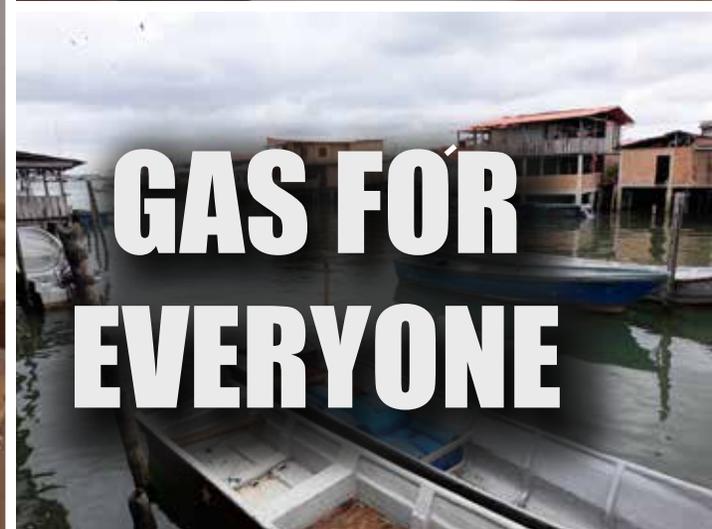
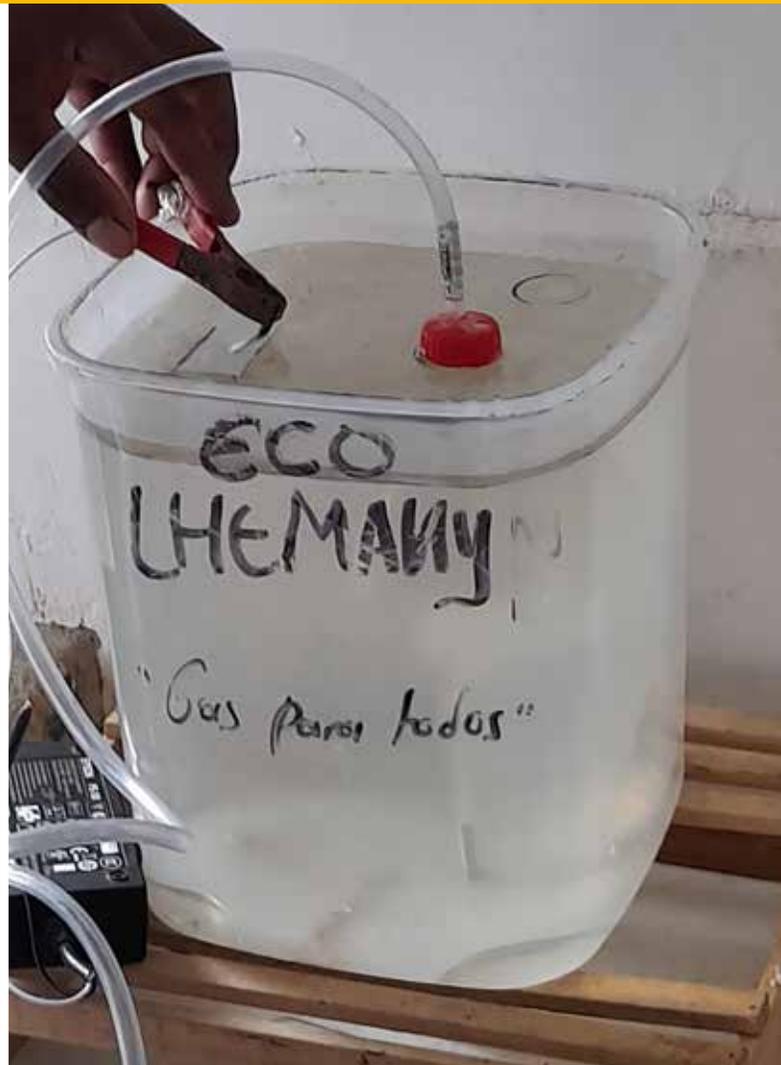


Almanac of the Future

A STORY OF SUCCESS

Motivational Experience No. 41

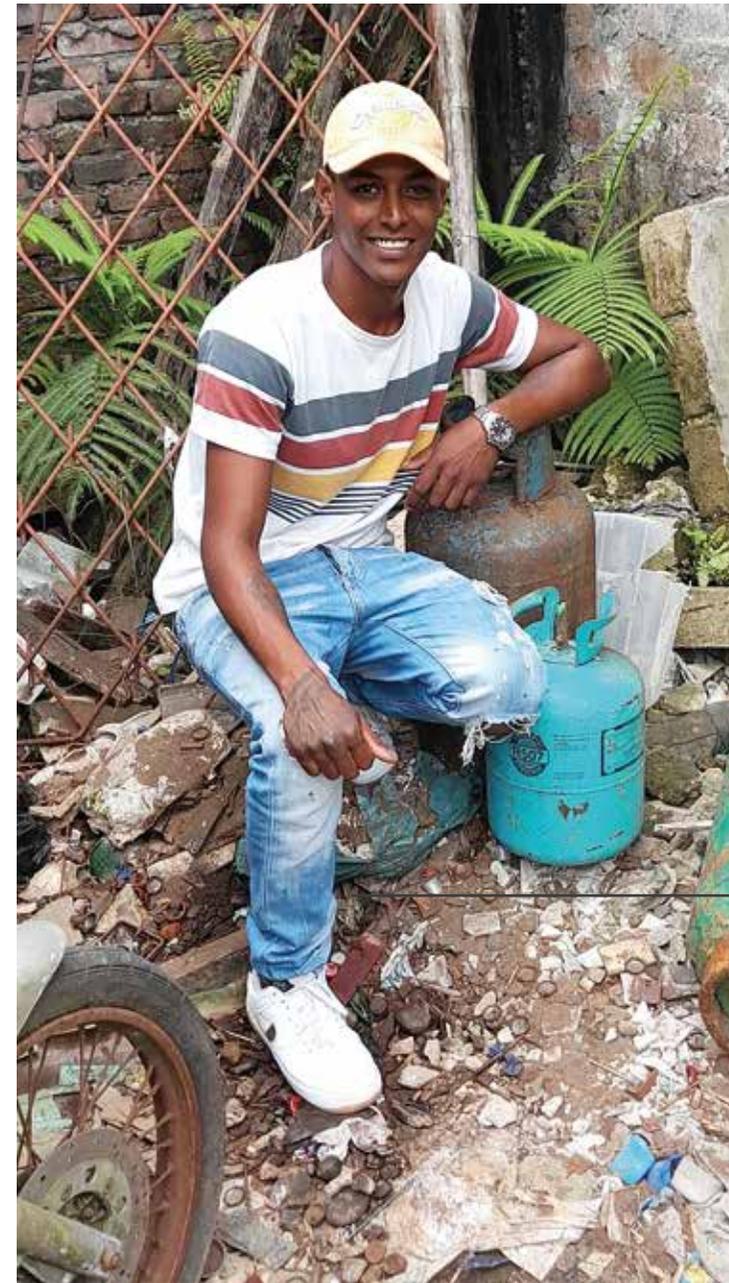


Dario Estrada, born in Tumaco, Colombia, has always had a keen interest in everything related to power generation. During the pandemic, in one of those free moments surfing the internet and watching a video of someone generating gas with drinking water, changed Dario's life: "gas for everyone!"

LHEMANY: IN SEARCH OF HIS PATH

I meet Dario in Tumaco, on Colombia's Pacific coast. His friends call him Lhemany. Before, his nickname was "El Flaco" because he was not only tall but also quite skinny, but finally Lhemany prevailed. Dario, born the last of 5 brothers, is 23 years old, he finds this nickname cool and it has become part of his personality. He left home when he was 14 years old. Fate took him to Shushufindi, in the Ecuadorian Amazon. "The word No didn't exist [and still

doesn't seem to exist] for me," Darío says. In Ecuador he helped Don Claudio, a transporter with whom he learned to drive a car. He returned to Colombia to finish high school in Pasto. "Thanks to Don Victor, another person who gave me a chance, I learned the automotive art and aesthetics trade." In 2018 he migrated again to Ecuador, this time with destination USA, but the Venezuelan migratory avalanche made Darío go through quite difficult moments, sleeping even in the street. He recalls: "In this odyssey through the neighboring country, I found myself again in Shushufindi, with only 10 dollars in my pocket and very hungry. I was about to invest my last money in 2 hamburgers and a soda when I noticed 3 little brothers, two of them quite small, asking for something to eat. We ended up eating the two hamburgers between the 4 of us". Dario aka Lhemany had already experienced that on the street no one supports you. "You don't need to be a millionaire to help," summarizes the young man. Finally, missing his family, mainly his mother, but also his friends, he decided to return to Tumaco.



UNTIL SIX O'CLOCK

Isaac Gómez is Darío's best friend since childhood. They support each other, Isaac being the one who has supported his inventor friend, even with pots and other utensils from his kitchen, thus making his friend's expe-

periments possible. "How many times have Isaac, my sister Lizeth and even Isaac's father, Don Luís, with his meat-selling stand, saved the food issue for me?" Darío acknowledges and starts laughing: "Our slogan with Isaac, at the end of a shared lunch is "until six"; it can be six o'clock in the evening or the morning of the next day or even at night, depending on

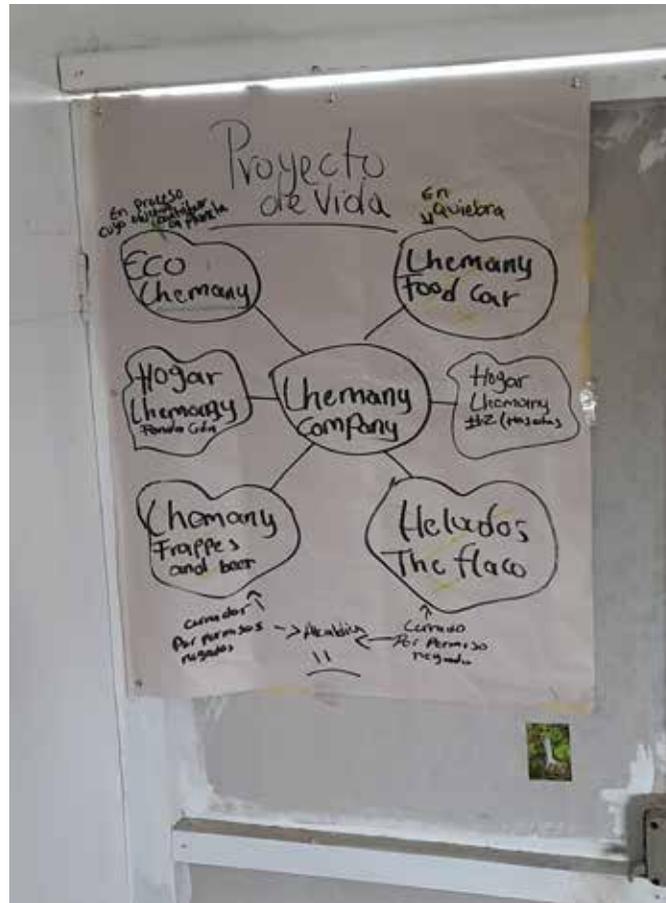
the always meagre finances. Darío is very aware of the constant support from the people closest to him, understanding the entrepreneurial and inventive spirit of the young man. "Since I was a child I liked to play investigating, often alone. As an adult, I was worried about cars but also about power plants. I remember well how much I was struck by the construction of a mega-dam in Ecuador where we passed with Don Claudio on the transport freights".



With the challenge of becoming an inventor, Dario has worked as a cab driver, a salesman in a clothing store, a supermarket employee, in construction, and for lack of capital he discarded the idea of starting a chrome plating shop. Dario, summing up these stages of his life, where there were always discounts in his paycheck, gave in to his personal inclination and began to draw: the entrepreneurial talent of an inventor that Dario had inside him had won the battle in defining his personality.

THE LHEMANY COMPANY WHEEL

Since Darío entered the world of entrepreneurship, always based on his inventions, his principles have been threefold: do no harm to the environment; take advantage of recycled resources; and customer quality. His first two ventures, related to the sale of sandwiches (Lhemany Food Car) and the sale of ice creams (Helados The Flaco), were well received in the market, but obtaining the mandatory permit from the mayor's office became an invincible obstacle due to the lack of capital to bribe or political leverage. For Darío, Lhemany Company is his life project, for the moment with six petals: in addition to the two ventures already mentioned, currently on standby, there are Lhemany Frappes and Beer, Hogar Lhemany (home) for people and another one for animals and last but perhaps the most important Eco Lhemany.



ECO LHEMANY: FROM GO KART TO GAS FOR EVERYONE

During the pandemic, in one of those free moments, Darío was surfing the internet and saw a video about the production of hydrogen gas with drinking water and other ingredients. Inspi-

red by this, he set out to work on an invention to produce fuel for a small motor vehicle, called a go-kart. Darío remembers: "I gathered all the necessary materials (recycled) to create my hydrogen generator. In Don Milton's Burbano workshop they were very supportive".

Spending an afternoon on the beach, enjoying the sun in the company of some friends, Darío told them: "You see the sea as a place to swim, fish or ride boats, I see something else, I see that I can make cars and motorcycles run with seawater. They responded with jeers and laughter. But when I saw a huge tanker ship, supplying gas to Tumaco, I thought: damn! Why they do that if we are rich in sea and they don't know the amount of gas that we could produce. From that moment I decided to reorient my plan, no longer to move cars and motorcycles, now it was time to find an alternative to help my people, not only my people but also my country". A gas pipette for cooking costs 80 thousand pesos (approx. 18 to 20 dollars) and for many families it is too expensive.

Dario began to investigate as much as he could about the production of hydrogen from seawater. The young man himself devours as much literature as he can get his hands on. Unlike the butane gas brought in by the tanker, which is a petroleum derivative and releases CO² upon combustion, hydrogen is a highly volatile yet very potent gas that causes no pollution. Dario recalls: *"In my first attempts to produce and compress hydrogen, there have been quite noisy explosions, waking up the whole neighborhood"*. Dario has no shortage of such anecdotes. He says that recently, wanting to speed up hydrogen production, instead of using a PC charger given to him by a friend and a car battery donated by Isaac's father that delivers 12 to 24 volts as a power source, he connected his current prototype to 110-volt mains power. *"It took but a scant 2.3 seconds to pop my container for hydrogen accumulation and comprehension. The whole block heard about this event and the landlady of the house, where I rent my rooftop room, was in no mood for jokes on this day."* Because of the young inventor's notoriously

meagre finances, his room is not primarily his room, it is also Echo Lhemany's office as well as laboratory, secretariat and visitor's room.

CRUCIAL MOMENT

A tattoo on Dario's forearm indicates the exact time when he first succeeded in producing hydrogen from seawater: 0:58 a.m. on March 16, 2021; the trials lasted two days and nights without sleep and very little eating. The young man becomes very intense when it comes to his inventions and ventures. *"I forgot everything during these days, even my mother's birthday,"* Dario says with a smile on his face. Doña Maricela, his mother, is proud of her youngest son, but there is no shortage of people, including ex-girlfriends, who call him crazy. *"I'm not interested in looks,"* says Dario, referring to these types of comments.

Since the young man is pursuing his inventions and prototype design solely on a self-financing basis, the pace is slower than Dario would like. He is on



his fifth prototype of a seawater hydrogen generation plant and has now designed the second prototype of a hydrogen cooking stove.

Click here

"To live my curiosities, I sometimes have to reinvent warm water, which is not a bad thing or a problem", Dario explains his entrepreneurial philosophy. For Eco Lhemany, a company that processes hydrogen gas from seawater, Dario's health could be better: he was diagnosed with gastritis. When the doctor recommended that Dario should be careful to follow an adequate and continuous diet, Dario told the doctor that he would most likely see him again. The young man's financial leeway to move forward with his experiments is to restrict his diet to zero. "It's not the first time I've been close to bankruptcy" Dario shares his current situation. He owes two months' rent and there is some more debt. "It's going to be my turn to prioritize for a while to generate resources to balance myself and then go back to investing in my prototypes." Dario, in order to make Eco Lhemany's processing indepen-

dent of conventional energy, wants to generate electricity from solar or wind power. But the solar panels cost one million pesos (approx. US\$220) and Dario currently has debts rather than capital.



Crowd funding or micro-patronage is a type of collective financing where individuals or a group finances initiatives of other people or organizations. The injections of funding are usually small contributions but very numerous as there are different 'patrons' or people who give monetary support. There is a crowd funding in favor of Eco Lhemany in the following routes:



click here



click here

WORDS ARE TOO MANY

One of Darío's mottos is that it doesn't always have to be big, because there are too many words and what's missing are deeds. In fact, in Tumaco there is no encouragement for talent. *"My friends and family are proud of me, but public entities are not interested in what we young people can contribute."* Dario's testimony comes out of his mouth without bitterness; he is always on the lookout for new allies. Darío, in addition to crowd funding, is designing small portable grills, environmentally friendly and economical in price. From recycling, he is waiting for three pipettes or metal cylinders in the welding workshop to be converted into rotisseries. The plans for the prototype grill are ready. For the year's end celebrations, Dario plans to offer skewers on the grill; and in order not to get into trouble again with the mayor's office for lack of a street vending permit, there is already an agreement to rent a corner next to Isaac's father's small meat shop. Dario's hope is, in addition to selling

skewers, to sell the remaining 5 rotisseries, since he will occupy only one of them.



OF CHALLENGES AND PROFESSORSHIPS

Dario with his invention to produce hydrogen from sea water for cooking, teaches: -using a common good (sea water), -providing at very low cost a substance of prime necessity (hydrogen as a gas for cooking), -environmentally friendly (combustion without CO² emissions), -with a totally local and decentralized approach (with an

ecological footprint of almost zero), -accessible in financial terms (equality in the benefit), among others.

On the road to "gas for everyone" there is no shortage of challenges. In addition to those that Darío has already managed to overcome: the proper burner for the combustion of hydrogen; the design of a small, practical and friendly stove that uses recycled parts; and the design of a small portable hydrogen generator that guarantees safe and easy-to-handle electrolysis for the user, and the electrolysis process with energy from a completely clean renewable source.

Dario, without a doubt, loves to live his talent in spite of all the hardships and has no shortage of personal challenges in the future...he would like to study chemistry and teach this subject...in fact he has been doing it for a while now.

MESSAGES TO THE FUTURE

- Darío's testimony, in addition to his audacity to live his talent, shows something very important: one can advance and win with very little.
- Darío proves with his "gas for everyone" project that it is possible to modify a fossil energy production chain, by links of another chain that are friendlier for the planet, the pocket and all those who have access to seawater.
- The story of young Dario shows something that is key to a person's happiness: be bold enough to live and cultivate your talent. In other words: do what you love because living your vocation will allow you to do it very, very well - so we all win: me, you and the planet.

Almanac of the Future

The text was prepared, based on on-site conversations, by Jorge Krekeler (coordinator of the Almanac of the Future - facilitator of Misereor commissioned by Agiamondo) in October 2022. Deep gratitude goes to Darío Estrada and the people around him for having opened the door to the Almanac, sharing their dreams and insights. Thanks to Mauricio Gnecco for having accepted co-authorship in the conception and writing of the motivating experience.

Authors: **Mauricio Gnecco** and **Jorge Krekeler**
jorge.krekeler@posteo.de

Design: **Ida Peñaranda - Gabriela Avendaño** Photographs: **Darío Estrada** and **Jorge Krekeler**

Translation: **Ida Peñaranda - Olaf Niemtschik**

Contact details regarding documented experience:
Darío Estrada

darioe12estrada@gmail.com

Facebook + Instagram: **Eco Lhemany**

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