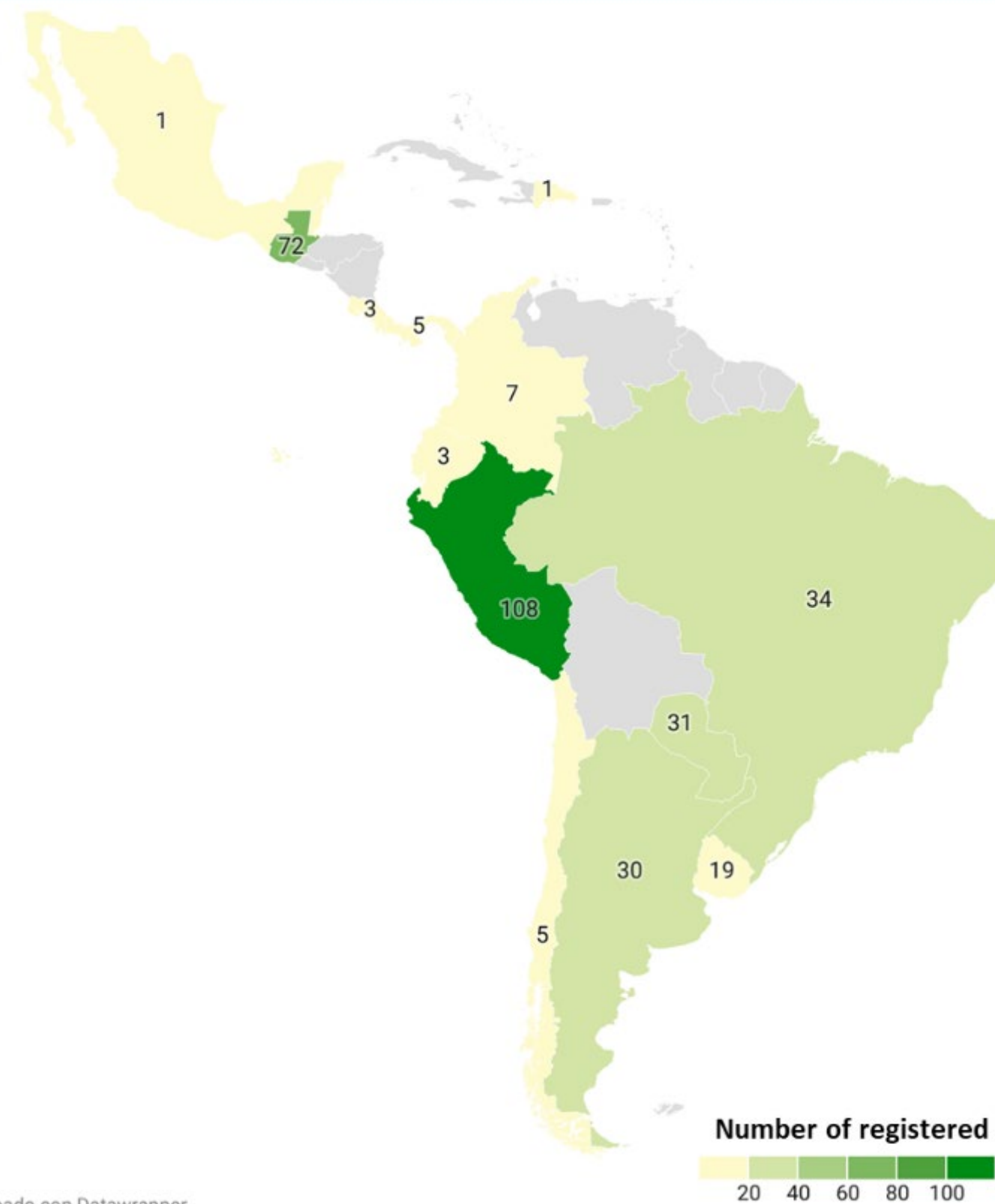


The Campaign in numbers 2024

Items	Numbers
Total registered to the campaign:	322
Total people who have attended the webinars:	217
Total number of teachers, schools or citizen scientists who have carried out measurements in the campaign:	179
Countries that submitted data:	19 (Argentina, Bahamas, Belize, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Panama, Paraguay, Peru, Dominican Republic, Suriname, Trinidad & Tobago, Uruguay)



Countries of origin of those registered for the campaign in 2024



Creado con Datawrapper



Workshops for teachers training



7 workshops: (March-June 2024)

GLOBE Introduction

Biosphere Introduction

Green down - Green up

Carbon cycle-Modelling-Standard site

Land cover classification - Canopy and land cover

Tree height and Circumference

Atmosphere Introduction

Air temperature - Surface temperature - Precipitations

Clouds - Relative humidity - Barometric pressure - Wind

Data uploading - Students accounts - Beginning a research project

Evaluations



Workshop on Biosphere and Atmosphere



<https://bit.ly/4eEhhtj>



- 11 Countries involved
- 159 Teachers participating in one of the workshops at least.

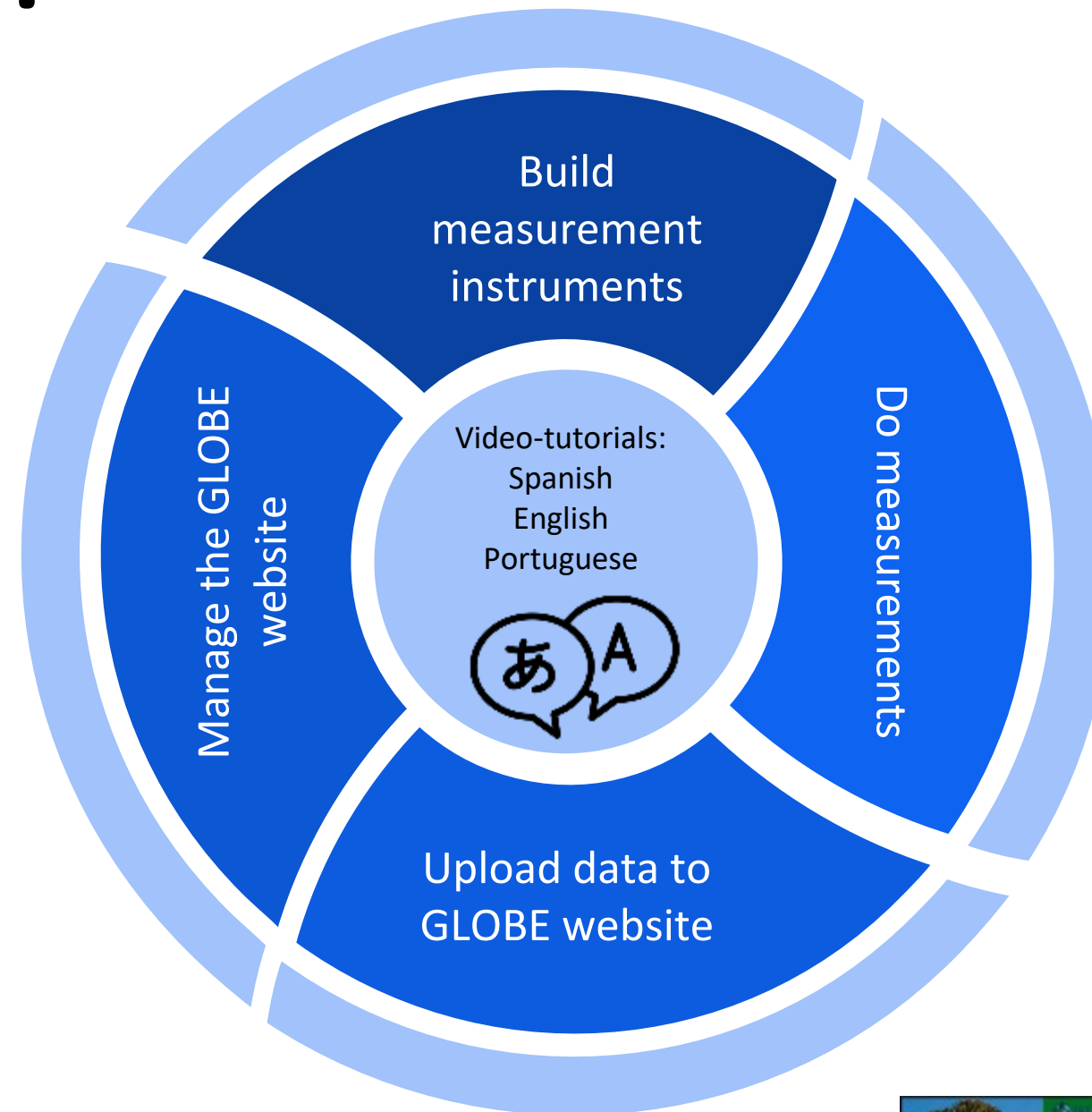


Tutorials 2023-2024:

- How to build a densiometer
- How to build a clinometer



- Download, visualize and process data
- Create a study site
- Creating student accounts



Manual measurements:

- Canopy and ground cover
- Tree height measurement using a clinometer

Measurements with GLOBE Observer:

- Tree height with GLOBE Observer app
- Land cover with GLOBE Observer app
- Clouds with GLOBE Observer app

Satellite information resources

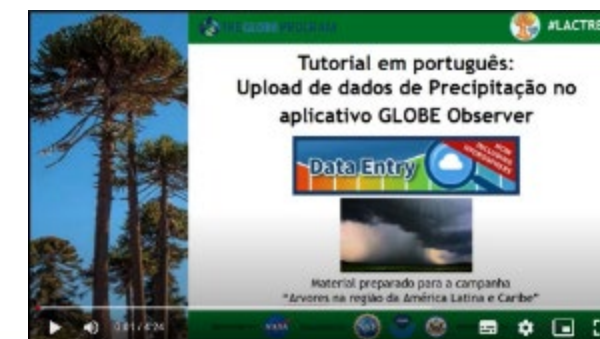
- OpenAltimetry



Access the Tutorials of the Trees within LAC Campaign here:

- [Año 1](#) (Year 1)
- [Año 2](#) (Year 2)

- Uploading Precipitation data
- Uploading Air temperature data
- Uploading Surface temperature data
- Uploading Wind data
- Uploading Green-down data
- Uploading Relative humidity data





Student's podcasts

Interviews with outstanding students from the LAC region about their projects, school and future research.



<https://www.globe.gov/web/latin-america-and-caribbean/home/trees-within-lac/a%C3%B1o-2-%7C-year-2/podcasts>



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Thank you so much!

Questions?



GLOBE LAC link: <https://www.globe.gov/web/latin-america-and-caribbean>