

AAPG

EXPLORED

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'Dialogue of Truth'

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A Dialogue of Knowledge

ACGGP program provides geological education in Colombia's territories

Colombia's 60-year internal conflict impacts a great part of the South American nation, but the most devastating effects have occurred in rural communities and outlying populations that, in addition to violence, are plagued by geographical and social isolation, deficiencies in education and health care and inattention from the government authorities.

Ironically, many of these areas are geological environments ripe for oil and gas exploration and mining.

The search for resources takes many forms, from exploration campaigns led by multinational companies to illegal mining operations resulting in bloody turf wars and pollution of lakes and rivers.

Growing up with Skepticism

The oil and gas industry has a checkered past in municipalities like Medina, Cundinamarca, a municipality located 192 kilometers east of Bogotá. Nicknamed "Gate to the Plains," the town sits at the intersection of the Andes mountains and the flat Orinoquía region of Colombia.

William Castillo, 22-year-old community youth leader, said Medina's population reflects its 400-year history.

"The magic of the llanera (plains) culture is in our blood, along with the unmistakable Andean culture, giving characteristics we are proud to carry today," he said. "We are part of two cultures, and despite all of the calamities caused by the horror of war, we now are known as a territory of peace, where work, dedication, and the sense of belonging aid us in trying to create decent living conditions for ourselves."

Castillo said, in addition to a strong cultural heritage, Medina enjoys great biodiversity, and the community has a strong connection to the environment.

"I believe that as a community and territory, we have two important resources: our culture – framed in the traditions of the Andean region of the original peoples and the traditions or customs of the Orinoquía region; and the environment – the biodiversity of flora and fauna, our splendid landscapes and rich water."

Despite its rich cultural and environmental riches, Medina has challenges, most of which Castillo attributes to socioeconomic conditions.

"The biggest challenges we face are limited opportunities in employment and higher education, and the lack of essential services such as electricity, natural gas homes, drinking water, among others. This, combined with a lack of support from the government, at the municipal, departmental, or national level, has kept us (from) developing as we should," he said.

Reaching out to Communities

Challenges like those in Medina caught the attention of Carlos Ortega, an exploration geologist who visited while working for the sustainable development vice presidency at Colombia's national oil company, Ecopetrol.

In 2017-18, Ortega served on the Board of Directors of the Colombian Association of Petroleum Geologists and Geophysicists (ACGGP), an AAPG-affiliated society with 500 members, most of whom have some relation to Colombia's energy sector.

During his term, Ortega co-founded ACGGP's Regional Pedagogy Program to serve as a bridge between communities and industry.



Environmental awareness and bird watching activity conducted in the Santa María municipality in the Boyacá department, near the Ecopetrol's APE Medina Occidental project



Carlos Ortega having a dialogue with rural community members in the Charco Largo in the municipality of Santa María, Boyacá, near the Ecopetrol's APE Medina Occidental project. The discussion centered around how exploratory wells are drilled, and communities took advantage of the opportunity to ask questions and express concerns about the project.

Flover Rodriguez, ACCPG Executive Director and AAPG member, described the program as a comprehensive geoscience education program that helps rural and urban communities understand the Earth's processes, builds relationships with local communities and leads to the sustainable development of territories.

He described the program's primary precepts: communication of geotechnical information; respect for others' knowledge; appropriate use of scientific language; and the importance of listening to members of communities living in areas with oil and gas and other energies' exploration and development projects.

Rodriguez noted that, though ACGGP receives funding from energy companies interested in conducting educational programs in regions with current or planned exploratory activity, the program is not designed to promote specific oil company projects or to defend the positions of the energy industry or other interest groups.

"Our objective is to provide knowledge to community members so they can make informed decisions about their territories. We provide impartial information without taking sides," he said. "If, at the end of the day, communities decide to accept projects proposed by oil companies, that is a secondary result of the pedagogy

project, whose primary intent is to develop trust and to construct a social fabric that emphasizes both individual and community responsibility for societal development and environmental protection."

Rodriguez noted that, since its founding in 2017, the program has helped to combat significant misinformation related to the

energy sector's impact on climate change, water pollution and natural disasters, and has helped to clarify misperceptions related to seismic exploration, oil production versus water consumption, hydraulic fracturing techniques and other concepts.

"The program has built trust and deepened relationships between local communities, government entities and the hydrocarbon sector by implementing a clear, wide-ranging and pedagogical communication strategy," he said.

Ortega said the initiative was developed to contribute and promote processes of social appropriation of knowledge.

"We decided to visit different territories in Colombia, mainly those where there are hydrocarbon operations, to share with the communities and different interest groups how geosciences contribute to the exploration and production of hydrocarbons," he said.

Shortly after founding the program, Ortega left Ecopetrol and joined ACGGP, where he currently works as a pedagogy and social dialogue coordinator.

He has spent the past several years making regular visits to territories to hear community members' concerns and opinions about hydrocarbons, mining and other sectors influenced by geoscience.



William Castillo, youth leader from Medina, Cundinamarca in front of a mural painted by students who participated in ACGGP's Geology and Society Project

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Encounters with Industry

The Regional Pedagogy program reached the “Gateway to the Plains” in 2021 when Ecopetrol started the Media Occidental exploratory project. Ecopetrol and ACGGP arrived in the area to conduct educational activities through the Geology and Society project.

Youth leader William Castillo described how the visitors caught his attention.

“The first time I saw the ACGGP workers was at our local educational institute, where they were helping young students paint a mural,” he said. “It seemed like an important task, and without even meeting them I thought we should work together on projects that are constructive, innovative and participatory, especially those that impact young people in our municipality.”

Castillo said his interactions with ACGGP taught him two important lessons.

“First of all, we learned technical concepts— starting with basic geology and learning the processes that occur within nature itself and of course with the oil industry,” he said. “But it also is important to mention the human aspect and the sense of warmth and service that ACGGP team members bring to the projects. You can feel it as soon as you start working on team projects, and that warmth inspires trust.”

A New Perspective

Castillo described how the Regional Pedagogy program changed his views of the oil and gas industry.

“Before coming in contact with the Geology and Society Program, my perception of the oil industry was based on ignorance and was guided by the influence of adults



Carlos Ortega conducting a workshop in the Vereda Cedeño in Samoré, Norte de Santander department in Northeast Colombia, near the Ecopetrol’s Gibraltar gas field. Ortega created a model of the Gibraltar field, using real geological data to scale, to explain the petroleum system.

who see it as a threat. They equated the industry with negative experiences resulting from our country’s conflict – guerilla groups blowing up pipelines, rivers filled with black oil stains, thousands of species destroyed,” he said. “My ignorance of the way that people in the industry act led me to blame

them for environmental impacts in the territory and the fear and division generated in our community.”

Castillo said his contact with ACGGP helped him develop a more well-founded opinion of the reality of the industry.

“I consider it important to see the need

that we ourselves as a society are creating and that the way that industry is meeting our demands,” he said. “Through my contact with the industry I could see how companies are complying with all governmental regulations and carrying out their operations while protecting human life and the environment. It is important to recognize the commitment that the industry has to contribute to the construction of the territories through programs that meet social, environmental and cultural needs.”

Castillo said his interaction with the Regional Pedagogy Program also helps him understand the role community members play in protecting their territory.

“It is important to clarify that any action we take within our environment generates an impact on our ecosystems, and it is our own responsibility to try to reduce or mitigate that impact,” he said.

A Dialogue of Knowledge

For Ortega, successful work in territories requires open and effective communication.

“Our program creates a ‘dialogue of knowledge,’ visiting the territory and promoting honest conversations with communities. The dialogue of knowledge is a dialogue of truth. It is not imposed. It comes with a fundamental requirement to listen empathetically, to put yourself in the place of others, to value their opinions and use their opinions to help to develop alternatives that help to facilitate the resolution of any conflicts that may arise,” he said.

Ortega said ACGGP’s Regional Pedagogy program expands beyond geoscience knowledge and leads to the development of trust for all.

“The program is very important, and

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2023 RMS-AAPG Annual Meeting

Bismarck, North Dakota – June 4-6, 2023

Energy & Plains Solutions

www.rms-aapg2023-bismarck.com/

Call for Abstracts open: March 15th deadline

Exhibitor and Early Bird Registration currently open (Early Bird ends April 30th)

Diverse Technical Agenda: *Petroleum Geology of the Rocky Mountain Region, CCUS, Lithium-Critical Minerals, & Geothermal Resources*

Pre-conference 2-day Williston Basin core workshop: *Cambrian to Permian sedimentary units, carbonates & siliciclastics, hydrocarbon-bearing & CCUS targets*

Post-Conference 2-day Field Trip: *Cretaceous to Paleogene deposits including K/T boundary with ejecta lay, marginal marine to terrestrial deposits.*



Party held for schoolchildren in the Japon community, Paratebueno municipality, in the Medina area of Cundinamarca

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this is shown by the results. Historically, communities have received information about hydrocarbon projects, and to some extent, they have benefited, but not in the way they wanted. At the same time, many companies ignored their opinions and questions, assuming that communities hold little importance, as if the signing of an exploration and production contract granted the full right to intervene in the territory without taking into account the communities that live there. The communities are the ones who have forged and built the territory, the ones who, through their traditions and culture, made Colombia the country that it is today," he said.

"Essentially, territories are the communities that inhabit them, the ones who suffer day after day, who dream and build it for their children. As such, entering a territory requires social dialogue and working hand-in-hand with communities to build a project for all."

Industry Involvement

Energy companies throughout Colombia are working to build trust and promote dialogue throughout the country.

Javier Cardona, exploration geologist from Ecopetrol and member of the company's sustainable development vice presidency, said the partnership with ACGGP is an important component of the company's outreach to communities.

"Ecopetrol has the need to carry out exploration activities in different basins of the Colombian territory, but we have difficulties getting into the territories due to the opposition of the communities and other interest groups," he said. "The Pedagogy Program is important to establish a dialogue with these communities, teach them about the oil and gas industry, and understand their concerns and demands, in order to include them in the company's sustainability programs."

Cardona learned about the program through his membership with ACGGP, and in 2021-22 he participated in the Farallones project in the Colombian Foothills basin, approximately 30 kilometers northeast of Bogota, where Ecopetrol planned to drill an exploratory well.

"The communities in this area are mostly farmers and ranchers who in the past were affected by the Colombian armed conflict," he said. "The community in this area is not familiar with the industry and has legitimate environmental and social concerns. Many of

them feel threatened by the company's entry into their territory and other people see an opportunity for development. However, many of them do not want the project to be carried out in their region."

In the first pedagogy project in the Foothills basin, Ecopetrol and ACGGP conducted more than 50 activities involving different groups of people from the region

"We had workshops, talks, cultural and environmental activities, such as walks and bird watching, and team members designed mockups of the subsoil with digital elements of augmented reality, educational videos, and podcasts," he said. "This strategy helped us to create a constant dialogue with the communities for more than two years."

Cardona's team took community members to Ecopetrol's operating areas in the Cusiana and Cupiagua fields, also in the foothills, so that they could see industrial operations firsthand.

"Visits to the field gave people the opportunity to visit a gas facility, observe drilling operations, see the surrounding environment, and learn about the company's HSE (health, safety and environmental) policies," he said.

Building Trust

Cardona described how the Pedagogy Program helped the company build

trust with local communities and other stakeholders.

"People feel that they can trust Ecopetrol and that we can be their allies in the development of the region and in their own lives. This program has allowed us to know the interests and expectations of the people and this in turn helps us to create social aid programs and identify the main aspects of environmental risk," he said.

In 2022 Ecopetrol incorporated the regional pedagogy program into the company's sustainable development strategy. Since then, the company has developed similar initiatives throughout the country.

Cardona said pedagogy programs benefit both the communities impacted by the programs and the companies who organize them.

"These programs are important because they allow us to create bonds of trust with people in the territories where the company operates. They also give us very valuable information about what people care about and what their expectations are," he said.

He said he has seen how the programs help to improve the reputation of Ecopetrol and the oil and gas industry as a whole.

"Community engagement helps people get educated and feel better informed during all operations," he said. "It also allows us to identify the best options for making social and environmental

investments in line with our sustainability strategy and allows us to enter the regions to carry out seismic and drilling operations."

A Rewarding Profession

Ortega said he is fortunate to work on projects that have a lasting impact on communities throughout Colombia.

"The most rewarding of being part of the program undoubtedly has been the opportunity to meet thousands of people who inhabit the territories of Colombia, to listen to what they believe and what they feel, to be part of hopes and dreams for having a better country and a more promising future for their families. Being part of the program has been very rewarding because, through dialogue and care for communities, I have been able to understand and transmit their ideas and proposals, and use them to discover opportunities for everyone," he said.

To learn more about the Regional Pedagogy Project, visit [ACGGP.org/pedagogia-regional](https://www.acggp.org/pedagogia-regional).

Editor's note: This is Part 1 of a two-part series. Part 2 will profile program staff and recount how the initiative grew in five years from a small group of volunteers to a robust program that impacts more than 21,000 people.



ACGGP mural painting activity with students from the municipality of Paratebueno, Cundinamarca, in central Colombia. Participants choose subjects that highlight characteristics of their territory, and the result is a collective construction focused on the protection and preservation of the natural environment.