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CULTIVATING BUSINESS

Estimates suggest Colombia could capture one-fifth of the global medical cannabis industry.

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BUSINESS EVENTS

The last three years have seen an explosion of medical cannabis-related conferences, events, and exhibitions.



THE BUSINESS YEAR: MEDICAL CANNABIS COLOMBIA SPECIAL REPORT

The Business Year has been covering Colombia for seven years, sitting with its top business and political leaders to produce some of the most comprehensive English-language publications available on the country's economy. We have had the opportunity to see various sectors emerge as growth engines as governments have sought to diversify revenue streams away from oil and gas. And never has Colombia had such a golden opportunity to reshape its future than now, with the horrors of conflict now behind it as a result of the 2016 treaty ending conflict with the FARC rebel group.

It is interesting, then, that one sector flourishing in the post-conflict era is medical cannabis, a natural healer that ironically emerges at the end of a fight fueled by illegal drugs.

Colombia's medical cannabis industry is rising at a time when questions have arisen about how the state will drive rural development without relying on hydrocarbons, a now price-unstable commodity that helped the country double its GDP per capita between 2005 and 2014. Praise can somewhat be given to former president Juan Manuel Santos, who legalized the cultivation, manufacture, and export of medical cannabis in 2015. His successor, Iván Duque, has taken a tough stance on drugs that, fortunately for the many firms already operating within the medical cannabis space in Colombia, no longer appears to threaten the

nascent sector.

Indeed, assistance at the government level is forthcoming, with ProColombia, the executive branch's export promotion agency, believing that the country can capture one-fifth of the global market for medical cannabis before long. The sector is expected to be worth USD58 billion by 2025.

The benefits of medical cannabis are slowly becoming common knowledge, challenging sometimes decades-old laws that prohibit the substance and forcing a rethink amongst lawmakers around the world. And while appetite is slow coming at times politically, the private sector is chasing the dream with ferocity. It is through speaking with some of the top players in Colombia, both local and foreign, that we sought to compile this special report. From Khiron Life Sciences, which has subsidiaries in Colombia and Mexico and counts former Mexican president Vicente Fox among its board members, to Clever Leaves, a Colombian firm that aims to become the world's top grower of medical cannabis by 2023, we have sought out the men and women acting as pioneers in this fledging industry.

From the commercial side of the business to the legal and regulatory landscape, pharmaceutical environment, and burgeoning medical cannabis events scene, this report aims to provide a complete picture of the sector in Colombia, as well as act as a guide to the growth of the global medical cannabis industry. ✖

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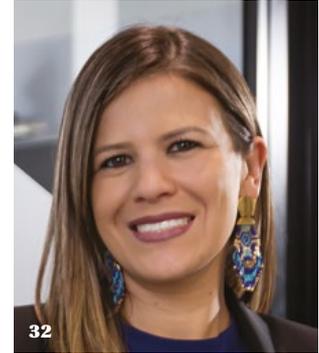
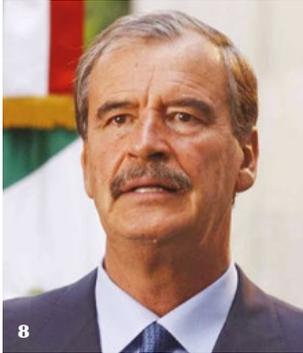
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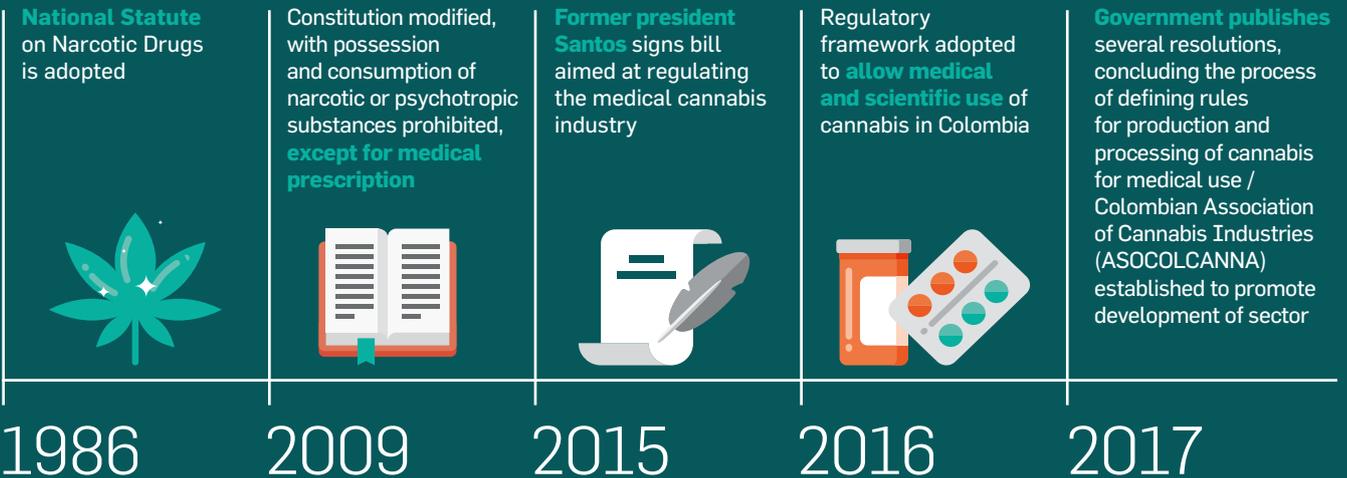
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DESPITE LEGALIZATION OF MEDICAL CANNABIS OCCURRING ONLY VERY RECENTLY, THE SECTOR IS ALREADY AFLUSH WITH ACTIVITY IN COLOMBIA, WITH LOCAL AND FOREIGN PLAYERS LOOKING TO SUPPLY NOT ONLY LOCAL NEEDS, BUT ALSO A LARGE CHUNK OF INTERNATIONAL DEMAND.



MEDICAL USES OF CANNABIS



CONDITIONS:
Chemotherapy side effects, epilepsy, Parkinson's, depression, chronic pain, multiple sclerosis

PRODUCTS:
Sprays, sublingual drops, suppositories, topical applications, pills



WHAT ASOCCOLCANN MEMBERS AVOID:
commercializing the flower, elaborating smokable products, elaborating products for illegal markets



MANUFACTURING:
Members produce in laboratories with high-quality standards, high levels of security, full traceability, proper oversight

COMPETITIVE ADVANTAGES OF COLOMBIA



INTERVIEW

REACH FOR *the stars*

Rodrigo Arcila
EXECUTIVE PRESIDENT,
COLOMBIAN ASSOCIATION OF
CANNABIS INDUSTRIES (ASOCOLCANNA)

Asocolcanna is the umbrella under which the Colombia medical cannabis sector is growing. After a year of landmarks in 2018, the association is looking forward to a transformative 2019.

What landmarks were reached in the medical cannabis industry in 2018?

2018 was an important year for the association; not only did we grow significantly, but we also have the most important members of the industry in Colombia now. In January 2018, we started with five affiliates and expect to have 23 or 24 by the beginning of 2019. This is an important expression of interest in the industry.

What was the need for an organization like Asocolcanna, and what have you accomplished as an association to advance the industry?

As an association, we need to unify our concept for the government. It is important that we agree with the government on what the industry needs and how it should be regulated. We have been recognized by the government as the most important association in the industry in Colombia.

What is Colombia doing right in terms of regulation, and how has the framework evolved to allow the industry to grow?

The current regulation is effective, even compared to Germany and Canada. That being said, we are still in talks with the government to discuss areas of improvement. For example, we need to share and discuss regulations and changes needed with institutions like the Ministry of Health, Agricultural Affairs, and the Ministry of Justice.

What is your perspective on the Duque government?

I have met with some of its ministers, and we have received signals from the government that it wants to collaborate with the development of the industry and agree with its proposals. As such, it seems certain that it will collaborate with us; however, it is important that it goes a little faster and is more flexible.

How has the attitude of the medical community evolved in respect to medical cannabis?

In other parts of the world, we have to collaborate with medical institutions in order to improve the knowledge of cannabis and its benefits. This is not something that will grow immediately; we have work to educate more people and institutions.

What potential does the cannabis industry have for the future of Colombia as a driver of growth?

Colombia could become a leader because of its natural conditions; its weather, geographical position, labor, regulations, and knowledge are but a few reasons. Knowledge has improved in many of our national institutions. Colombia has to take advantage of this moment and opportunity.

Are banks and businesses ready to invest in medical cannabis businesses?

It was a big task convincing our banking system to support the cannabis industry. This is not only the case in Colombia, but globally as well. We met the public bank for our agricultural industry, Banco Agrario de Colombia, which agreed to support the cannabis industry. We have to improve, share, and discuss more with them so they have the flexibility to support the industry. Other banks have also lent a helping hand.

How is Asocolcanna working to change people's perception about cannabis?

It requires time to educate the community and medical institutions, the latter of which initially rejected it, especially now that laboratories are working on its effect on disease and its palliative qualities. In the end, the community will understand the potential of medical cannabis benefits.

What do the next few years hold?

2019 will be a defining year for the industry in that the stages of many of our enterprises will be much closer to production. It will be a year in which we better understand the possibilities of what the Colombian industry can achieve in the world. ✖

BIO

Rodrigo Arcila holds degrees in industrial economics and business management as well as a master's in economic development. He is a doctoral candidate in economics at the University of Belgrade. His professional career includes leadership positions in both the public and private sectors. He has served as a consultant for the Ministry of Commerce, Industry and Tourism and served on the executive director for the pharmaceutical chamber of ANDI.

01

Cultivating Business**A PLANT FOR
ALL SEASONS**

With the ideal climate, topography, and workforce, not to mention the country's culture of exportation, Colombia's new medical cannabis regulatory framework gives the country enormous promise in this new and exciting sector. As the specter of peace looms over the Colombian economy, a number of hugely important questions linger: first, how will the state drive rural economic development in vast swathes of the country long dominated by guerrillas or rightwing paramilitaries that thrived on narco-trafficking and other illicit activities; and second, how can it spur the growth necessary to rural development whilst no longer relying on oil exports, a once valuable commodity that helped the country nearly double its GDP per capita between 2005 and 2014. The partial answer to both of these questions came not long after the collapse in oil prices and end of the commodities boom (2014), when former President Santos legalized the cultivation, manufacture, and export of value-added medicinal cannabis and various derivatives in 2015.

Though the former administration did much to encourage this development, ProColombia, the executive branch's export promotion agency, is still a stout champion of the country's burgeoning industry and predicts it can capture one-fifth of the global medical cannabis industry before long.

For a market predicted to reach USD58 billion by 2025 by Grand View Research, this would make Colombia's cannabis exports exceed that of coal (its second-largest export after crude oil, exports of which reached USD5.44 billion in 2016) and that of coffee, flowers, and bananas combined, its third, sixth, and seventh-largest exports, respectively.

Colombia not only has the perfect climate and land for such a venture but, as ProColombia and other champions have long pointed out, the country also has a rich and storied "culture of exportation," a claim few, however much they disagree with its merits, would deny. Not to mention the huge and hungry market for such medical products that exists on the country's doorstep. With an estimated 4.5 million Colombians and another 60 million Latin Americans suffering from cancer, multiple sclerosis, or epilepsy—three of but many illnesses whose symptoms are thought to be relieved by cannabis—the regional potential alone to radically improve people's lives is huge. That does not, of course, mean they will stop there: for ProColombia, the four most attractive export markets are Mexico, Canada, Germany, and Australia.

Foreign investments in the industry have so far been huge, especially from Canadian firms. As one leading Canadian industry insider told

“In August 2018, Avicanna, a Toronto-based cannabis biotechnology research and development firm, bought 60% of Santa Marta Golden Hemp, a company with 20ha dedicated to the production of organic cannabis on the country’s northern Atlantic coast.”

BBC Mundo, “Colombia has the best conditions in Latin America for investing in the [medical] marijuana industry.” Given its soil conditions, water quality, varied and mountainous climate, low production costs, and conducive regulatory framework, Canadian analysts such as Michael McCune, a member of the Canadian lobbying group called iTrust Cannabis, have gushed, “We see Colombia as a global leader in the cannabis industry, with enormous production and export capacity.”

And they are putting their money where their mouth is. In August 2018, Avicanna, a Toronto-based cannabis biotechnology research and development firm, bought 60% of Santa Marta Golden Hemp, a company with 20ha dedicated to the production of organic cannabis on the country’s northern Atlantic coast. And in November, Vancouver-based Chemos International bought La Finca Interactiva-Arachna Med, a 400ha farm with 2,000 workers in Cundinamarca that is well known as the oldest medical cannabis production

facility in Colombia, for USD10 million.

Meanwhile, homegrown firms like Clever Leaves are aiming to become the world’s largest medical cannabis grower by 2023. With over 10 million sqft of growable terrain, Clever Leaves is working around the clock to ensure it has a Good Agricultural Collection Practices (GACP) compliant cultivation facility, in addition to nearly achieving its Good Manufacturing Practices (GMP) Part I and II certification. Once complete, it estimates being able to produce 30,000,000ml of full spectrum cannabis oil per year on 100ha (up from five already in full cultivation at the end of 2018).

Finally, not only are the country’s medical cannabis pioneers showing themselves leaders in rural development and smart agricultural practices; for reasons of climate and topography, they are also targeting many of the country’s most war-affected regions, such as Valle del Cauca and Magdalena. So far, at least, the industry has been nothing but a win-win for the country. ✖



Image: PharmaCielo Colombia Holdings SAS

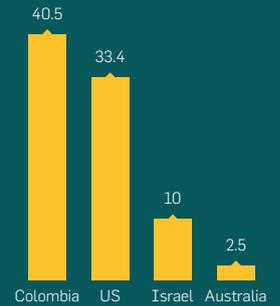
SIZE OF GLOBAL MEDICAL CANNABIS INDUSTRY (PREDICTED)

SOURCE: GLOBAL VIEW RESEARCH

2017	2025
USD13.9B	USD55.8B

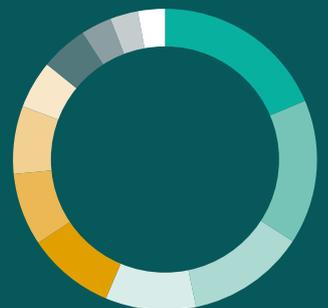
TONS OF GLOBAL MEDICINAL CANNABIS PRODUCTION, 2019 (POTENTIAL)

SOURCE: FONDO NACIONAL DE ESTUPEFACIENTES



PERCENT OF GDP, BY SECTOR

SOURCE: NATIONAL ADMINISTRATIVE DEPARTMENT OF STATISTICS (DANE)



- 18.2% Commerce
- 15.1% Government, health and education
- 12.3% Manufacturing
- 9.4% Real estate
- 9.1% Science and engineering
- 7.6% Construction
- 7.1% Oil and mining
- 4.9% Finance
- 3.2% Energy
- 2.9% IT & telecoms
- 2.8% Agriculture & fishing
- 2.3% Arts & entertainment

INTERVIEW

THE PROGRESSIVE *path*

Vicente Fox Quesada
FORMER PRESIDENT OF MEXICO,
DIRECTOR, CENTRO FOX,
MEMBER OF THE BOARD,
KHIRON LIFE SCIENCES CORP.



Colombia and Canada are leading in medical usage, and this change of paradigm is moving it out of underground illegal crime and the hands of criminals and into the hands of entrepreneurs, farmers, and businessmen.

What opportunities do you see for the medical cannabis sector in Colombia, specifically Khiron?

Colombia is active now, and the government is positive about opening up markets. Up until now, it has only approved medical and not recreational use, but Khiron is leading in the medical segment; these are young millennials with an aggressive vision for the future, which is why I see it moving quickly. In all my visits to countries where it has been legalized, I see two leaders: Canada and Colombia. Mexico is a close third and has accelerated its pace with the change of government. The former government was hesitant and slow and put medical use under pressure. The new government is liberal and is clearly promoting a change.

How have perceptions of cannabis changed as a medical tool in Colombia and Latin America?

In my time in government, there was no other choice than prohibition and illegal markets, so there was no evaluation of what happened before. It only developed the use for illegal purposes, which really complicated the situation in Mexico and generated extreme violence, especially given the product's transit from Colombia, Peru, and Venezuela heading north, a migration that included all drugs. That brought a tough war to Mexico. It was not until recent times, after I left government and became an activist promoting openness and the legalization of markets, that legalization as a trend gained a lot of traction. Since this will not go backwards, we are all getting ready to accelerate the development of the market.

Beyond the personal medical benefits, what is the larger socioeconomic impact that a robust medical cannabis industry could have for a country like Colombia?

There are great opportunities ahead, especially with medical use because the investment in research of medicines and legal drugs is impressive, and billions of dollars are being invested to improve the different uses of the plant. This is bringing in new solutions and response to patients and consumers. Colombia and Canada are leading in medical usage, and this change of paradigm is moving it out of underground illegal crime and the hands of criminals and into the hands of entrepreneurs, farmers, and businessmen, a total change for the better. That is the change you see when you move from prohibition to an open legal market as the investment flows become credible and companies are put under professional management. A veritable revolution has occurred, and people in the industry have a high sense of responsibility and an imposing code of ethics and standards of quality. After so many years underground, it is just like any industry today.

What is your outlook on the economic impact?

Once it is a part of a normalized economic sector, you get farming, harvesting, processing, manufacturing, commerce, and trade, all of which bring in job creation and space for innovation and creativity, not to mention a lot in tax revenue. Everything is proving to be great, and I have been recommending all those who are setting up the new NAFTA rules to consider this economic sector as a critical part of the

BIO

A graduate of Iberoamericana University, Vicente Fox received a bachelor's degree in business administration from its Mexico City campus and a diploma course in senior management from Harvard Business School. In 1964, he joined Coca-Cola de México as a route supervisor. He eventually became regional CEO of the company for Mexico and Latin America, the youngest person to hold such a position. In 2000, Fox became the 55th president of Mexico, serving until 2006.

pact, as it needs to be standardized. For those leading countries and economies that decide to take the step forward and participate in this business, more and more are getting public opinion support, and those who were once afraid are now accepting because we have been watching the markets. In the countries that have opened up, only good things have happened.

What lessons can other countries learn from Colombia's approach toward the development of the sector?

Like everything else in economic development, you look at the markets that are already open and legal and chart their relative successes and failures. It is excellent to take advantage of all these experiences, and this is where I have been active. I would put a strong word of caution that this industry needs to be more responsible than others because one mistake or bad company could spoil it for everybody. The industry's credibility has yet to be proven, so people must remain on their best behavior. I came to Khiron because of that. We have identified both of our positions in the industry and are like twin souls with strong principles, values, and ethics in the way that we look at things. We are not here only to make money and serve customers, but to solve patients' problems. When you have that target, then everything flows correctly, which is what is happening. Khiron has strong ethical standards, so we will work with all the producers with several purposes in mind. One is to keep a high reputation for the industry and ensure it does not harbor bad companies. Another is to expand the industry at a dynamic pace. We first need to grow the size of the pie, after which each competitor can take its share. Right now we are working for the industry more than our own specific company. We have to confirm and organize the industry and have associations of producers, manufactur-

“This change of paradigm is moving it out of underground illegal crime and the hands of criminals and into the hands of entrepreneurs, farmers, and businessmen.”

ers, and retailers so that we have a common united front to work with the authorities. This is a highly regulated industry and will need to be organized.

What is your message to other political leaders, particularly in Latin America, who remain opposed to any type of legalization?

This is an irreversible trend and is not what it used to look like. The industry is vastly different when conducted by professionals and university graduates than by criminals. I would tell leaders everywhere to remain close to the markets and learn what is going on. In these 10 years, I have never heard of anyone dying from cannabis; on the other hand, billions have perished from alcohol, sugar excess, and cigarettes. This industry is working with a great sense of responsibility. What we need most is favorable public opinion. ✖

INTERVIEW



THE LONG haul

Latin America is not just a place for cultivation, but a market full of potential consumers itself.

Chris Naprawa
PRESIDENT,
KHIRON LIFE SCIENCES CORP.

What is your capital market strategy, and how does it help you stand out in this market?

We have adopted a public markets strategy. We have leveraged capital markets to raise the capital we needed to grow the company and have raised around USD40 million. In the meantime, we have maintained over 30% insider ownership. We have about three extremely supportive shareholders that make up another 30%. From a capital markets perspective, we have spent the last 12 months building a strong foundation. We are the first non-natural resource company to go public out of Colombia. That is a massive achievement for us. We have been able to tap capital markets efficiently while keeping our share count low. Our capital structure is tight and allows us to be nimble and look at other opportunities without diluting ourselves too much. We have adopted a strategy of communicating with high-net-worth individuals. They provide us with the capital for the business so far, and they will continue to support us.

What is the importance of retaining control of the company?

This aligns the company with its shareholders. We are the shareholders, and I want them and myself to do well. We do that by keeping a low share count and a tight capital structure. Instead of issuing a billion shares and paying ourselves large salaries, we are incentivized by stock performance, just like our shareholders. In 2H2018, the market was extremely tough, and there were only a handful of companies that held their price or went up; we were one of those. That is because we are in line with our shareholders and want to see the same success for them as for us.

Is market saturation a concern?

I do not use the raw numbers of licensees and operating companies as a dashboard metric. What I use are serious companies that have overcome barriers here. The first license is one of 25 or 30 a company needs. How many people are actually at the finish

line? There are only a few. If we include the number of people who have figured out the banking regulations and similar hurdles, that number shrinks even more. I do not worry about early-stage licensees that will not reach the finishing line; we are way out in the front. I worry about what lies ahead of us. There is a fundamental difference in what we are doing compared to our competitors. They are mostly focused on low-cost cultivation for export to foreign markets. We enjoy the benefits of low-cost cultivation, but we are focused on the needs of 620 million people in Latin America. Many Canadian and US companies that come here do not know that there are consumers here. Do I want to spend my time, money, and capital competition in Canada, with 155 licensees for a market of 35 million people, or do I want to compete against four companies for a market of 620 million people? Latin America is complicated; it is not a part-time job.

What is Khiron's advantage internationally in terms of addressing different levels of regulatory complexity?

Region to region, the regulations are all different. The reason we adopted a compliance strategy that meets or exceeds USDA standards is because there is no argument that it is not a high-enough level or that we are not putting enough scrutiny on ourselves. Everything we are doing from seed to sale, including software, tracking, provisions, employee interviews, home visits, background checks, and more is in excess of current regulations we need to abide by. As this business turns global, people want to see that we have that part of the business down. We do so much security work. If we are looking at a company for a partnership, everyone gets checked out, and we do everything we can in terms of research before the second meeting. When markets open and we can ship there, we can demonstrate without a doubt where everything has come from, from seed to sale. We also want to ensure regulators look at what we are doing and adopt our procedures as regulations of their own. ✖

BIO

Chris Naprawa brings extensive institutional capital markets experience to the company. Prior to joining Khiron, Naprawa was partner at Sprott Capital Partners, head of equity sales at Macquarie Canada, head of equity sales and trading at Dundee Securities, and managing director at Primary Capital. He was also previously founder and CEO of Startcast Solutions, a company successfully sold to a large telecommunications company. Naprawa holds a bachelor's degree from Queen's University.

continental SYNERGIES

Álvaro Torres
CEO & DIRECTOR,
KHIRON LIFE SCIENCES CORP.

A critical period is already underway to determine which firms will dominate the industry's future.



How would you describe your progress in 2018?

We achieved many tremendous things in 2018, and these accomplishments are building the foundation for an expansion that will allow us to see extraordinary growth later. We will begin to deliver to our investors in 2019; the year will be about starting to sell products and strategic execution. Going public was never the ultimate goal of the company; it was a way for us to access capital that was otherwise unavailable. In 2019, we have to expand our locations and start showing sales to our investors. Now that we are public, people expect us to deliver. We have not yet been able to give our first patient medical cannabis. This will be my goal for 2019.

What is the potential in Latin America for the alternative cannabis wellness market?

The cosmetic market in Latin America is growing more than 10% per annum across every region; I would call it almost recession-proof. When we consider growth within this area, CBD products become an interesting area that has not been fully explored. We are building a brand that uses CBD differently in a scientific and innovative way. We have nearly 40 products of high quality that will come out soon. One of our goals was to come up with products that disrupt the traditional view of cannabis. Our products are aesthetically beautiful and supported by fantastic spokespeople. Additionally, we are present across a variety of different media types. We have to constantly think about the delivery technologies we want to utilize and transform. It is no longer just a story about cultivating cannabis; it is about utilizing technology and innovation and creating new products. The challenge in 2020 is to sustain the novelty of the products, thereby sustaining some of the excitement around them. We want to keep it from becoming a commodity, and innovation will keep the company on top.

How has Khiron's research focus allowed it to take the lead in developing cannabis-based products across different lines?

We come up with many of our own formulations,

and these are the result of research. We spent six to seven months with chemists to understand and develop our products; this is research we engaged in entirely on our own. However, there are plenty of companies conducting R&D that we can integrate. We seek to continue developing our plants to maximize yields and improve the quality of the cannabis we are extracting. Another area of research is about understanding and implementing technologies to make it, for example, odorless and tasteless. This is extremely important for certain types of nutraceutical products. In some cases, we are able to develop partnerships with universities and research centers and other companies. We need to understand how our company can create an innovative process that allows us to continually develop and think about new products. We are working to put products in consumers' hands that are as safe and effective as possible. We are reaching a point where we will need to develop hundreds of products every three years, and this takes a great deal of dedicated resources. We have a large team of scientists always looking to maximize our innovation.

What expectations do you have of the new government in regards to the legal and regulatory environment around medical cannabis?

This new government is pro-business; it cannot ignore the amount of FDI this industry has brought into the country. As a government that is open for business development, there is no way it will not support this industry. From our conversations with government officials, this seems to be the line it is taking. The government is focused on the reputation of Colombia and is keen to ensure that everything takes place exactly as stipulated. This means it will be strict when it comes to managing this process. As a public company, we already hold ourselves to a strict and high standard. The government will look to companies like Khiron to show the country and regulators that this is a serious business. To a certain extent, it is on us to show the government that this industry is for real. We welcome that challenge. ✕

Has gained the approval of 4 medical associations in Colombia

Start of clinical trials in 2019

BIO

Álvaro Torres has over 15 years of experience in the Latin American market, including infrastructure projects and project finance, management strategy, team development, and mergers and acquisitions. Torres was previously head of business development for SNC-Lavalin, Colombia, and was instrumental in growing the company from two people to more than 2,000 in Colombia over the course of three years. He has overseen the development of projects totaling over USD1 billion in capital expenditure, including the development and construction of Colombia's tallest skyscraper. He holds a bachelor's of engineering and a master's of engineering from Rensselaer Polytechnic Institute and an MBA from Georgetown University.



Image: Spectrum Colombia



Diego Felipe Navarro
CEO & CO-FOUNDER,
FOLIUMED



Gilberto Iragorri
STRATEGIC ALLIANCES AND
GOVERNMENT AFFAIRS DIRECTOR,
MANDARA PHARMA

PRODUCT DEVELOPMENT

After amassing critical experience, skills, capital, and connections abroad, certain firms are now tapping into Colombia's unique demography and topography to launch some of the industry's most promising products.

What is your overall strategy?

DIEGO FELIPE NAVARRO We are part of a larger group called Folium Global and started operating in the US two years ago with licenses granted by the government of Nevada. Our business model is in accordance with Nevada law, and we are allowed to cultivate plants, manufacture products, and sell these to end consumers within the dispensary network. Our focus in the US is mainly within the state of Nevada. With FoliuMed, however, we are now approaching the international market. In Colombia, we are focusing our first phase on B2B operations. This involves mainly ingredients for the pharma and the health and wellness industry. We have some LOIs signed with some Canadian corporations, including Medisun and Veritas Pharma, who are willing to purchase part of our local production in Colombia. We are focusing on selling B2B products first, mainly concentrates, isolates with different combinations of cannabidiol (CBD) and tetrahydrocannabinol (THC); however, this first phase will focus mostly on the hemp business. This means

our business in Colombia will focus on non-psychoactive strains in the beginning, considering the large and growing market in the United States and EU. We are particularly excited about the new 2018 farm bill, approved by the US Congress and signed by President Trump, which means we will be able to target our products across the entire US. While we are enthusiastic about the LOIs already signed, we are exploring opportunities with other Canadian firms and EU companies, mainly in Germany.

GILBERTO IRRAGORI 2018 was an extremely exciting year. We have been structuring the entire company, putting together our business plan, and setting up the most important thing: our social program. We have a huge social program with farmers in Valle del Cauca and had to bring together universities and hospitals and prepare the agreements. We have also been looking for the best people and bringing them into the company. 2018 was a year of structuring and putting things together. In this part of the world, a farmer with a one-acre plot of land typically grows coffee and his

family's daily food, while a section of the plot remains empty. The farmers earn low amounts from growing coffee, and our plan involves taking that unused portion of land and growing CBD plants. We prepare the farmers, give them all the knowledge they need, help them with the nutrients, and give them the genetics. We have agronomists who visit them every 10 days to oversee cultivation. The farmers then bring their crop to Mandara, and we refine it into oils.

What is your competitive advantage?

DFN We have a unique competitive advantage compared to other firms starting operations in Colombia. Our cultivation, manufacturing, extraction, and end-consumer product development are all strengthened by our track record and positioning in the US. In terms of cultivation, we have experience with different strains with great quality and yields. All of our technical procedures focused on cultivation have been strengthened by our operations in Las Vegas. Regarding the extraction lab, we have a manufacturing and extraction facility in Las Vegas where we manufacture disposable and rechargeable vape pens, our main focus in the US. Meanwhile, our Roots brand vape pen was voted the best-selling one out of more than 700 brands in 12 US states by Leaflink, the leading cannabis digital marketplace publication. We are interested in manufacturing similar vape pens in Colombia and are confident can take our knowledge, expertise, and experience in Nevada to do so.

GI We will launch a variety of cosmetic products in 2019, including essential oils from cannabinoids and THC. Colombia has 44% of the quota of the world's medical cannabis, which is massive, and Valle del Cauca's location makes it the perfect place to grow CBD. ZOMAC zones are key, as there many advantages tax-wise. In the first five years, there is 50% tax reduction and then 25% tax reduction for the following five. Aside from cosmetics products and essential oils, we are also looking at industrial hemp. Many things can be produced from this, such as construction materials, biomass, and biodiesel. We are also looking into putting together food for cats, dogs, and horses. We have put together a team of experts, including graduates from Harvard and Cornell, in animal nutrition and plan to launch a pet food product in 2019. There are also many food products such as hemp seed oil, for example, which has been sold in the US for many years and is a huge source of protein and Omega 3. ✖

INTERVIEW

NO PLACE *but up*



If the government plays its cards right, it can help major firms propel a nascent industry into one of Colombia's top-five exports.

Federico Cock-Correa
PRESIDENT & CEO,
PHARMACIELO COLOMBIA HOLDINGS SAS

Owns total growing space equivalent to 260 football fields

What major achievements did you have in 2018?

2018 was one of the most important years for PharmaCielo to date because we received all the licenses required to start the planting, evaluation, and research of cannabis. It was a great year, and our activities in 2018 laid the groundwork for some significant achievements in 2019, including PharmaCielo Ltd., our parent, becoming a publicly traded company on the Toronto Venture Exchange (TSXV:PCLO) and one of only two companies to receive approval for licensed strains from the Colombian Institute of Agriculture (ICA), which we will be able to commercially produce for oil extraction to meet the needs of domestic and international markets alike. PharmaCielo also announced new business initiatives in Mexico and Italy to establish global operations in partnership with our highly skilled Colombian operation.

How does your channel distributor model for B2C sales work?

It is a new business, and we plan to have different models for different countries depending on the licenses and requirements of each country. We have no plans for direct retail sales; our focus is to sell through authorized medical and health and wellness channels. In Colombia we are piloting medical and pharmaceutical-grade products, including phytotherapeutic and cosmetic lines. At the same time, we are working directly with pharmacies and medicinal clinics to better understand and meet the health and wellness needs of the public. We have committed to begin sales in 2019, including international and domestic markets, assuming regulatory structures will allow. We have already announced our intentions with international markets such as Mexico and Italy, the gateway to Europe as a whole, and we fully expect that it will also be possible to start domestic sales in Colombia in 2019. Of significance for all markets is the differentiation between cannabidiol (CBD) and tetrahydrocannabinol (THC). The World Health Organization (WHO) recently confirmed that CBD should not be considered a regulated international substance, and as its medicinal value continues to be demonstrated on a daily basis, it is a key opportunity for industry growth throughout the world.

What is the potential for the industry as a driver of economic growth in Colombia?

The potential is immeasurable, and cannabis has an opportunity to become one of Colombia's top five exports, along with coffee and cut flowers. This is largely because of the commitment of the Colombian government to developing the industry in a manner that benefits the country as a whole, as opposed to individual players. Similarly, everyone at PharmaCielo is equally committed to building economies within Colombia even as we build our business. On a macroeconomic level, the combination of global product demand coupled with the cultivation expertise of the Colombian labor force (built largely in support of the cut-flower industry) and the natural, ideally suited equatorial environment all combine to create a substantial opportunity for Colombia. As such, it should be a huge driver of growth, especially as the estimated value of the global market for medicinal products continually increases.

What is the importance of first-mover advantage in the medicinal cannabis market in Colombia?

Many companies now hold a license, but to develop a business both in Colombia and globally, one needs to focus on the agricultural and scientific aspects, both of which include genetics as a necessity of product development. We recently received license approval for 10 strains of cannabis, becoming one of only two companies with that publicly acknowledged authorization. Based on this approval, we can now request permission to commercially produce those strains. Without that registration, a licensed producer cannot begin commercial cultivation. This is a perfect demonstration of the first-mover advantage, an approval process that took years to achieve, beginning with genetic strain identification and later including several months of regulated field trials and rigorous data collection and analysis as part of the approval process. All these are a precursor to the equally rigorous scientific challenge of ensuring product purity in the oil extraction process. At the same time, reinforcing the first-mover advantage, we work closely with the research community and universities, ensuring our medicinal efforts are appropriately focused and provide credibility within the medical community. Combined, these relationships allow us to develop different formulas for different illnesses and medical specializations. All these require a significant commitment of time to build an industry as opposed to a mere business. ✖

BIO

Federico Cock-Correa is co-founder, president, and CEO of PharmaCielo Colombia Holdings SAS. A master horticulturist with 30 years of management and leadership experience in in the Colombian cut-flower industry, he has provided production and marketing supervision related to plants and their extracted oils, including developing aromatic and medicinal plants. An expert in developing new crops and enhancing horticultural production techniques, he is a native of Medellín and earned an extension degree in agriculture from the University of Georgia. He is a member of the board of directors of the Colombian Flower Exporters Association (Asocolflores) and vice president of the national board of the Colombian Association of Cannabis Industries (ASOCOLCANNNA).

IMAGINE THIS—1.3 MILLION SQUARE FEET OF OPEN AIR GREENHOUSES

surrounded by awe-inspiring forestry and mountains, just outside of Medellín.

With its outstanding climatic, economic and regulatory conditions, Colombia is the best place in the world to grow cannabis. But, we don't just operate out of the country, **we invest in it.**

[Learn More](#)



INTERVIEW

A PUSH IN *the right direction*



Andrés Fajardo
CEO,
CLEVER LEAVES

As the social, economic, and legal frameworks around medical cannabis continue to improve, doctors, patients, and industry professionals alike stand to gain.

Grew from 5 to

138

employees in 2018

Expects

20

million sqft of active cultivation by July 2019

How has Clever Leaves led the evolution of the sector in Colombia?

Clever Leaves began 2018 with secured funding. We partnered with Northern Swan and started to grow from there. We were pretty much in line with five or six players at that time, and there were clearly two leaders a little ahead of us. Today, we are among the top-two players in developing the medical cannabis industry in Colombia. We have led it in different dimensions; first we have been aggressive in all of our operations deployment and have been able to build over five hectares of cultivation, which are now up and running; these will expand to over 15 hectares by mid 2019. We have also built a GACP-grade post-harvest facility and already started producing in a GMP pharma type production facility; in less than a year that is remarkable for any company in Colombia and elsewhere. We were five people in early 2018, and now have over 130 people. It should reach 200 in January 2019 and over 600 by the end of the year. That gives a sense of how fast we have been setting up our capacity. Secondly, we have been the most aggressive company in developing partnerships with different potential clients across the world, which gives us a solid position to show that we are not only growing cannabis, but have clear destinations for it. Third, we have helped the country make a leap on the regulatory side of things, which is one of the reasons why the cannabis industry has moved forward this year. Fourth, we have invested significantly in innovation at many levels.

What will be the socio-economic impact of a robust medical cannabis sector for Mexico?

The potential is huge. A large part of the healthcare system in Mexico is state run and highly centralized.

If Mexico continues down this path, patients will have access to affordable high-quality medical cannabis relatively soon. From a societal standpoint, medical cannabis does not have a lot of push back. Recreational is a different story, but the medical benefits will be well received. It is clearly a win-win situation for doctors and patients alike.

What lessons can Mexico learn from medical cannabis in Colombia and vice versa?

Mexico has already implemented a few things taken from the Colombian legislation, since there are certain similarities in what they are proposing and what we have. One of the things Mexico has done well is position itself as a country that can supply the world, whether medical or recreational, whereas Colombian law limits production and commercialization to medical cannabis. Though I agree that whether or not cannabis should be legalized for recreational purposes is an issue that must be resolved locally, a country's ability to position itself as a world supplier is economically promising. Colombia could adopt this part of the regulation from Mexico. One thing Mexico could learn from Colombian law, on the other hand, is that it abides by all the international treaties and agreements. In Colombia, we have to get quotas approved with the ICNB, restrictions today that will be an asset for the country from a regulatory standpoint in the long term. ✖

“Today, we are among the top-two players in developing the medical cannabis industry in Colombia.”

BIO

Andrés Fajardo is the CEO and co-founder of Clever leaves. Prior to that, he was Founding Managing Partner of Mojo Ventures, a unique late-stage company builder focusing on working with startups and small companies to achieve unprecedented growth and profitability. He has a degree in industrial engineering and a degree in economics from Los Andes University, Colombia.

a real GROWTH INDUSTRY

Clever Leaves seeks to bring high-quality, low-cost medical solutions to millions of the world's suffering.



Gustavo Escobar
CIO & CO-FOUNDER
CLEVER LEAVES

How did Clever Leaves' operations evolve in 2018, and what have been its main accomplishments?

Clever Leaves was formally created in 2016 by a committed team that wanted to create a whole industry for Colombia, and from Colombia to the world based on low-cost, high-quality products. This dream came through the development of careful and detailed strategic planning on various fronts. By the end of 2018, Clever Leaves had five cultivated hectares and a world-class GMP extraction facility. This capacity will increase dramatically in the coming years in order to achieve the goal of 100 cultivated hectares by the end of 2023. This story, however, continues to be written by the Clever Leaves team, our strategic partners in Colombia and abroad, and every patient and doctor that believes medical cannabis is a viable solution to a foremost global problem. In 2018, there were many accomplishments. Regulations are moving rapidly, and there are open opportunities for Colombian firms like Clever Leaves to export. We already have operations and infrastructure in place and have commercial opportunities in international markets. We are becoming one of the largest players in Colombia, much faster than we expected. The industry is seeing more competitors, which is important for quality to be a priority, and many international companies are coming in to compete in the market. The truth is that competition drives us to be better every day. That brings in more aggressive activity, though we have been working with many of the companies to build up the industry to what we all want it to be.

What does it mean to be a Colombian company in a market with a great deal of international attention and participation?

It means that we have big challenges and great opportunities. That's why in April 2018, Clever Leaves became the first Colombian company to be fully licensed in medical cannabis cultivation and transformation, as well as receiving production quotas for both harvest and fabrication. With this, the company materializes what has been its burning purpose and desire: to bring top-grade medicinal solutions to millions of patients. Our purpose

is clear: We strive to offer consumers and clients high value-added products derived from cannabis plants, helping patients in Colombia and around the world enhance their wellbeing. We actively promote shared benefits for all stakeholders along the value chain by abiding by fair business models founded on trust that are strictly within the boundaries of the law. This is a country where one needs to know how to move; regulations are complex. Many believe they can just come here and plant a seed; however, it is not that easy. There might be many investments and projects by companies that have started abroad; however, they have to come here and understand how things work here and how complex the regulatory framework is. They have to partner with the right people and partners to get up to speed and become competitive. They need to have the knowledge to work in the various environments in Colombia that can be extremely difficult.

What foreign markets have the greatest opportunity for growth?

We have to take into account two main aspects. The first is focusing on psychoactive and non-psychoactive restrictions, while going abroad depends a great deal on the type of product one is producing. We are focusing on combining both. We have thus far been successful in finding the fastest way to access international markets. However, focusing on medical products takes longer: one has to conduct clinical studies and complete more work than just passing regulations. Combining these two aspects, a company can find a way to get access export markets in the fastest time. We have a full combination of doing different things in different timeframes, and by 2019 we should get into some markets. A strong differentiator is having high-quality products, which is what the international market seeks and is something not many companies are capable of offering. GMP-certified products are a significant differentiator. Europe is one of the fastest markets one can enter in terms of the above two aspects and represents a huge initial opportunity for Colombian companies. Canada is another opportunity, and Latin America is the third. ✖

1st

GMP-certified cannabis lab in Latin America

5ha

of cultivation

BIO

Gustavo Escobar is CIO at Clever Leaves. Prior to Clever Leaves, he was Founding Partner at Mojo Ventures, a unique early-stage company builder focusing on working with start-ups and small companies to achieve unprecedented growth and profitability. He has a degree in engineering from Pontificia Universidad Javeriana.



Image: FCM Global

BUILDING THE FUTURE in cannabis medicine

Carlos Velásquez
CO-FOUNDER & CEO,
FCM GLOBAL

What does FCM Global's "Co-Sourced Colombia" model mean to the company, and how does it give you a competitive edge?

FCM Global does not compete with its clients, who are manufacturers in the pharmaceutical, cosmetic, and wellness sectors. Instead we provide customized cannabinoid extracts as inputs for our clients' finished products in a way that meets their standards for safety, consistency, and quality. Additionally, we have the collaborative R&D capabilities to help clients create new cannabis-based products, with the necessary extracts to match. Our goal is to become the "Intel of Medical Cannabis" in supporting top-tier clients across legal markets worldwide. Colombia helps FCM Global extend its early-mover advantages and realize lower production costs thanks to its equatorial climate, optimal growth cycles, and low costs of energy, resources, and land. We can pass these lower costs on to our clients in a way that doesn't sacrifice quality. In fact, the FCM Global "soil-to-oil" platform conforms to both Good Agricultural Practices (GAP) and Good Manufacturing Practices (GMP) and benefits from a transparent governance model.

How has the attitude of Colombia's financial sector changed in regard to the medical cannabis industry over the last year?

I'm glad to say that attitudes have evolved significantly since early 2018, and Colombia's financial sector is now looking closely at the industry. There are now several commercial banks actively participating in the medical cannabis industry in Colombia. Change can always be faster, however there are complexities, which include international and US regulations. Development agencies are getting involved as well. Challenges persist, but as this is a sector with tremendous potential for positive social and economic impact, we are optimistic that the financial system will keep making progress toward delivering the necessary banking solutions. But the onus is not completely on banks. To accelerate the evolution, Colombia's medical cannabis companies need to play their part, be good actors, and build strong viable businesses.

What does Colombia need to fully realize the industry's potential?

There is a great opportunity for the private sector to work closely with the public sector. Collaboration is critical due to the great deal of regulation around "for human consumption." We do not want only private companies taking the lead; it has to be coordinated with government, otherwise inefficiencies will result and innovations will be put at risk. It is



also not just about seminars, but about showcasing products and doing roadshows with global specialists from leading countries like Israel, Germany, Switzerland, and Canada. They have to bring their specialist knowledge and let the Colombian community know this is not about a recreational product that gets one high, but about its medical applications and benefits. Education is a process and has to be reinforced over time and through testimonials about real products on the ground. Having just the theory would make it difficult to obtain traction.

What is the next step for FCM Global to capture a larger market share in this growing market?

2018, and now early 2019, has been a transformational time for FCM Global. We continue to invest in and grow our world-class team of agricultural, operational, and scientific professionals. We are extremely proud that our team is sourced 100% in-country and we didn't leave Colombia for expertise or IP. FCM Global has also been granted a license for five proprietary genetic strains under Colombia's national plant registry, and we will continue seeking approvals for our other 100-plus strains. Strategy-wise, we have three areas of focus. The first is expanding and consolidating our operations in Tolima to ensure we have a consistent, reliable supply of extract to provide to our clients. Our second area of focus has to do with financing. We are currently performing due diligence for several alliances, which include opportunities from growing to developing final products. The third focus relates to forming partnerships in several regions of the world to help develop and distribute final products. The first project is scheduled to be completed in 2019, and the other two in 2020. We are excited about the future and believe we are on track to meet significant global industry demand at unique price points and scale. ✖

FCM Global envisions having a positive impact on the healthcare sector and the economy, though a great deal of education about medical cannabis will be necessary.

BIO
Carlos Velásquez is a Colombian-born investment professional and entrepreneur with over 20 years of experience in the development of physical and social infrastructure in Latin America and Europe across the healthcare, agriculture, renewable energy, and real estate sectors. Prior to co-founding FCM Global, Velásquez served as board member for several companies, and previously as co-founder of both Fondo AAA and Leaf Air Renewable Energy Group. Velásquez began his career at Grupo Argos as a Program Director.

FORUM

CULTIVATION

Colombia has the right climate conditions for the growth of cannabis and, thanks to progressive lawmakers, the right legal climate, too.



Mónica Sánchez
CEO,
CANNABIS MEDICAL GROUP



Bibiana Rojas
COUNTRY MANAGER,
SPECTRUM COLOMBIA



Iván Darío Arias
CHAIRMAN,
PLANTMEDCO

CANNABIS MEDICAL GROUP IS THE BRAIN-CHILD OF THREE FOUNDERS: Camilo Toledo, Iván Camilo Correa, and myself. Due to endometriosis, my gynecologist suggested that cannabis products might be a good option. Thereafter, I had to fly to the US to buy CBD products as it was impossible to purchase them legally in Colombia. Around eight months after I began my treatment, doctors examined my womb and concluded that there was no need to remove it because the disease had been cured. Similarly, my partner Camilo was suffering from psoriasis, and cannabis ointment is the only thing that helped him. Once Colombia legalized medical cannabis in 2016, we thought of starting a business. We didn't know much but because we had experienced the healing power of cannabis, our belief in the idea was strong. After months of hard work, we established the company and Camilo joined us later. We went across Colombia and found out that the vision of the majority of people involved in this industry was different from ours, since our aims and objective were pharmaceutically oriented. The biggest difference is that most of the companies worked with cannabis in an artisanal production or in a small lab. Since we wanted to export, we knew that the artisanal way of producing it would not be a feasible path for us. Furthermore, the pharmaceutical approach is necessary to achieve appropriate hygienic standards of production.

2018 WAS INTERESTING BECAUSE Spectrum, a 100% Colombian-owned cannabis company, merged with the largest cannabis company in the world, Canopy Growth. Spectrum started as a family business two years ago, and we spent those two years traveling to places such as Canada, the US, Jamaica, Israel, Mexico, and Costa Rica for cannabis conferences to establish the best contacts. We had been in contact with Canopy Growth for over a year and a half, and in July 2018, we decided to join forces to bring the best in Canada and the world, together with the best in Colombia. This was a major milestone for Spectrum because now we have the support of such a large company that is trading on the Toronto and New York stock exchanges. Plus, Canopy Growth is 38% owned by Constellation Brands, the owners of major beverage brands such as Corona. This has quite a different level of impact for us. Spectrum itself also started the year on the right foot because we got all our licenses for the cultivation of psychoactive and non-psychoactive cannabis and the production of all the cannabis by-products. I am hopeful that in 2019, we will have our first products made 100% in Colombia ready for the markets. By then, we will have close to 150-200 people on our payroll. Also in 2019, we will likely see other countries in Latin America legalizing the industry. As new countries start coming online, we will start supplying those markets.

THE MOST IMPORTANT THING FOR PLANTMEDCO IS our geographical location in the coffee region, which has been the Colombian flagship for many years. That area has integrated families and has been an example for the whole country. Integrating a cannabis company in the coffee region was extremely difficult. People rejected the product, but we wanted to show the region that our project was a social responsibility project. Its mission is to generate progress and development in an area that had abundance. We wanted to present ourselves to the community as a medicinal aid through our product that will unleash the potential of that area. That zone has the best lands, climate, and altitude. We will produce the best products that will benefit humanity and help the region grow. Before entering Quindío, we sought the support of the government of Antioquia and information from the University of Quindío to get closer to the region. Later, we started looking for cooperatives of coffee and vegetable producers that were looking for another option because their products were not generating enough profits to grow. The governor supported us and allowed us to talk to the communities and explain medicinal cannabis as a crop. People were concerned about the recreational use of cannabis, and we were extremely clear that Plantmedco's vision is to produce medicinal cannabis; we have no interest in subsequent licensing or the legalization of the recreational use of cannabis.

Gabriel Meneses
VICE PRESIDENT,
LATIN AMERICA & CARIBBEAN,
APHRIA, INC.

Partnerships with the Colombia Medical Federation and Caldas University and a well-formulated social responsibility strategy make Aphria one of the leaders in the global medical cannabis industry.

all bases COVERED

How is the company investing to position itself in Colombia?

Colombia is a highly strategic investment opportunity for Aphria, not just to position the company as a local market leader, but also to develop a complete end-to-end platform that will enable Aphria's expansion into wider international markets. To drive market leadership in Colombia, as well as internationally, we will focus on maximizing Aphria's key competitive advantages. This includes executing a consistent global vision that aligns with our core values as well as a go-to-market strategy that touches all critical elements in the value chain. Part of our commitment is managing and controlling the entire value chain to ensure that Aphria's high-quality cultivation and extraction processes, technology, product development, distribution, and medical enablement are led by subject matter experts. Another of our biggest priorities is to continue investing in human capital. We are proud of the talent base we have integrated through the acquisition of Colcanna, a local Aphria subsidiary, and our ongoing commitment and investment in the development of our people.

How is Aphria building relationships with the Colombian medical community?

Aphria was founded on the concept of ensuring that patients have access to high-quality pharmaceutical grade medical cannabis products. We understand the importance of well-founded education based on credible and reliable medical sources that help doctors and patients make the right treatment decisions. We are currently executing multiple medical initiatives and alliances that involve partnering with highly credible and respected education and medical institutions. These initiatives will focus on supporting ongoing medical research, education, and training. One of the most exciting recent developments was our exclusive partnership with the Colombia Medical Federation (CMF), which plays a foundational role in enabling Colombia's medical community as well



as assuring that Colombia maintains global awareness and leadership in medical developments that impact the overall health sector. Notably, CMC has over 2,000 affiliated doctors and a database of about 70,000 medical professionals. We plan to work closely with it to sponsor research initiatives, develop medical training programs, and design certified medical cannabis courses to leverage its virtual training platform.

Do you see medical cannabis as a driver of development in Colombia?

Medical cannabis is an agricultural business, and agriculture is part of Colombia's history and one of its main economic drivers. Medical cannabis is projected to become one of the fastest-growing industries in the world, and Colombia could represent about 10-15% of global cannabis exports. Colombia's contribution to the medical cannabis industry has the potential to significantly boost the local economy and GDP when we consider multiple factors, such as foreign investment and new employment opportunities and tax revenue streams.

What are Aphria's upcoming plans in Colombia?

We are currently building 80,000sqm of state-of-the-art greenhouses across 23ha and constructing our GMP-certified extraction laboratories and facilities. Parallel to this, we are putting together a fantastic team that will build our pharmaceutical route-to-market distribution channel. One of our exciting plans is our social responsibility strategy that we are executing under the guidance of Caldas University, an institution with years of experience in social matters. Equally important, we plan to invest significantly in our surrounding communities to improve their quality of life. We have been able to contribute significantly to infrastructure projects that have improved a segment of the electrical power lines and water supply systems, and we plan to continue helping promote training, education, and employment opportunities. ✖

BIO

Gabriel Meneses is responsible for leading Aphria's Latin America and Caribbean operations, as well as developing new strategic business opportunities that align with the company's overall international vision and direction. Meneses has over 15 years of international experience within the high-tech industry. Most recently, he was responsible for building and leading Apple's first enterprise sales organization in Latin America & the Caribbean. Prior to that, he spent more than 10 years at Cisco Systems. He holds a bachelor's degree in international business from Strayer University.

NUMBER OF PERMITS GRANTED, PER REGION (AS OF SEP. 2018)

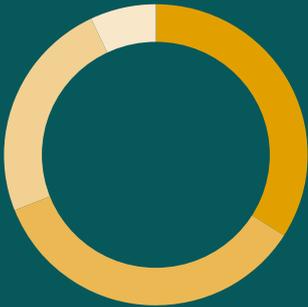
SOURCE: TBY RESEARCH



- 19% Cundinamarca
- 9% Antioquia
- 7% Valle del Cauca
- 7% Cauca
- 58% Other

LICENSES GRANTED, BY KIND

SOURCE: TBY RESEARCH



- 35% Non-psychoactive
- 34% Cannabis-derived products
- 24% Psychoactive
- 7% Seeds for sowing

YEAR IN WHICH MEDICINAL CANNABIS WAS LEGALIZED

SOURCE: GOBAL VIEW RESEARCH

2012	Uruguay
2015	Puerto Rico
2016	Colombia
2017	Argentina
2017	Mexico
2017	Peru



02

Legal & Regulatory

A TICKET TO TOKE

Though President Iván Duque was quick to strike down longstanding liberal possession laws, thus far he has not touched former president Juan Manuel Santos' signature medical cannabis legalization, which promises to add a new branch to the country's economy.

Though overlooked at the time of its passage—partially because far more pressing matters related to the impending peace deal were at play—in July 2016, then-president Santos passed what could easily become the country's most pivotal law in years: Law 1787, which “creates a regulatory framework that allows safe and informed access to the medical and scientific use of cannabis and its derivatives,” i.e. the legalization of the production, consumption, and export of medical cannabis products.

To be strictly overseen by the ministries of justice and health, the law is part of a much larger two-pronged process: to formalize and integrate countless lawless, untaxed regions of the country into the national political and economic fold and cash in on a historic opportunity. Though Santos clearly saw the economic writing on the wall, his was the fourth country in Latin America to legalize the plant for medicinal (or recreational) purposes after Uruguay, Chile, and Puerto Rico (since then Peru and Argentina have also legalized medical cannabis). Given that Canada fully legalized both

medicinal and recreational consumption in 2018, and medicinal cannabis is now legal in 33 states in the US and recreational in 10, the transcontinental race for who can develop the most profitable medicinal market is on.

Colombian lawmakers and public health officials are deeply conscious of playing this new hand conservatively. For a country with the most colorful record of exporting intoxicants in recent human history, regulators are guiding the industry's development with a steady hand. For starters, they have not legalized the raw export of the plant, both as a means of preventing the country from being reduced to a mere cash-crop export hub and as a way of developing its own domestic pharmaceutical industry capable of producing advanced cannabis products fit for export to the rest of the world.

Moreover, it has also strictly regulated which kinds of plant can be grown, where, and how much. Thus far, the Ministry of Justice has issued four kinds of permits: cultivating cannabis seeds for sowing (*semilla para siembra*), of which 16 permits had been granted by September 2018; producing psychoactive plants (anything in excess of 1% THC, the chemical component that, for lack of a better term, gets one high), of which 52 permits have been granted; producing non-psychoactive plants (less than 1% THC), of which 74

“Colombian lawmakers and public health officials are deeply conscious of playing this new hand conservatively. For a country with the most colorful record of exporting intoxicants in recent human history, regulators are guiding the industry’s development with a steady hand.”

permits have been granted; and, lastly, the production of cannabis-derived products, a cornucopia that only grows by the day and for which 72 permits were handed out between 2017-18. Of the 214 licenses given out as of autumn 2018, the most went to Cundinamarca (41), home to the capital of Bogotá; followed by Antioquia (20), home to Medellín; Valle del Cauca (15), home to Cali; and Cauca (15). Thus far, cultivators in 17 of Colombia’s 32 departments have been granted licenses.

Apart from Cundinamarca, whose capital of Bogotá already accounts for 26% of national GDP, each of these departments were all once heavily involved in the illicit drug trade. Crucially, however, thanks to a series of technical resolutions passed in 2017, a strict quota system has also been put in place, especially for producers of psychoactive and cannabis-derivative medicinal products. For all of you out there wondering just what the good the use of non-psychoactive cannabis con-

sists of, a variety of studies have shown that CBD, or cannabidiol, one of several chemical compounds found in cannabis, is thought to combat anxiety, insomnia, and epilepsy, have inflammatory properties, and provide relief from chronic pain and arthritis.

The biggest question now is the extent to which the government of Duque will continue to encourage the sector’s development. Though he ran on a socially conservative platform opposed to many of Santos’ signature achievements, not least the liberal attitude taken to bringing former traffickers, illegal cultivators, and guerillas back into the fold, so far his government, in power since August 2018, has refrained from rolling back the export-facing industry. He did, however, scrap the Constitutional Court’s ‘personal dosage’ ruling from 1994 that decriminalized individuals carrying up to 20g of cannabis, 5g of hashish, 1g of cocaine, and 2g of methaqualone. ✘

the RIGHT CONDITIONS

Khiron has been allowed to flourish in Colombia also thanks to dramatic and progressive changes in the country's legal landscape in recent years.

Juan Diego Álvarez
VP OF REGULATORY AFFAIRS,
KHIRON LIFE SCIENCES CORP.



Colombia has a favorable legal and regulatory framework that has permitted the legal cannabis industry to develop here. How did that happen?

There are different elements that have changed in Colombia's legal landscape over the last couple of years. The main point is that the governance of controlled substances was something that was allowed in Colombia. However, the main change here has been developing the conditions under which pharmaceutical companies can produce the raw materials for drugs. Through a system of licenses, the government has authorized the production of the raw materials needed to develop drugs in the country. Through these legal changes, it was not just the raw material production that was permitted; it also created a new category of drug called phytotherapeutics, a medication whose main active ingredient is a botanical extract. There is currently a big discussion worldwide about ethical drugs, which are drugs that come from a chemical substance, versus the development of new drugs from natural ingredients. The main legal change in the country and in Khiron's focus as a company was the authorization to produce that raw material, i.e. the botanical extract, and the definitions under which one can now do so. Colombia has been a pioneer in the region and now has the most solid regulatory framework available. We have been seeing many changes over the last year in countries such as Mexico, Peru, Chile, and Argentina. But thus far, Colombia has developed a solid framework that investors recognize. You may want to open up a new market and have a product available quickly; however, sometimes it is better to develop a robust framework first that considers all

the specific details you are going to need to produce the raw material for a drug and clearly define the distribution channels. That is precisely what the Colombian government did.

How will this attract investment to the industry?

Having a robust legal framework allows for differentiation between the recreational and medical markets. Many of the developments of legal frameworks worldwide came about as medical programs or changes in the medical use of cannabis, though in reality there were systems of authorization for recreational use. For example, most of the changes in various states in the US did not develop robust medical systems to monitor products or define quality control systems and distribution channels. Colombia decided to create a proper medical graded system to allow patients to access these products. Therefore, the main advantage is that Colombia's system has created safe, quality products. What investors need are clear rules. These reduce the costs of negotiations and give you a better understanding of the legal and economic landscape. But in relation to controlled substances, this is complex and difficult to achieve.

What changes are still needed in the industry?

The main focus of the regulatory framework right now is on the development of therapeutics, while the main challenge worldwide is what are called cannabidiol (CBD) products. Here, the government has defined two categories of cannabis. One is psychoactive cannabis, which is everything that has more than 1% tetrahydrocannabinol (THC), and the other is non-psychoactive cannabis, which has less than 1% THC. Products with

less than 1% THC present no risk, even though they contain cannabis, which typically makes regulators and governments nervous. Hence, the government decided that first it would regulate the really difficult category, psychoactives, and it defined all the systems to control these substances. Now that is done, the main challenge is about being more flexible with the remaining CBD products. In Colombia today, nutritional supplements, beverages, and edibles are already regulated by the government, so the main challenge is to complete the job and regulate market access for these other CBD products. ✖

BIO

Juan Diego Álvarez has 10 years of legal experience in Colombia and is an authority on Colombian medicinal cannabis regulation. He was previously a public policy advisor to the Ministry of Health in Colombia. Álvarez was a consultant for Payson Center for International Development and USAID, a professor of law at the University of Los Andes, and Vice President of Regulatory Affairs at Khiron Life Sciences Corp. Álvarez holds an LL.B from the University of Los Andes, a JD from Tulane University, and an LL.M from Columbia University and is a PhD law candidate.

INTERVIEW



ONLY *a matter of time*

Khiron applies the strictest regulations to its operations in all countries, keeping in mind that adherence to consistent regulatory standards would open doors to all future markets, especially the US.

BIO

Matt Murphy is an executive leader with broad-based domestic and international expertise in both the federal and private sectors. As a Career Special Agent (25 years) with the DEA, he served in a multitude of positions prior to founding the Pharma Compliance Group (PCG). Murphy is an internationally recognized security expert in the fields of drug law enforcement, risk assessment and system development, regulatory compliance, and training.

Matt Murphy
VP OF COMPLIANCE,
KHIRON LIFE SCIENCES CORP.

What edge does meeting DEA-level security protocols give a company trying to break into international markets?

The pharmaceutical industry in the US is one of the most highly regulated in the world, and DEA regulates the controlled substance act through the Code of Federal Regulations, which mandates how any producer, distributor, prescriber, or dispenser of controlled substances adheres to the rules and regulations. DEA has the responsibility as the enforcement and regulatory agency, meaning it regulates the industry to the point where DEA personnel will visit different entities within the closed loop of distribution to ensure that those companies are operating in compliance. At Khiron, we are applying these regulations to the cannabis industry in Colombia and will do this within every country that we operate in so that we have consistent regulatory standards.

What investment in equipment and training had to be made to meet these protocols?

We are employing state-of-the-art technology in Colombia and our operations across the world. Talking about compliance, record keeping, security, and anti-diversion, we track and trace the entire chain. For us to comply with the regulations, we need to be able to track and trace every product. As a result of this, the company prevents misuse, abuse, and diversion from occurring throughout the supply chain.

Have you experienced any unique challenges in Colombia to maintain these standards?

We are utilizing technology that has been tried and tested in the US, including infrared and GPS tracking. It is really compliance that drives the business from the perspective that if we do not have the best compliance, it will affect our reputation negatively. We are extremely cognizant of compliance and spare no expense to ensure we are doing things to the levels that will carry our reputation to where we need it to be.

What is Colombia doing right in its legal framework that can be an example to other places?

We are extremely fortunate to have a member of our staff, Juan Diego Álvarez, be part of the process in bringing regulatory standards. As a result, the regulations were structured extensively with cooperation from the government. The way that the framework has been established is in a manner where the regulations are strict and controlled,

“The way that the framework has been established is in a manner where the regulations are strict and controlled, but at the same time businesses don’t have a regulatory noose around their neck.”

but at the same time businesses don’t have a regulatory noose around their neck. Another positive aspect is regulators doing site inspections and monitoring our activities to ensure that we adhere to the regulations. Nonetheless, all factors are still evolving because medical cannabis has only been in the country for a year and a half; some regulations will need to be tested as the industry evolves and new products are dispensed. Notably, we have been fortunate to have the Canada Capital Markets behind us, which has set us apart as we became the first Colombian-based medical cannabis company to trade on any exchange globally.

What is the potential for medicinal cannabis as an alternative to prescribed opioids?

I have an extensive background in the opioid crisis in the US, and when I was Chief of Pharmaceutical Investigations, it was the beginning of the opioid epidemic to the extent that one could buy hydrocodone online without a prescription. On the other hand, cannabis is still illegal in the US federally, though there have been no cases of anyone overdosing on cannabis. On top of that, there are new medical researches that determine the medicinal value of cannabis. Opioid users in the US who can use cannabis legally are now taking cannabis and having great results. Although there are people in extensive pain that need opioids, for those who do not, cannabis provides a great alternative. It is quite a struggle still because even in states where cannabis is legal, cannabis businesses are unable to use banks. Khiron believes cannabis should be federally legalized because it will not only bring legitimacy and credibility to the industry, but also consistent regulatory standards. ✖

doing it THE RIGHT WAY

Colombia could become the Silicon Valley of medical cannabis, but to realize that possibility, the country needs to continue reforming its regulatory framework, while engaging all stakeholders.



Julian Wilches
CHIEF REGULATORY
OFFICER
& CO-FOUNDER,
CLEVER LEAVES

Colombia has a favorable regulatory framework that has allowed the development of a growing cannabis industry. What is Colombia doing right?

The most important thing is that Colombia thought about adding some additional value rather than being a country that merely grows the plants. The regulators cleverly thought to prohibit the export of dried flowers, which promoted adding all the value within Colombia and establishing an industry that can sell the derivatives, such as cannabis oils, extracts, and finished products. And this has worked well so far. It will take more time to grow the full industry; however, my hope is that Colombia will be the Silicon Valley of cannabis. Therefore, we are bringing in talent from other countries and transferring that knowledge to Colombia's scientists, agronomists, and growers. Another thing the Colombian legal framework did well was create a whole environment specifically for the cannabis industry that takes account of seeds, cultivation, extraction, and exportation. But cannabis is also a plant, and our agricultural agencies, such as the Colombian Agricultural Institute (ICA), still have to learn how to regulate cannabis as a crop and create a better legal framework. Similarly, once cannabis becomes a consumer product, it needs to be regulated by the Colombia National Food and Drug Surveillance Institute.

How do you evaluate the political landscape for future regulatory reforms?

The government is learning about this industry. Some institutions are worried about having a lot of licenses or having companies going to the next step. At present, the government is focused on controlling the industry. The main challenge is for the industry to communicate

to the regulators and congress what it can represent for the country in terms of developing labor, international investment, technology, and science. No other sector has invested as much money in development and technology in 2018 as the medical cannabis sector. What I see from other companies and from our own experience at Clever Leaves is that we have invested millions of dollars, which is actually the government's main agenda. Therefore, we will have a better environment for reforms once government awareness increases.

How are rural governments receiving this opportunity for growth and employment in their communities?

The Clever Leaves crop is located in a conservative and religious small town. When we had our initial conversations with local mayors and communities, they were a bit reluctant. But once we showed them we were doing things the right way and generating employment for people, we became a hub for development in the region. We use proper formal labor practices when we hire, and we have a close relationship with the communities, church leaders, and local governments. We are working together to support development processes in these small towns, not by trying to replace the state, but by being a good neighbor. This creates positive dynamics within these small towns.

What are your expectations for market liberalization in the US?

The US has approved a pharma bill that will regulate the CBD market at the federal level. The question is how it will be applied, because the small details matter. In theory, with the pharma bill, Colombia should have a big market for CBD, but

protectionism or prohibitions on CBD crossing federal borders will come into play. Nevertheless, Colombia must regulate its CBD products to produce whatever the markets demand.

What will the sector look like in 2019, and what role will Clever Leaves play in it?

Clever Leaves has been building its capabilities and structures, including greenhouses, laboratories, and a G&P compliance lab. 2019 will see products being launched in the market, which Clever Leaves will lead. Equally important, market dynamics will change; there are 250 licenses at present, though only 15-20 companies have asked for quotas for 2019. The big challenge is getting products with high standards and quality into big markets in Europe and North America. All in all, in 2019, Colombia will demonstrate its potential in the global cannabis industry. ✖

BIO

Julian Wilches has held posts of leadership with proven results and is highly experienced in designing and implementing drug policies. He is Clever Leaves' Chief Regulatory Officer, structuring and maintaining the company's relationship with different stakeholders. Prior to that, he was deputy director of Interagency Coordination at the Attorney General of the Nation's office and between 2011 and 2014, he acted as Director of Drug Policy for the Colombian Ministry of Justice and Law. Moreover, Wilches has been a consultant and advisor for the Cultural Secretariat of Bogota and the UN Office on Drugs and Crime, among many others. He has a bachelor's in Political Science from Los Andes University and a master's in Journalism from Alcalá de Henares University.

LEGAL STATUS OF CANNABIS IN KEY LATAM MARKETS

SOURCE: PROHIBITION PARTNERS

	Medical	Industrial
ARGENTINA	Legal	Legal
BRAZIL	Legal	Legal
CAYMAN ISLANDS	Legal	Illegal
CHILE	Legal	Legal
COLOMBIA	Legal	Legal
JAMAICA	Legal	Legal
MEXICO	Legal	Illegal
PANAMA	Illegal	Illegal
PARAGUAY	Legal	N/A
PERU	Legal	Illegal
URUGUAY	Legal	Legal

COLOMBIA MEDICAL CANNABIS MARKET SIZE, BY MEDICAL APPLICATION

SOURCE: KHIRON LIFE SCIENCES CORP.



- 43.7% Chronic pain
- 16.2% Depression
- 10.3% Anxiety
- 9.3% Insomnia
- 7.5% PTSD
- 13% Other



Image: Khiron Life Sciences Corp.

03

Pharmaceutical & Medical

A MIRACLE IN THE MAKING

The popularity of medical cannabis has been gaining momentum globally, as evident from the growing list of countries that have legalized it in some capacity. At present, more than 45 countries have passed laws and regulations based on years of research in favor of medical cannabis or cannabis-derived pharmaceuticals to help treat a host of diseases, from chronic pain, PTSD, anxiety, depression, and insomnia to epileptic seizures, epilepsy, cancer, Parkinson's disease, multiple sclerosis, and Crohn's disease.

Enter Colombia, which in 2018 was authorized by the International Narcotics Control Board, an independent body attached to the United Nations, to produce 40.5 tons or 44% of the global quota for medical cannabis for pharmacological and scientific purposes. The process of the legalization of cannabis for research and health purposes in Colombia ended in August 2017, when it introduced the final five decrees that determine safety and quality rules, establish four kinds of licenses, grant benefits for small- and medium-sized producers, and set technical requirements and fees for growing and turning the plant into medicinal, physiotherapeutic, and homeopathic products.

Global demand aside, with a population of 48.8 million, Colombia is home to 6 million potential

patients who may find relief in medical cannabis. Out of those, more than 2.2 million people suffer with chronic pain, at least 475,000 suffer with PTSD, and more than 520,000 deal with insomnia. Moreover, just in Latin America alone, more than 60 million people suffer from conditions such as cancer, multiple sclerosis, and epilepsy.

However, while there is conclusive evidence that confirms cannabis' medicinal value as an antiemetic in adults with nausea or vomiting induced by chemotherapy; an analgesic in adults with chronic pain; and as an antispasmodic in adults with spasticity or multiple sclerosis, more research is required to confirm it can help treat cancer, Crohn's disease, and PTSD, among others. Cannabis contains 142 known cannabinoids, out of which scientists have only studied two—THC and CBD—showing that it may take decades or more to fully understand the plant's effects on human beings.

To that end, Colombia is deploying strategies to compete with countries that have long invested time and money into researching the plant. For instance, some of Colombia's top higher-education institutions like the National University and the University of Valle are offering courses on the scientific research around health benefits and other practical uses of cannabis, and FCM Global, a Colombian medical cannabis company head-

“The popularity of medical cannabis has been gaining momentum globally, as evident from the growing list of countries that have legalized it in some capacity. At present, more than 45 countries are known to have passed laws and regulations.”

quartered in Medellín is opening a research and development laboratory in La Ceja, Antioquia, to offer companies access to cost-effective clinical research and give advisory services to help manufacturers develop new products and formulas, conduct pre-clinical and clinical trials, and test products for safety and quality.

Similarly, Khiron Life Sciences Corp., a Canadian integrated medical cannabis company with its core operations in Colombia, received endorsements and signed agreements with the Colombian Association of Internal Medicine (ACMI) and the Colombian Association of Neurology (ACN). As a result, Khiron became the first medical cannabis company in Colombia to be endorsed by two medical associations and be in a position to directly introduce its brand to almost 3,000 doctors.

The agreements allow Khiron to provide doctors with direct access to a rich repository of information, support, and learning resources about extract-based medical cannabis products. In addition, these resources will enable doctors to receive professional training and support through Khiron’s e-learning platform and academic events in Colombia. More importantly, the agreement with ACMI will lead toward Colombia becoming an important contributor to the body of global research on medical cannabis.

On the other hand, the endorsement from ACN opens a gateway for the investigation of alterna-

tive courses of treatment and will bring academic and scientific support to member physicians across the country. For instance, in February 2018, ACN and Khiron co-hosted Colombia’s first International Medicinal Cannabis Symposium, where over 250 neurological specialists saw national and international doctors explain the plant’s role in modern medicine.

The event marked a highly important step in the progress of the medical cannabis industry in Colombia, as explained by Khiron’s medical director Maria Fernanda Arboleda during an interview with The Business Year. She highlighted how Khiron “carried out questionnaires with doctors in Colombia to gauge the perception of prescribing medical cannabis and found that they were open about having a discussion with their patients but had no idea how to.” She also underlined that although doctors felt there was inadequate medical evidence, they were told the key is to fill the gaps in the evidence base by “participating in research with Colombian and Latin American patients with Latin American products,” which is one of the chief objectives at Khiron.

As more countries realize the potential of medical cannabis, the industry is in urgent need of professional scientific research, which could help businesses overcome long-held stigmas and take their products further into the mainstream economy. ✖

the sky's THE LIMIT

Although a new scientific article on medical cannabis is published every day, misconception is rampant. Clever Leaves is turning the tide by conducting collaborative research and producing standardized products.

Ana Valencia
MEDICAL DIRECTOR,
CLEVER LEAVES



What is the medical potential of cannabis, and what conditions can be addressed through its products or derivatives?

Medical cannabis has many applications because it modulates the cannabinoid system, which is one of the most important systems in the human body. When it comes to maintaining homeostasis, it acts as an equilibrium. From this point of view, medical cannabis has an amazing potential and can aid in the treatment of many pathologies, even if it does not act as a cure. For example, there are pathologies with strong clinical studies that are seeing momentum for the use of medical cannabis in patients undergoing chemotherapy or suffering from chronic pain and spasticity by multiple sclerosis. Many other pathologies are under study like cancer, acute pain, spasticity for other causes in cephalic trauma, sleep disorders, traumatic brain injury, depression, and abnormal movement. Medical cannabis has immense potential and notably, more studies and investigations have been conducted on it as compared to other medicines in the market. We know how it works, though the complexity of the endocannabinoid system and the plant is a challenge for science. In a few years, we will possibly discover other components of the endocannabinoid system or other applications for medical cannabis.

What role do companies like Clever Leaves play in furthering the understanding of cannabis as medicine?

Clever Leaves' role is extremely relevant. We strive to offer our consumers and clients high value-added products derived from cannabis plants, helping patients in Colombia and around the world to achieve enhanced wellbeing. We actively

promote shared benefits for all stakeholders along the value chain by abiding to fair business models founded on trust. Based on the fact that medical cannabis is a medication and is used for sensitive pathologies, a company like Clever Leaves has the opportunity as well as the responsibility to produce high-quality medications derived from cannabis. These are standardized products that follow modern scientific methods and guarantee a certain concentration of the cannabinoids and are free of any contamination, demonstrated by random clinical trials.

What are the most common misconceptions regarding medical cannabis, and what is your role in changing this perception?

For now, patients and doctors are waiting for more research and information about medical cannabis' properties. However, it is important to point out that roughly one scientific article is published per day, so we know a great deal about the plant and how the system works, however, most physicians do not learn about the endocannabinoid system or medical cannabis in university. The patients learn from the internet or by word of mouth, which is a huge problem. Clever Leaves works on medical education, and has introduced the first medical cannabis diploma, a 90-hour academic course at the University of Rosario. Research is necessary to build evidence, though Colombia has great potential because it has certain advantages that make it possible to produce high-quality medical cannabis products. Additionally, we have centers, hospitals, and universities with experience in related research. Moving forward, Colombia will be the Silicon Valley of cannabis research.

What can we expect from Clever Leaves in 2019?

Having in mind that cannabis is experiencing a boom in Colombia, our responsibility as a serious company is to develop research in order to bring doctors and patients into confidence. Equally important, our products need to be safe and standardized. For this reason, we designed the phase one study to use our product on patients so that we know how it works. If we have excellent results, then we will begin phase two, which is chronic oncologic pain and medication in anesthesia. The other phase two study is regarding spasticity in kids, and we hope that by end-2019, we can begin phase three, which will be a multi-center study of oncologic pain with four clinics in Colombia and possibly in Chile. The company wants to do the right thing, and we want universities to play their part. ✖

BIO

Ana Valencia is a specialist in anesthesia and resuscitation with more than 15 years of experience in clinical practice. She has conducted studies in regional anesthesia guided by ultrasound and is currently pursuing a master's degree in bioethics. Valencia has also worked as a teacher at several universities, and at present, she is teaching anesthesia and advanced courses of reanimation at Rosario University. She has been studying medicinal cannabis for more than three years and has become a medical consultant for Clever Leaves. As a pioneer educator for cannabis doctors, she is coordinating the first medical cannabis certification for doctors in Colombia and is responsible for the development of clinical research on medicinal cannabis. She has a doctorate in medicine from Militar University.

INTERVIEW



SEEDS FOR *sowing*

Khiron is sowing the seeds for the success of cannabis as medicine by filling the missing gaps in research and adapting its products to different Latin American countries.

María Fernanda Arboleda
MEDICAL DIRECTOR,
KHIRON LIFE SCIENCES CORP.

Where does Colombia fall in terms of the medical community?

Khiron determined the need for medical cannabis by identifying the needs in Colombia and the realities on ground. Based on our studies, we found that out of 48 million people living in Colombia, about 6 million would benefit from medical cannabis. Moreover, we carried out questionnaires with doctors in Colombia to gauge the perception of prescribing medical cannabis, and we found that they were quite open. These doctors mentioned that they were open about having a discussion with their patients, but they had no idea how to. They also felt there was also not enough medical evidence or research backing up the usage of the substance. According to us, even though people may say there's not enough evidence, that doesn't mean it doesn't work. It means that we need to build it up and continue filling the gaps that exist, and that is what we do at Khiron. We are participating in research with Colombian or Latin American patients with Latin American products because we want to build up that evidence base.

Could you tell us more about the research Khiron is focused on?

Medical conditions such as cancer, epilepsy, chronic pain, and PTSD have symptoms that affect the patient. For example, epilepsy causes seizures and PTSD causes anxiety. These are the symptoms that we want to treat for each disease. When we clarify that, we are not curing diseases themselves; we are only able to control the symptoms among different medical conditions. For example, many patients with advanced cancer come to us after reading on the internet that cannabis can cure cancer; although, there are such cases, we first have to manage clients' expectations and be realistic. We can help them with their symptoms but we cannot cure cancer. There are many symptoms that can be targeted

with cannabis: chronic oncological pain, insomnia, depression, lack of appetite or anorexia, and nausea and vomiting related to chemotherapy. For epilepsy, we can reduce the frequency of seizures and the intensity of them. The same goes for chronic pain; some patients with pain will say that they still feel the pain, but they are able to cope better after being treated with cannabis. Our products are based on the Canadian model and we are adapting them to different Latin American countries according to cultural beliefs.

What is the potential of cannabis for mitigating the opioid epidemic?

I am a pain physician, and pain physicians prescribe a number of opioids. At present, we want to determine if there is an opioid-sparing effect. Every day, around 90 people in the US die from opioid overdose, including opioids prescribed by doctors, which is extremely unfortunate. With cannabis, we see it leading to a lower dose of opioids in a clinical practice. That is the case sometimes, though this is not yet true for the clinical evidence collected so far. In terms of the opioid-sparing effect of cannabis in the literature, most studies were conducted on animals in preclinical studies. Studies show that when cannabis is given to mice that are also receiving morphine, cannabis reduces the amount of morphine required by more than three times; the same is true for codeine. Among clinical studies and trials, there was a systematic review published recently with a meta-analysis considered at the top of the ladder that deemed all nine clinical studies on humans inconclusive. We are building on that now, and part of my current research is finding out if the opioid-sparing effect is true. We are also doing that with Khiron and eventually planto carry out clinical research in Colombia, Mexico, and other parts of Latin America. ✖

BIO

María Fernanda Arboleda is an anesthesiologist and a pain and palliative care physician. She also completed a spine-regional anesthesia fellowship at the McGill University Health Center and was a post-doctoral research fellow in supportive cancer care and medical cannabis at the department of oncology, McGill University. Presently, Arboleda is the Medical Director at Khiron Life Sciences Corp. She is a co-investigator on several research projects being developed in Canada, including the deployment of a phase two study on the use of cannabis oil capsules for chronic pain, as well as the first phase three study for the use of inhaled cannabis to improve health-related quality of life in advanced cancer patients.

**POSITIONED TO BE THE
LEADING MEDICAL CANNABIS
COMPANY IN LATIN AMERICA**



**41,8
MILLION** Potential patients
in Latin America.



4 Operating jurisdictions.



1 First to market CBD
cosmeceutical brand in
Colombia and with approvals in
other andean countries.



6 Medical association
endorsements in
Colombia and Mexico.



15 Medical cannabis events
and training programs.

INTERVIEW



Dr. Marisol Duque
FOUNDER &
CHIEF EXECUTIVE OFFICER,
ECOPHARM

With over 50 years of experience developing plant-based medicine, Ecopharm is well positioned to become a main contributor for building awareness within the medical community and instilling confidence in the general public regarding the safety and efficacy of medical cannabis.

BIO

Dr. Marisol Duque is a medical surgeon. She is a specialist in naturopathy and alternative, biological, and anti-aging medicine, with more than 20 years of experience in plant-based research and patient care.

SCIENTIFIC *rigor*

What is the history of Ecopharm, and how has it transitioned from medical sciences to include the nascent medical cannabis field?

Ecopharm has over 50 years of experience treating patients with plant-based medicine. This is a family tradition. My father was a doctor and the first person in South America to obtain a license for cannabis research in the 1980s. My mother is also a doctor and has practiced naturopathic medicine for years. I have seen a profound impact on thousands of patients through R&D of plant-based medications at our clinics located in Arbeláez, and Bogotá, Cundinamarca. Traditionally, there have been regulatory barriers to working with certain plants, such as cannabis. Nonetheless, three years ago, we expanded our work with cannabis across a broad spectrum of pathologies. For example, we recently incorporated the cannabis molecule into our research on Alzheimer's disease, which we have been conducting in partnership with an international research group. We have created various original protocols for treating patients at our clinics, and we are working with a prolific network of specialists, scientists, and doctors on high-integrity product formulas that we believe will positively impact the lives of millions of patients worldwide through our clinics, licensing partnerships, and other distribution strategies.

How are the perspectives of the medical community evolving regarding cannabis?

There is a lack of research and clinical data demonstrating the safety and efficacy of cannabis. This has been filled over the past few years by international researchers and scientists with promising results for key medical indications. The medical community needs to continue its work to validate cannabis as an effective medicine for target pathologies and an alternative to existing drug treatments. The medical community will be receptive to the benefits of medicinal cannabis-based products once credible data exists to inform treatment, dosages, and other therapeutic guidelines. Moving forward, medical trials should demonstrate the quality, efficacy, and non-toxicity of medicinal

“Ecopharm is expanding upon its cannabis-focused clinical work, and we expect to end 2019 with more than 400 patients participating in our clinical trials, and a database of tens of thousands of patients.”

cannabis-based products. Ecopharm is staking out a leadership position in this movement. The company is developing pharmaceutical level cannabis-based medicine in line with GMP, R&D manufacturing and compliance standards. We also control and directly manage each part of the value chain, from design to execution. Ecopharm is unique in that it has decades of experience interacting with patients understanding what works and collecting data points. We have spent years researching and collaborating with universities, and we are creating a clinical research program to add to our collective knowledge on the benefits of this powerful plant. As this work continues, it will be essential to educate both the medical community and the public in order to mainstream this information and help doctors fulfill their purpose: to help patients.

How can Colombia become a world leader in terms of medical research on cannabis?

Colombia is becoming known across the global cannabis industry for its optimal growing conditions and low-cost production. This is true and presents a significant advantage for Colombia. At the same time, the country's medical industry is extremely developed and its quality is well regarded around the world. It is time to go beyond Colombia's competitive cost advantages and transform the country into a leader of value-added clinical data, product research, and intellectual property development for

cannabis. The real opportunity for Colombia is to capture more of the value chain, strengthen companies' research capabilities and product development infrastructure, and become a leading provider of breakthrough products and solutions, rather than just cost-effective plant inputs. At Ecopharm, we strongly believe in this opportunity, and we will continue to build the scientific pillars to position Colombia as a global leader in medical cannabis innovation and validation. To this end, we are rolling out R&D and product development programs for specific medical conditions that we believe will result in maximum social impact and global relevance for Colombia.

What can we expect from Ecopharm in 2019 and beyond?

Ecopharm is implementing global best practices in each one of its fully vertically integrated areas, from seed genetics to product formulation, and patient treatment. We have a seasoned management team in medicine, science, chemistry, agriculture, and product development. We are an intelligence-driven company, and we continue to attract top-tier, multicultural talent as we prepare for global growth. Ecopharm is expanding upon its cannabis-focused clinical work, and we expect to end 2019 with more than 400 patients participating in our clinical trials, and a database of tens of thousands of patients. Our expectation is to develop the best-quality

products capable of making a profound difference in the treatment of pathologies and improving the quality of people's lives. We are also working hard to gather the largest cannabis intelligence platform in the region to provide medically supported content related to medical cannabis data and its benefits. Ecopharm aims to expand its clinics, patient engagement, and product distribution to several strategic, international markets. Ecopharm is well positioned to become a main contributor for building awareness within the medical community and instilling confidence in the public regarding the safety and efficacy of medical cannabis. This inflection point will have an immense impact on the quality of human life around the world. ✖



Marisol Duque
Founder and Chief
Executive Officer



Impacting lives

Ecopharm has fifty years of plant-based research and patient care experience. Our expert network of doctors and scientists is on the leading edge of Cannabis medical discovery to deliver products that improve lives globally.

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People at the Expo Cannabis fair in Montevideo in December 2014. The event focused on the medical use of cannabis and cultivation techniques.

Image: Reuters

04

Business Events

BIGGER THINGS TO COME

For certain sectors and places, the stars have a way of aligning. Overall tourism to Colombia has increased by over 300% since 2006, from 1 million that year to more than 3.25 million in 2017, a growth rate that reached 24.4% after hovering at an impressive 13% from 2014-16. And though 79% of those visitors came for pleasure, according to Colombia's Trade Ministry, the last three years have also seen an explosion of medical cannabis-related conferences, events, and exhibitions.

Expomedeweed, for example, has been held with great fanfare in Medellín for three straight years now. Hosting a huge variety of players from the medical and extraction-growing side of the business, this year's edition will feature Colin Bell, a PhD in soil microbial ecology and the co-founder and director of Growcentia, a Colorado-based biotech firm devoted to helping farmers maximize plant growth, quality, and health through organically derived plant biogrowth stimulants; Denis Contri, the founder of Pideka, Colombia's oldest indoor marijuana cultivation facility; and Lorena Beltrán, founder and director of CannabiSalud and the scientific secretary of the Sociedad Española de Investigación sobre Cannabinoides, to name but a few.

In Bogotá, there has been no shortage of leading international symposiums. In 2015 and 2018, it hosted the rotating international Expo Cannabis, which brought together many of the world's leading producers, suppliers, researchers, and academics to discuss the industry's latest findings with regards to the plant's benefits on people and the environment and the state of production methods across Colombia. Last November's speakers included Dr. Mariano García de Palau, Director of the Kalapa Clinic in Barcelona and a leading Spanish expert on the medicinal benefits of marijuana on epilepsy and autism, and Dr. Paola Pineda, scientific director of the Medellín-based Curativa Group and a leading Colombian expert on the benefits of marijuana on treating patients with chronic illnesses.

The capital also played host to Expo Cáñamo, or the Hemp Expo,

the country's first symposium entirely dedicated to exploring the productive, industrial, commercial, artistic, academic, and cultural benefits of hemp—areas that include, but are not limited to, pharmaceuticals and public health, food and beverage, textiles, paper, construction and new materials, and bio-combustibles and biopolymers, a chemical compound often used in plastics. Organized with the approval of Colciencias, the Administrative Department of Science, Technology and Innovation, it brought together many of the country's leading academics, researchers, and budding producers from the field.

In May 2019, Bogotá will host one of its most exciting conferences yet, CannaCiencia, the cannabis science Symposium of the Americas, as it bills itself. A two-day scientific “experience” that brings together the industry's most renowned scientists, academics, doctors, nurses, pharmacists, industry insiders, policy makers, and entrepreneurs from around the world—not to mention its most cutting-edge technology—the symposium is designed to provide state of the art training and education on the benefits of medical marijuana on epilepsy, neuroinflammation, multiple sclerosis, psychosis, PTSD, chronic pain, migraines, fibromyalgia, osteoporosis, diabetes, and different types of cancer, among others.

With a heavy influence on research methods, it will also cover a vast array of critical fields such as endocannabinoid systems, cannabis biotechnology, sample preparation, chromatography, mass spectrometry, cannabinomics, terpene profiling, quality control testing for public safety, contamination analysis, genetics/genomics, regulations, legalization, scientific methods and standards, and other medicinal uses. It will be organized by the Cannabis Entrepreneurs Network, a non-profit that hopes by serving the Latin American legal cannabis community as a business accelerator and educator, it can make significant headway in reducing poverty and unleashing Latin Americans' entrepreneurial spirit. ✖

INTERVIEW



Julián Tobar
CEO,
EXPOCANNABIZ

How did the idea behind ExpoCannaBiz come about?

I am a licensed cannabis grower in Colombia. The majority of events related to cannabis only focus on the medical uses for cannabis and education. Importantly, repetition of one format results in the industry demanding something new. With that in mind, we created an expo that does not focus only on the business side. If we want to have a successful business, we have to put our efforts into increasing efficiency and exports. There are companies in the industry that do not have backing from international companies; many entered the business thinking it would only cost a few hundred thousand dollars, not a few million. After traveling to different expos, I realized we needed to have such an expo in Colombia and other countries in the region. Uruguay was the first country to legalize recreational marijuana, followed by Chile, Brazil, Peru, and Panama. Countries are legalizing medical cannabis as a starting point. When it is legalized without an expo, companies need to go to other countries to learn; however, it is sometimes hard to obtain a visa for such purposes. Based on all these factors, we decided to establish ExpoCannaBiz.

What is the significance of ExpoCannaBiz for the development of the cannabis industry in Colombia?

Since no such event was held in Colombia before, we have seen great responses from several major players in the medical cannabis industry. This is not just for Colombia but also for the entire Latin America. Moving forward, ExpoCannaBiz will be a hub for entrepreneurs and investors to meet other investors and buyers. For example, an increasing number of people from Canada and the US are showing an interest in the cannabis industry. Others believe the event will be a great place to be, as the industry is booming in this part of the world. Most importantly, there are many

CHANNELING *success*

ExpoCannaBiz is the result of the medical cannabis industry's need for a B2B expo and is aimed at linking all stakeholders and assisting countries that are on the move toward legalization.

well-informed investors looking to enter the Colombian market.

How does the involvement of high-profile political figures help the advancement of the industry?

Everyone questions if cannabis is legal in Colombia; they think it is still illegal because of the war on drugs. Once they realize it is legal and that we have people in the government involved in the event, they realize we are on a completely different level. This event will be a more business-oriented expo, which is what everyone has been waiting for. All the different stakeholders want a B2B expo, not just a consumer expo.

How can ExpoCannaBiz change the perspective of cannabis in a conservative country like Colombia?

When people who have someone in their family suffering from cancer or Alzheimer's are told they have a short time to live or have to go through chemotherapy, they often learn that cannabis can provide alternatives to reduce pain or enhance the quality of time they have left. For example, cannabis helps such patients regain their appetite or sleep more soundly. One often cannot understand something like this until it touches them. As more researches and studies are carried out, scientists are discovering more medical conditions for which cannabis can help both patients and families.

What can other countries looking to develop their cannabis industries learn from Colombia?

Senator Galán will be one of the attendants at ExpoCannaBiz, and he will talk about his personal motivations for entering the industry. This may change the perspective of other countries that have not legalized cannabis yet. With the news law that the Colombian government has introduced, there is a great deal of potential. Like

BIO

Julián Tobar is an entrepreneur and a businessman with extensive experience in the insurance industry. Apart from being the Co-founder and CEO of ExpoCannaBiz, he is the founder and CEO of Global Insurance & Associates, Tobar enterprises Inc, and Tobar Investments LLC. More recently, he co-founded Ethnothecharium Botica Natural, a cannabis farm and extraction lab in Colombia.

every other law, there are some flaws; however, other countries will learn from us the same way we are learning from countries such as the US and Canada.

What are your goals for ExpoCannaBiz in 2020?

We have some attendees in mind who are pro-cannabis. I cannot release any names at this time, though we have many candidates. We want to make this a great event annually. My goal is to attract 4,000 people in 2019, and I expect a minimum of 2,500. In 2020, I hope to increase turnout by 30% or so and attract new speakers with something nuanced to present. By that time, other countries will have developed their own industries. Our expectation is for ExpoCannaBiz Cartagena to become the hub for Latin America. In the near future, we want to achieve the same scale as the expo in Las Vegas, which attracts 20,000. While we may not have 20,000 attendees, we will have people from all over the world who can share information and create business. The

chief purpose to attend conferences is to learn from those who have been in the business for a while, those who have gone through challenges, and those who have achieved success. ✖

“Everyone questions if cannabis is legal in Colombia; they think it is still illegal because of the war on drugs. Once they realize it is legal and that we have people in the government involved in the event, they realize we are on a completely different level.”



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