



# ANNUAL REPORT

2023



Performed by

*Patricia Rincon*

*President*

# Letter from the President

01



**Patricia Rincon**  
Chairwoman

*We thank all those interested in helping the planet and humanity to live in increasingly higher survival conditions, supporting our innovative proposals to solve climate change, mitigate natural disasters, contribute to the expansion with sustainable development without inequalities in terms of human and environmental rights. We hope to continue helping make this our mission a reality.*

## ***OTHER BOARD OF DIRECTORS***



**Treasury Griselda Méndez**

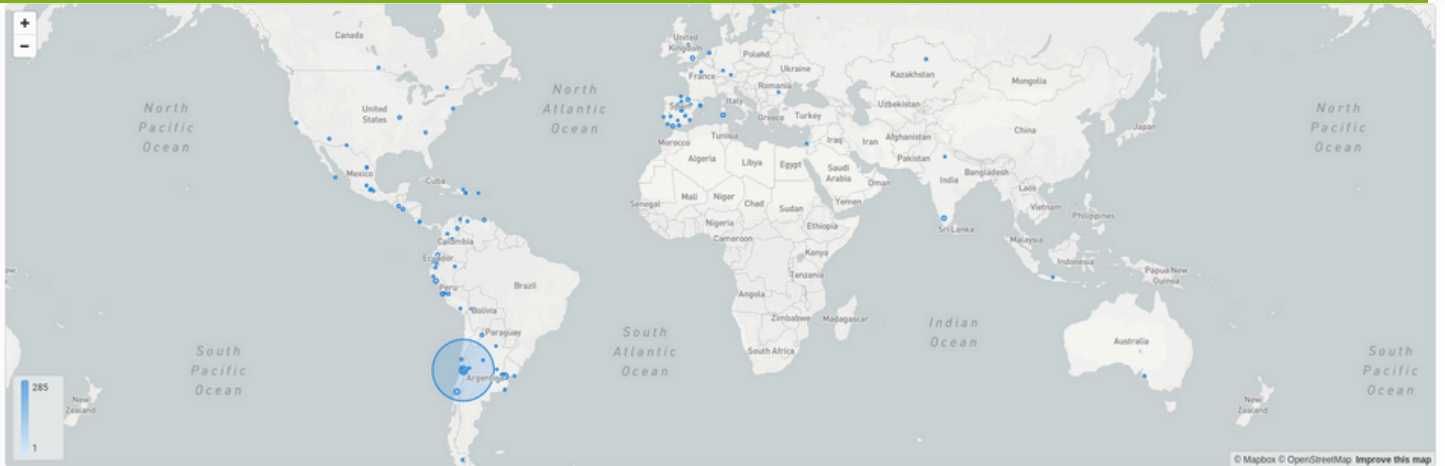


**Secretary Tamara Greaves**

# INTERNATIONAL REACH

02

## TRAFFIC BY LOCATION OF WWW.ONGARCATIERRA.ORG



### 285 Cities in 43 Countries

International impact



23,2K



47.3K



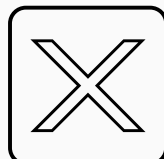
90.4K



1K



1K



1K



6.3K



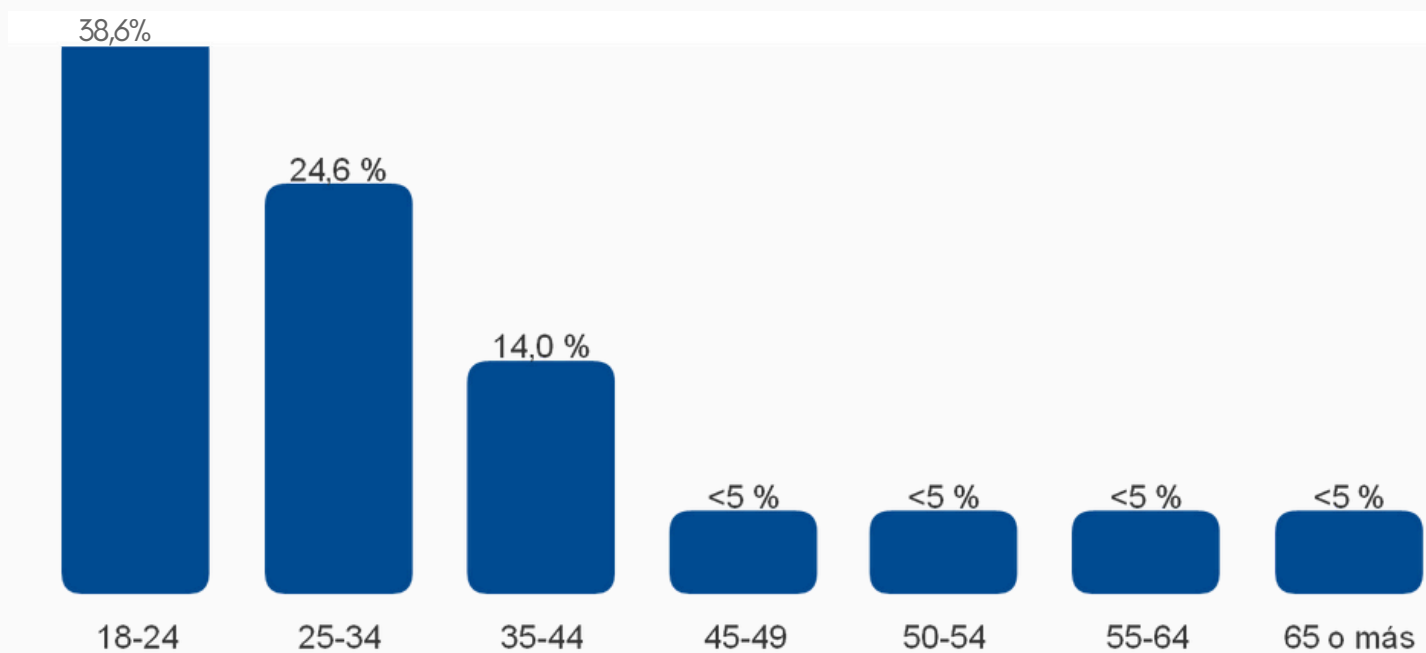
1K

[www.ongarcatierra.org](http://www.ongarcatierra.org)

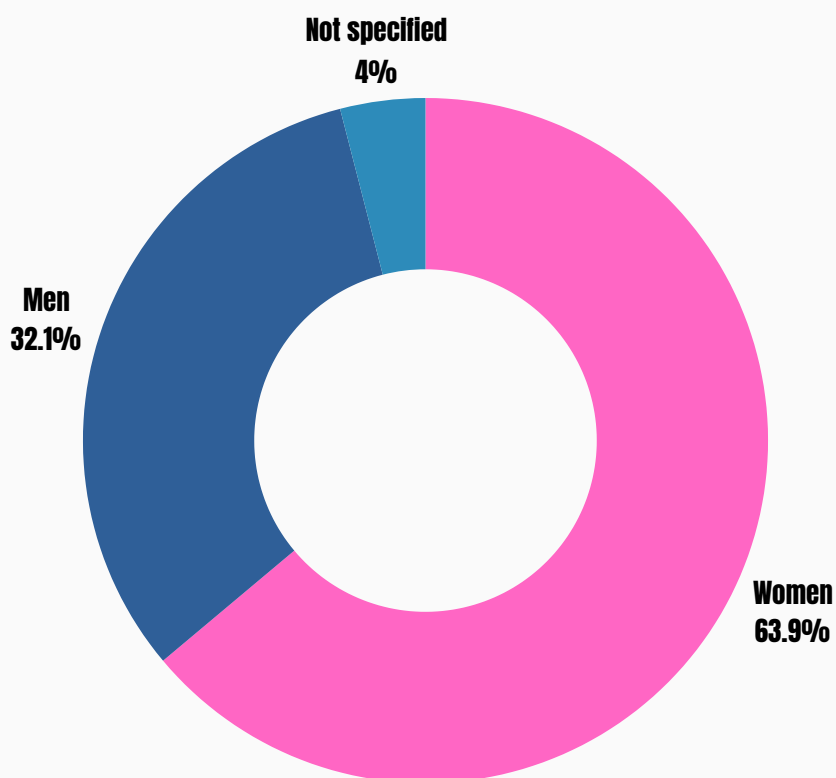
# HEARINGS

03

## AGE



## GENDER





# OPEN EDUCATION

04

## Online courses



- ✓ The first steps to solve climate change
- ✓ Technological innovations to create the tools to save the Earth
- ✓ Systems to Purify the Air and Water of Cities, the Atmosphere and the Oceans
- ✓ Geoengineering techniques to reduce typhoons, cyclones, hurricanes and tornadoes
- ✓ Organization and Models of Cities for Sustainable Development
- ✓ Evolution of management policies for sustainable development
- ✓ How to take action against global warming

[VIEW ONLINE COURSES](#)

*We continue to provide open education to use cutting-edge technologies that we evaluate as functional and our proposals for innovation in technologies and management models to meet the goal of our strategic plan 1 Climate:*

**LAY THE FOUNDATIONS OF A CIVILIZATION CAPABLE OF SOLVING CLIMATE CHANGE, SURVIVING NATURAL DISASTERS, RECOVERING AND CONSERVING NATURAL RESOURCES, WITH QUALITY OF LIFE THROUGH SUSTAINABLE DEVELOPMENT AND EQUAL HUMAN AND ENVIRONMENTAL RIGHTS.**

# BENEFITED STUDENTS

 PLATAFORMA TUTELLUS

401 STUDENTS

 ON OUR PLATFORM  
[www.ongarcatierra.org](http://www.ongarcatierra.org)

612 STUDENTS

## Testimonials



**OPEN EDUCATION**

**04**

*"I consider it to be a very interesting course that touches on a topic that concerns the entire population of the planet. The teacher addresses it effectively and explains the concepts very well." Gabriela Acuña Rangel*

*"I really like it because it is new and easy to explain." Daniella Montesino Pereira*

*"I was looking for a course on climate change and I found one on that topic. But totally different in everything! It is made by a girl who is a genius and looks for solutions but taking into account something that no one had taken before. What a find I have made!!!!" Alberto Compes Lorza*



# DIDACTIC MATERIALS

CONTENT DEVELOPMENT, EDITING AND PUBLICATION

06

## Sounds of the Earth



**AVAILABLE IN OUR ONLINE BOOKSTORE**

*The magazine that will mark a milestone in the monitoring and prediction of geological disasters, with cutting-edge technologies and our innovation proposals. We will show you how catastrophes can be avoided through modern and innovative construction techniques and how to protect the magnetic field from climate change.*

**01** CURRENT TECHNOLOGIES FOR THE PREDICTION OF GEOLOGICAL DISASTERS

**03** FACTS AND THEORIES TO CONSIDER FOR INNOVATION

**11** PREDICTION TOOLS THAT WE NEED TO IMPROVE AND INNOVATE

**17** HOW TO AVOID CATASTROPHES THAT CAN BE PREVENTED?

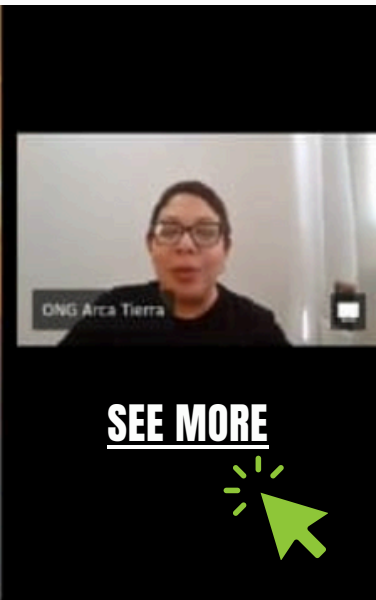
**25** HOW SHOULD WE REBUILD?

**27** MAGNETIC FIELD AT RISK OF DISAPPEARING



# INNOVATION EVENTS

ONLINE AND IN PERSON



**IN SCHOOLS, NEIGHBORS' MEETINGS... TO CHILDREN, YOUNG PEOPLE AND ADULTS**



*Education to develop innovations for the prediction and mitigation of geological disasters and take protective measures against earthquakes. In online workshop, video on YouTube, radio broadcast on a Spanish-speaking station that is broadcast to Spain and America, in-person workshops.*



# LEADERSHIP OF WOMEN IN SCIENCE



**21 youth innovation  
teams (15-17 years old)**

In high schools, young people were motivated to form innovation teams led by women and formed with gender equality and to study STEM careers.

**BENEFITED STUDENTS  
13K STUDENTS**



## Students of the “Sounds of the Earth Project”

The young women formed innovation teams, expressing their interest in disseminating and promoting the innovations proposed in the magazine.



# INNOVATION



## PROPOSALS FROM THE NGO ARCA TIERRA

# Tree Building

## A Solution to the Housing Deficit

**GREEN-GRAY TREE BUILDING:**  
**PREFABRICATED AND MODULAR**  
**CONSTRUCTION: TREE AND ROOTS**

**TRUNK MODULES**  
**15 LEVELS 5M C/U= 75M**

15M	HEIGHT 3 FLOORS= 15M
20M	HEIGHT 5 FLOORS= 25M
25M	HEIGHT 7 FLOORS= 35M

**INDUSTRIAL BIODIGESTERS FOR SEWAGE TREATMENT AND USE OF MICROALGAE WASTE FROM PHOTOBIOREACTORS, ORGANIC WASTE FROM RESIDENCES AND THE FARM TO PRODUCE NATURAL GAS, ELECTRICITY AND BIOFERTILIZERS**

**IN ITS ROOTS:**  
 • PARKING AND ELECTRICAL CHARGING THROUGH UNDERGROUND HYDROELECTRIC PIPES AND WATER FALLS  
 • STORES OF RESERVES OF FOOD, MEDICINES, EQUIPMENT AND SUPPLIES FOR EMERGENCIES  
 • SHELTERS

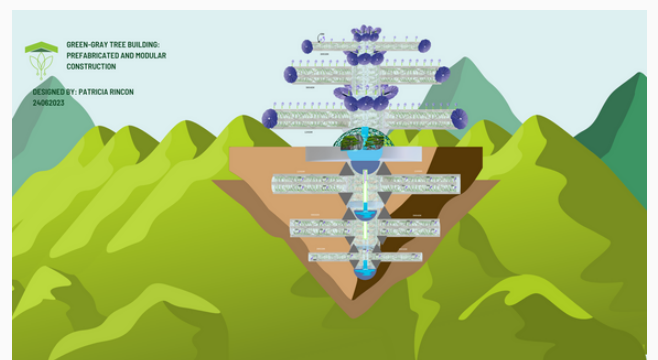
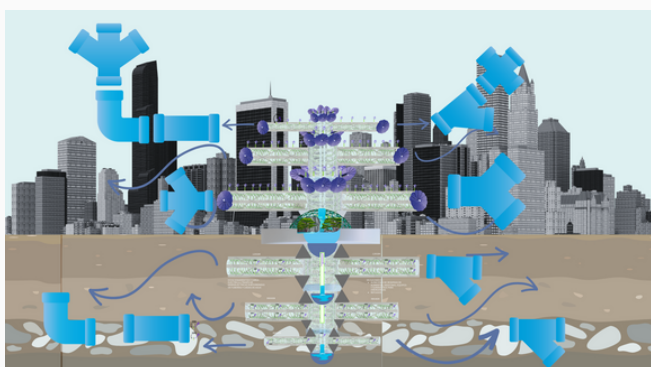
**ARRANGEMENT OF THE BRANCHES**

2-4 BRANCHES CAN BE ARRANGED IN EACH TRUNK FOR GREATER RESISTANCE

**RESIDENTIAL UNITS**

IN EACH TRUNK, 2-4 BRANCHES CAN BE ARRANGED IN BALANCE FOR GREATER RESISTANCE, BEING ABLE TO HOUSING UP TO 400 PEOPLE WHO WILL HAVE EMPLOYMENT, PRODUCE THEIR ENERGY AND WATER AND WITH HOUSING FINANCING PLANS, WILL HAVE ACCESS TO EDUCATION, JOB TRAINING AND DAYCARE SERVICE.  
 THE BRANCHES OF THE TREE CAN BE EXPANDED AND HOST MORE PEOPLE.

*There is a global housing crisis; according to the UN, more than 100 million people in the world are homeless, a figure that increases due to natural disasters that leave more than 14 million people homeless each year. By virtue of facing this situation, we designed a sustainable smart building to solve this problem with social and economic integration. If you want to build a tree building in your city, write to us at [info@ongarcatierra.org](mailto:info@ongarcatierra.org)*





# INNOVATION

## PROPOSALS FROM THE NGO ARCA TIERRA



### Green-Gray Mountain

#### Orographic barrier to stop and reverse desertification

**SKETCH OF THE GREEN-GRAY MOUNTAIN**  
By Patricia Rincón

**DIMENSIONS**  
500m altitude/1500m sides, approximately 30 terraces, the terraces reduce as you ascend and the altitude of each one ranges between about 15m each

**MATERIALS**  
The main ones are: desert sand and melted igneous rocks as a binder, similar to Teotihuacan cement. And steel pivots reinforced with printed volcanic rocks.

**CONSTRUCTION TECHNIQUES**  
3D printers, to manufacture parts, reinforce pivots with sand cement and molten igneous rocks and print exterior and interior walls

**DIMENSIONS OF THE TERRACES**

The approximately 30 terraces will be arranged like Mesoamerican pyramids, on a slope, but with a curved shape, not very inclined, to promote natural runoff and preserve its vegetation layer. As they ascend they become smaller and the average altitude of each one ranges between 15m.

**PARALYSIS (QUANATS)**

Where pivots will be installed, quanat can be built for thermal comfort and to store runoff water.

**UNDERGROUND ROOMS:**  
Approximately 35m for 10 underground floors, possibly for parking, warehouses, food and microalgae production centers in aquaponics and hydroponics systems with LED lights.

**BASE:**  
Foundation to give greater stability.

**AQUIFER:**  
Connected to the water networks on its perimeter, about 100m deep for an aquifer that stores rainwater runoff. It will be like a cenote, just like the cenote under the pyramid of Kukulkan, in Chichen Itza, connected to other water sources. For the Mayan civilization, cenotes and underground rivers were very important.

*Conceptual design of Green-Gray Mountains to stop the advance of the Sahara and hunger, reversing desertification and improving the quality of life, to make a prosperous region.*

*This project is part of our Program for Sustainable Development in the Sahel, known as the "Hunger Strip" in Africa.*

*If you want to support this project, write to us at [info@ongarcatierra.org](mailto:info@ongarcatierra.org)*



#### **The STONE Spray experimental robot for 3D printing with sand and an ecological compound.**

We propose improvements in materials with volcanic rocks and sand under pressure to produce graphene or a very resistant material similar to pyramids that have resisted hundreds of years.



#### **Nüwa, a vertical city carved into the rock, is a Spanish project, selected by Mars City as a viable civilization on Mars.**

We propose a city within the mountain, where food, water, renewable energy and plant matter are produced to reverse desertification. And it will be used to experiment colonization on other planets and satellites



# INNOVATION

11



PROPOSALS FROM THE NGO ARCA TIERRA

## Hunger and Poverty Eradication Project

Through self-consumption of water, renewable energy and nutritious food



*Through the use of the WATER-ENERGY-FOOD CIRCUITS innovation license, which we have the right to use for non-profit projects, we create, in the months of January and part of February, projects to eradicate hunger and poverty, because these problems have worsened due to impunity for crimes against humanity, the genocide against Ukraine and global terrorism, which affect developing countries and food producers, for which food catastrophe and poverty are predicted, but thanks to This innovation provides us with tools to eradicate them. If you want to support these projects, contact us at [info@ongarcatierra.org](mailto:info@ongarcatierra.org)*

# SOME OF OUR CAMPAIGNS

12



**We teach an innovative program that contains projects to be carried out on the continents, to save the oceans.**

[READ MORE](#)



**We promote justice campaigns against states and terrorist groups**

because they are the main cause of forced displacement

[READ MORE](#)



# SOME OF OUR CAMPAIGNS

13

## Innovation, education and action for humanitarian assistance

We show our recommendations to face the serious crisis of forced displacement, with our innovation of the "Sustainable Shelters" model



[READ MORE](#)

We continue teaching how to create sustainable development in rural and urban areas, in different geographies.

[READ MORE](#)



# SOME OF OUR CAMPAIGNS




We show our proposal to achieve gender equality in less than a decade

[READ MORE](#)




HELP US INCREASE OUR IMPACT!

CONTACT INFORMATION

 [info@ongarcatierra.org](mailto:info@ongarcatierra.org)



 [www.ongarcatierra.org](http://www.ongarcatierra.org)