

Annual
report 2021
- 2022



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Ciudadanos del Karso (Citizens of Karst)

Scientists use the term karst to describe a topographic formation produced by chemical and physical processes by which water dissolves the limestone soil and creates a spectacular landscape that includes caverns and large aquifers.

Karst in Puerto Rico constitutes more than a quarter of the territory, and is much more than a topographic formation of scientific interest. It is a natural system of great ecological and cultural value; a dynamic and essential system for living beings, including humans, in the past, present and future... and it is in danger. We need you to value and conserve it. Get to know it and fall in love with it.

[Learn more](#)

Message from the president



On behalf of the Board of Directors of Ciudadanos del Karso (Citizens of the Karst) (CDK), I wish to express our sincere appreciation for the support provided through volunteerism and monetary donations. Such support has enabled us to accomplish the tasks scheduled in our 2021–2022 Strategic Plan.

The protection of karst, which is CDK’s primary goal, is vital to a variety of natural as well as cultural systems. These include the aquifers of Puerto Rico’s northern region and a collection of caves in which rock art, archaeological remains of indigenous ancestors, and the history of paleontological remnants are redefining the Caribbean and American past, present, and future. Protecting and conserving karst also helps to address certain short-, medium-, and long-term social and economic challenges, such as the proliferation of urban development projects that ignore regulations and blatantly attack the natural and cultural heritage of Puerto Rico and the Caribbean. Another important challenge is global warming due to climate change, which, according to scientific projections, will bring with it a decrease in rainfall and a rise in sea levels.

Situations such as these will adversely impact not only the unconfined aquifers of the coasts –which implies a reduction in the availability of water– but also cultural spaces and systems that are fundamental to our identity as Puerto Ricans and as part of humanity.

Over the years, CDK has reaped significant achievements and recognition. The most important milestone has been the approval of the Plan and Regulations of the Karst Special Planning Area (PRAPEC), through which more than 232,000 acres of karst have been protected for their hydrological, geological, and ecosystemic value. In addition, in this report we would like to highlight two projects on which we have been working intensely: the **Mata de Plátano Field Research Station** in the Dominguito neighborhood of Arecibo and the development of the **Karst Institute of Puerto Rico and the Caribbean**.

The Mata de Plátano field research station, located in the Dominguito neighborhood of Arecibo, is the only established karst research station in Puerto Rico and one of the few in the Caribbean. It is located in a natural reserve of 110 acres of land, where researchers and students from Puerto Rico, the United States and other countries, specialized in various disciplines, ranging from physical sciences and social sciences to humanities, are welcomed.

The aftermath of Hurricane Maria and, later, the COVID–19 pandemic caused a lack of adequate maintenance to the station for approximately four years. However, thanks to volunteers, it was possible to relocate water lines, cisterns, and electrical distribution cables. Additionally, we were able to waterproof the roof. Work is currently underway to design additional renovations to increase the capacity of the station’s physical facilities and turn it into a space capable of receiving more visitors, providing training, and holding various kinds of events. In addition, in order to make the station more sustainable and alleviate the recurring problems of lack of water and electricity, we intend to install renewable energy systems and collect rainwater for reuse.

Message from the president



In the process of refurbishing the facilities and planning the project, even before said tasks were completed, we witnessed the catalytic power of Mata de Plátano and its environment. In observing our efforts, researchers from Puerto Rico and the United States have been inspired by what has already been accomplished and have expressed their interest in committing to the Mata de Plátano station, which they consider to be an important nucleus for education, research, and cohabitation in the middle of Puerto Rico's northern karst forest.

Something similar has happened –albeit on a larger scale– with respect to CDK's second major project: the development of the Karst Institute of Puerto Rico and the Caribbean. Located in the center of the town of Arecibo, the Institute will be housed in a historic art déco building that once housed the Roosevelt Elementary School (closed in 2006). CDK received the property title to the building from the Government of Puerto Rico at the end of 2016. The first floor of the Institute's headquarters will house the Museum of Natural History of Puerto Rico and the Caribbean (the first of its kind in Puerto Rico), and on the second floor, we plan to develop a research center.

During the years 2021 and 2022, we developed the business plan for the Karst Institute of Puerto Rico and the Caribbean, worked on the preliminary plans for the headquarters, lead and asbestos studies were conducted on the building, and the space was declared a historic building. In addition, one hundred and fifty scientists from various disciplines contributed pro bono to the collection and organization of the museum's content in nine thematic rooms. The content –from educational material on star and planet formation to exhibits on the fundamentals of a sustainable human ecology– is more than science: it is a story that seeks to promote citizen participation in building a positive and hopeful Anthropocene. As an immersive and interactive experience, the museum will educate visitors, as well as inspire and encourage them to act responsibly. In the words of one of the collaborators of this project: “Without love there is no science, and you can't love what you don't know”. The museum, then, is a unique project whose impact transcends the national level and acquires regional and international importance in terms of education, research, and knowledge of the natural history of Puerto Rico within the context of the insular Caribbean.

The Karst Institute of Puerto Rico and the Caribbean will also be a space of the community and for the community, to host cultural events and, in cases of an emergency due to natural phenomena –hurricanes, floods, earthquakes– to provide relief and support. We hope that the Institute will be the positive and vital fulcrum in which relationships and processes beneficial to the country and its regional and international surroundings are articulated.

We will soon be launching a campaign to publicize this project and collect donations from individuals and organizations in commerce and industry, banking, and other sectors of the country. To learn more about the project and, particularly, about the improvements to the building where it will be headquartered, you can watch an informative video clip that can be accessed through the following link: <https://cdk-pr.org/>.



Mission and vision



Mission

To research, educate and conserve natural systems, particularly karst systems.



Vision

We protect nature, particularly Puerto Rico's karst systems, promoting the sustainable use of the soil and its resources through education and scientific research.

Other achievements over time

Cooperative agreement with the Inter-American University of Puerto Rico for the conservation and management of the Mata de Plátano Nature Reserve.

Declaration of Caño Tiburones, the largest herbaceous wetland in Puerto Rico, with a vast diversity of flora and fauna, as Caño Tiburones Natural Reserve.

Support in the drafting of bills that have become laws:

- Act No. 241 of 1999
(New Puerto Rico Wildlife Act)
- Act No. 292 of August 21, 1999
(Act for the Protection and Conservation of the Karst Physiography of Puerto Rico)

Agreement with the Forest Legacy Program (PLF) of the U.S. Forest Service for the conservation of 2,800 acres of land in the northern karst region.

Production of the video "The Roots of Water" on the importance of the karst region and aquifers.

Co-authored and translated the specialized technical report "Puerto Rican Karst - A Vital Resource" (compendium of research conducted by scientists specializing in various areas for the same natural region, published by the U.S. Department of Agriculture in conjunction with the Forest Service).

Obtained property title to the building that housed the Roosevelt Elementary School in downtown Arecibo to establish the Karst Institute of Puerto Rico and the Caribbean.

Many of CDK's accomplishments are not measured by number of events or products, but are rather appreciated through its ability to generate new projects, chart new points of view and foster new collaborations with organizations and institutions such as the following:

PROTECT (Puerto Rico Testsite for Exploring Contamination Threats) - Investigation of environmental pollution in water and its adverse effects on human births.



University of Dresden (Germany) - Soil moisture monitoring network to characterize karst recharge and evapotranspiration in five countries.

Coastal Cave Survey - A US-based NGO dedicated to the systematic study and documentation of karst resources throughout the Caribbean, including Puerto Rico.



NATIONAL
SCIENCE
FOUNDATION



NATIONAL
ENDOWMENT
FOR THE
HUMANITIES

Awards received



For its work, CDK has received multiple recognitions from schools and universities, as well as government agencies and other institutions:

- International Institute of Tropical Forestry of the Federal Forest Service (or environmental education on karst)
- Interamerican University of Puerto Rico (for research work)
- Fundación Comunitaria de Puerto Rico (recognition of outstanding NGO for its work)
- Puerto Rican Planning Society (Friend of Planning Award)
- Miranda Foundation of Puerto Rico (Solidarity Award)
- International Union of Speleology (HABE Award for the conservation of the Karst of Puerto Rico, awarded in Slovenia)
- Karst Water Institute, Washington, DC (Groundwater and Karst Award, University of Virginia Water Karst Institute)
- V Public Health Conference, University of Puerto Rico Medical Sciences Campus (for contributing to Puerto Rico's health)
- Environmental Protection Agency (Environmental Champion Award)

Our work

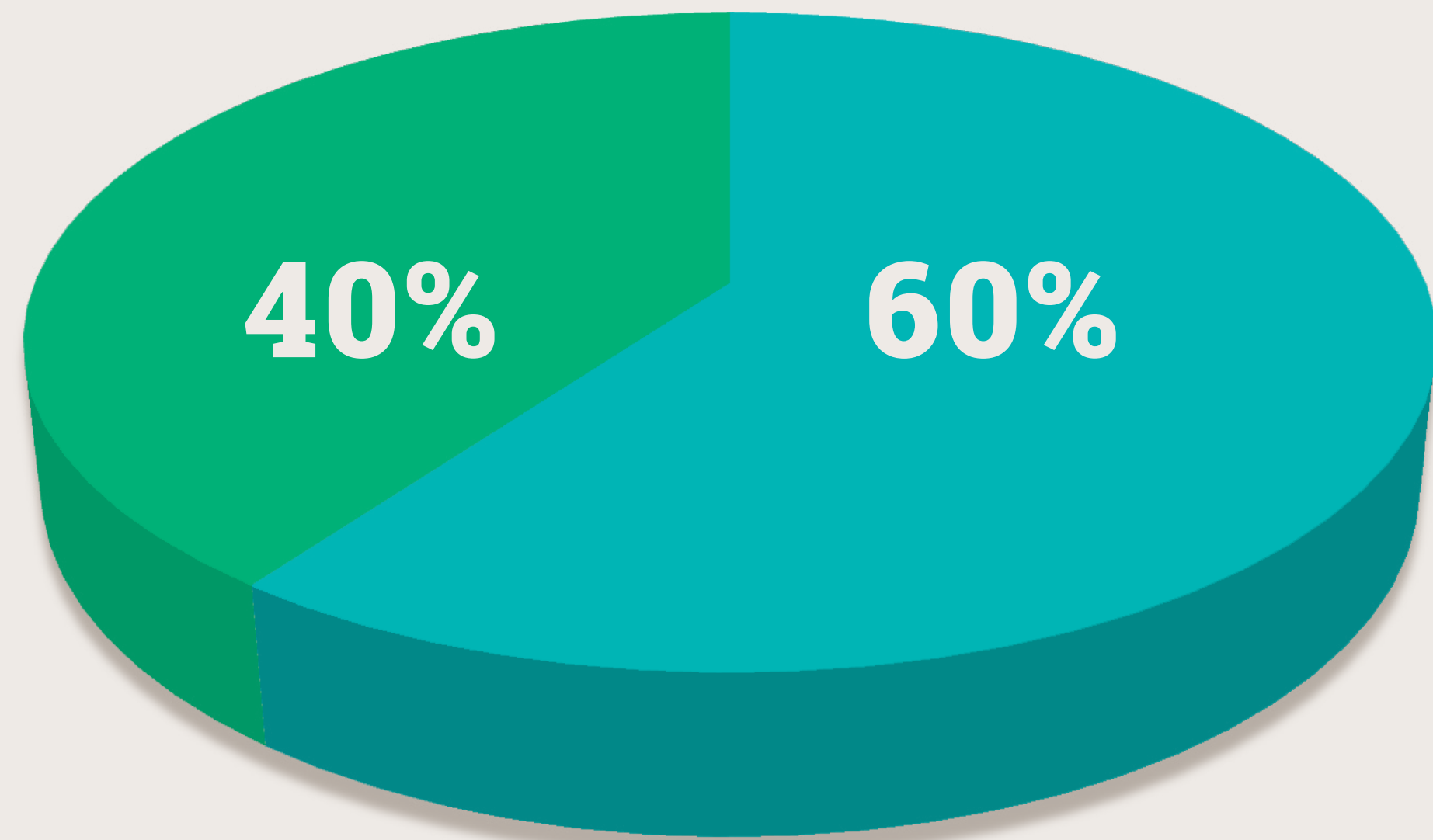


Since 1994 we have been conducting research on karst, educating about its importance, and protecting its natural systems. Some of the most important initiatives in which we have participated are the following:

<p>Pilot project for the recovery of the sapo concho (Puerto Rican crested toad)</p>	<p>We support the reintroduction of this species in the karst strip in the north of the island.</p>	
<p>Maps on the impact of global warming in Puerto Rico</p>	<p>In response to the 2007 report of the Intergovernmental Panel on Climate Change, CDK prepared maps to determine the impact of sea level rise in various parts of Puerto Rico, in order to determine its effects on human infrastructure.</p>	
<p>Dr. Agustín Stahl Award</p>	<p>CDK awards the Dr. Agustín Stahl Award to honor a scientist who has made exceptional work in the natural sciences and whose work has resulted in significant contributions to Puerto Rico, the Caribbean region, and the world.</p>	
<p>Mata de Plátano Field Research Station</p>	<p>Located in the Mata de Plátano Natural Reserve, 7 km from Arecibo, it is a study space for researchers, professionals and students.</p>	
<p>Botanical studies in the karst</p>	<p>We sponsor botanical studies of the karst that disseminate its natural wealth and document rare and little-known plant species. In addition, we curate plant museums (herbariums) with collections accumulated over more than a century.</p>	
<p>Forest inventory of the northern karst belt</p>	<p>We analyze tree assemblages and conduct forest inventories in karst areas.</p>	
<p>Land acquisition and conservation</p>	<p>Protecting and conserving Puerto Rican karst lands is a fundamental part of our mission.</p>	

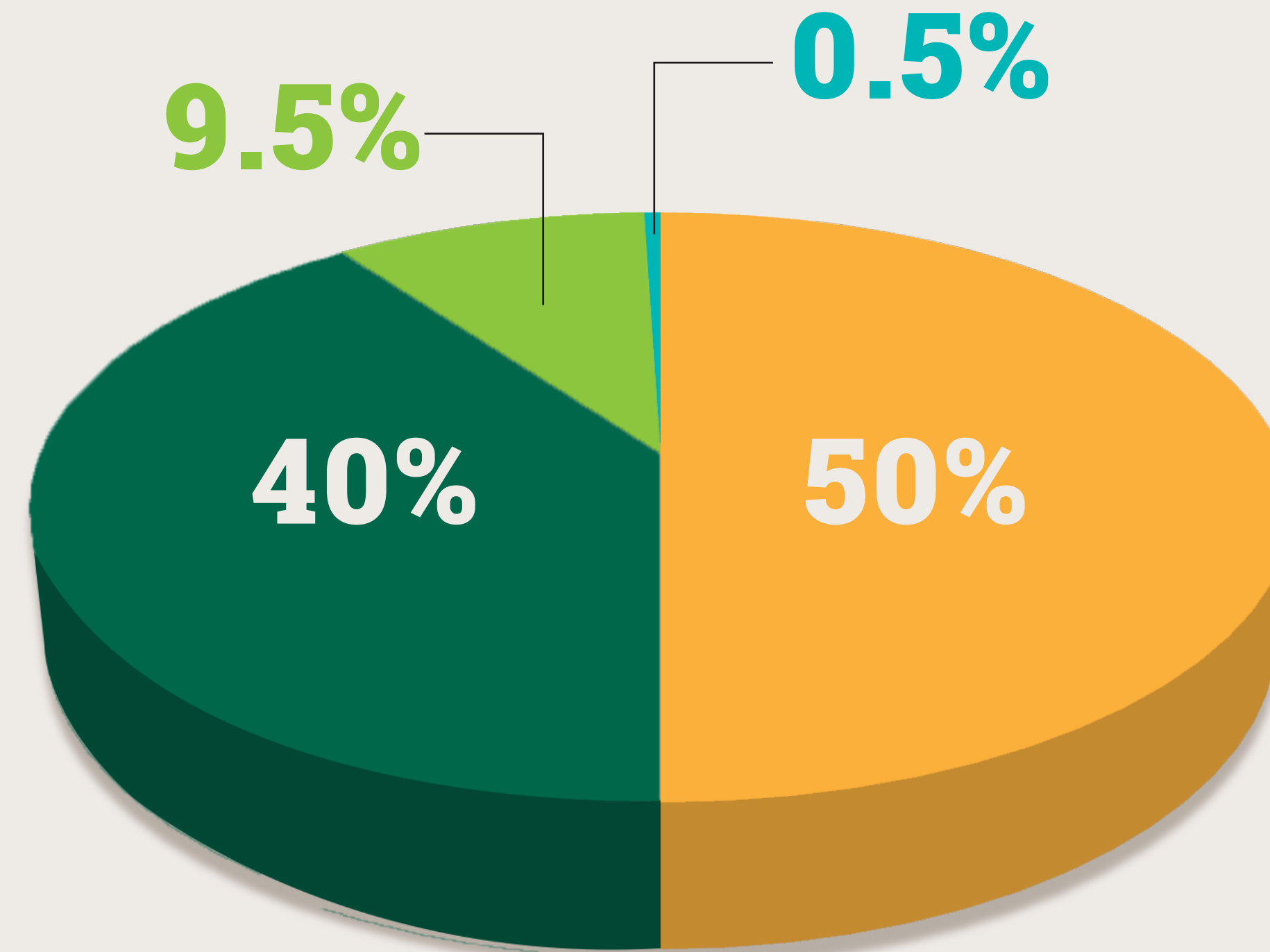
Financial

Income 2021-2022



Direct contributions Donations in kind

Expenses 2021-2022



Research Programs
Taxes Operating



Collaboration agreements



**University of Puerto Rico
Mayagüez Campus**

Research on
water quality



**Interamerican University
of Puerto Rico Bayamón Campus**

Mata de Plátano Field
Research Station



**U.S. Fish and
Wildlife Services**

Introduction of threatened
and endangered species
of flora and fauna



**University of Puerto Rico
Rio Piedras Campus**

Legal Center for Resilience
Development



**University of Puerto Rico
School of Law**

Environmental Law Clinic



**Department of Natural and
Environmental Resources
of Puerto Rico**

Recovery of vulnerable
and endangered flora
and fauna species



**Association of Zoos
and Aquariums (AZA)**

Reintroduction of concho toad
tadpoles (*Peltophyryne lemur*), a
toad endemic to Puerto Rico and
our only endangered toad species

**International Institute of Tropical
Forestry of the Federal Forest Service**

Field work on forests, water,
wildlife and publications



**University of Freiburg,
Germany**

Hydrological Modeling
and Water Resources



**Karst Waters Institute
(USA)**

Karst Groundwater
Contamination and Public Health



**University of Dresden
(Germany)**

Karst Hydrology



West Virginia University and American Geophysical Union

Social sciences and humanities projects investigating
the human and community dimension in the past,
present and future of Puerto Rican karst studies
and conservation

Our goals 2023-2024 and how you can help us



Puerto Rico needs private, non-profit institutions that promote scientific research and education; provide the general public with access to knowledge of their natural systems; promote interest in the conservation of these systems; and, moreover, foment concrete actions for sustainable development.

CDK has been doing important work in order to address these needs. But the establishment of **the Karst Institute of Puerto Rico and the Caribbean (IKPReC)**, with its two components –**the Natural and Social Sciences Research Center** and **the Museum of Natural History of Puerto Rico and the Caribbean (the first in Puerto Rico)** – will provide even more opportunities to continue the work of researching and disseminating scientific knowledge about our natural environment and its riches; to educate the general public not only about the existing natural systems and their history over time, but also, and with equal emphasis, about ways to conserve them; to underscore and demonstrate in practice the importance of awareness and of collective and individual labor in the production of knowledge and in the defense of the environment.

Our goals 2023-2024 and how you can help us

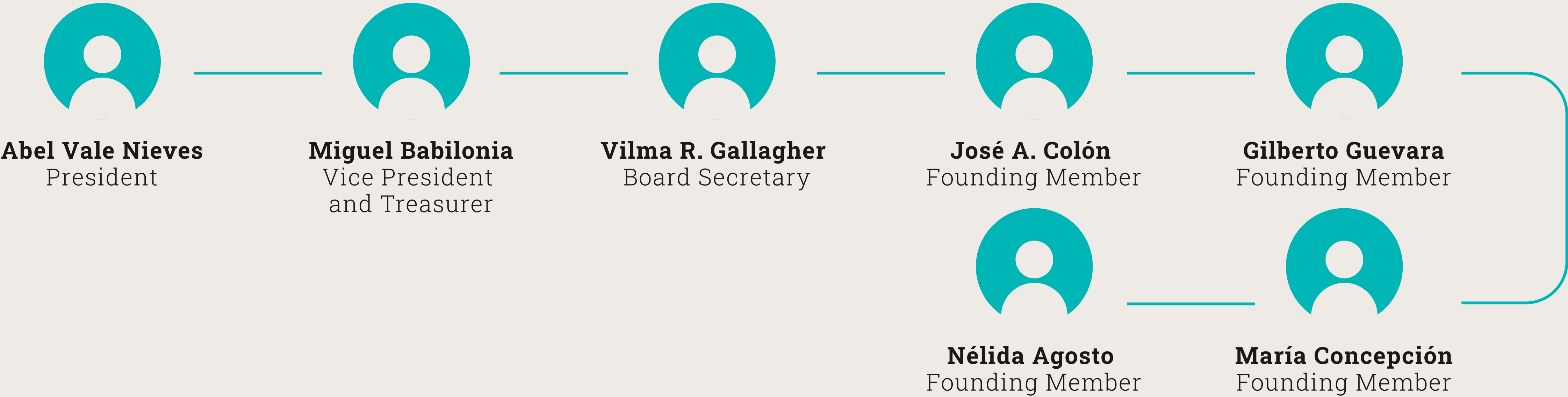
To give continuity to CDK's efforts, we need to raise funds to initiate or complete a series of steps that will allow us to bring the Institute to life and sustain it in the short- and medium- terms. For example, we need to hire a specialized company to develop the content of each of the museum's rooms (for which we are working, among other things, on drafting request for proposals). We also need to formalize the creation of a working group to raise donations for the Endowment Fund of the Institute and the Museum and try to raise a minimum of \$5 million dollars. In addition, we need to create another working group to raise funds for the reconstruction of the building that will serve as the Institute's headquarters.

Any donation towards these goals is essential, and CDK would welcome and appreciate it, as it will help us to continue researching, educating, and motivating our people, and the world, to conserve and enjoy our natural systems in a responsible way. To make a financial donation, visit CDK's website at <https://cdk-pr.org/sobre-nosotros/> or contact us at telephone 787-384-4406 or 787-516-2222.

Team



The people who make up the Board of Directors of CDK, apart from fulfilling the duties inherent to their positions on the board, donate their time, expertise and work. Their work for CDK is entirely voluntary, and none of them can be hired by the organization.



Acknowledgements



We thank all donors and collaborators for their support in researching, educating, and conserving our natural systems.

Acevedo, Pedro | **Ackerman**, James | **Acosta**, Ángel | **Agosto**, Nélide | **Albino**, Juan | **Alejandro**, Héctor | **Almodóvar**, Roxanne | **Aragón**, Roberto | **Arbona**, Ignacio | **Arce**, Fernando | **Arce**, Josefina | **Ayes**, Zulma | **Babilonia**, Miguel
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Otero, Angel | **Padilla**, Ingrid | **Palacios**, Rebecca | **Pérez**, María A. | **Pérez**, Raúl | **Picart**, Ninoshka | **Pitterson**, Félix | **Puente**, Alberto | **Puente**, Alejandro | **Quintero**, Angel | **Ramírez**, Teresa | **Ramos**, Antares | **Ravitch**, Serge and Mirsum
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Villamil, Joaquín | **Vázquez**, Angel | **Vega**, Sondra | **Vicens**, Gerardo | **Villamil**, Joaquín | **Villariny**, Mari | **Zaragoza**, Paola

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