CANNABIS SECTOR
IN URUGUAY

Fotmer Life Sciences

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Uruguay XXI
INVESTMENT, EXPORT AND COUNTRY
BRAND PROMOTION AGENCY

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1. EXECUTIVE SUMMARY

- The cannabis sector is undergoing major developments in the areas of regulation, mergers and acquisitions, research, and development of new products worldwide, as a result of changes in national legislation in the 21st century, which are currently underpinning the global growth of the business.

- In the coming years, it is expected that the countries of the region will continue to incorporate changes in their legal frameworks to facilitate the development of these activities, both by local and international companies. This will allow better access to and availability of products, which are expected to drive market growth in Latin America.

- Uruguay has one of the most developed cannabis cultures in the world, being a pioneer in the legislation of the plant for its various uses. Since 2013 it has regulated production, commercialization, and consumption.

- The global development, and mainly the multiplicity of players in Uruguay, have driven the business, as well as the adoption and adaptation of policies to take advantage of the benefits provided by the early adoption of the regulations, which are still in full force and effect. Foreign investment and the commercial opportunities that have arisen have also supported this growth in the country.

- Although there is still plenty of room for development at the local level, the sector currently generates more than 1,000 direct jobs, which increase significantly during the harvest season (transplanting and harvesting). More than 120 companies are involved in the sector, more than 80% of which are MSMEs.

- The development of the cannabis industry in Uruguay is export-oriented, with recent investments in the medical cannabis sector. In 2019 it achieved its first export and the following year saw external sales exceeding US$7.5 million. In 2021, exports reached an all-time high of US$8.1 million.

- At the same time, there has been a development of academic and scientific research, key for adding value to the sector, which has a high potential for the development of other uses, especially food.

2. THE CANNABIS INDUSTRY IN URUGUAY [1]

Uruguay was the first country in the world to regulate cannabis production, both for recreational, medicinal and industrial use, through Law 19.172 in December 2013. This law also created the Institute for the Regulation and Control of Cannabis (IRCCA), in charge of implementing regulation and controls related to the planting, cultivation, harvesting, production, processing, storage, distribution and dispensation of cannabis. Successive decrees have favored the development of this industry in Uruguay, not only at the productive level, but also in the promotion of scientific research, allowing the realization of exports[2].

The national legislation ratifies that the State and the IRCCA will promote research that contributes to the knowledge and production of scientific evidence regarding both psychoactive and non-psychoactive cannabis, in addition to declaring of public interest research on cannabis and its applications in all areas of knowledge, and those actions aimed at protecting, promoting and improving public health through products based on cannabis or cannabinoids.

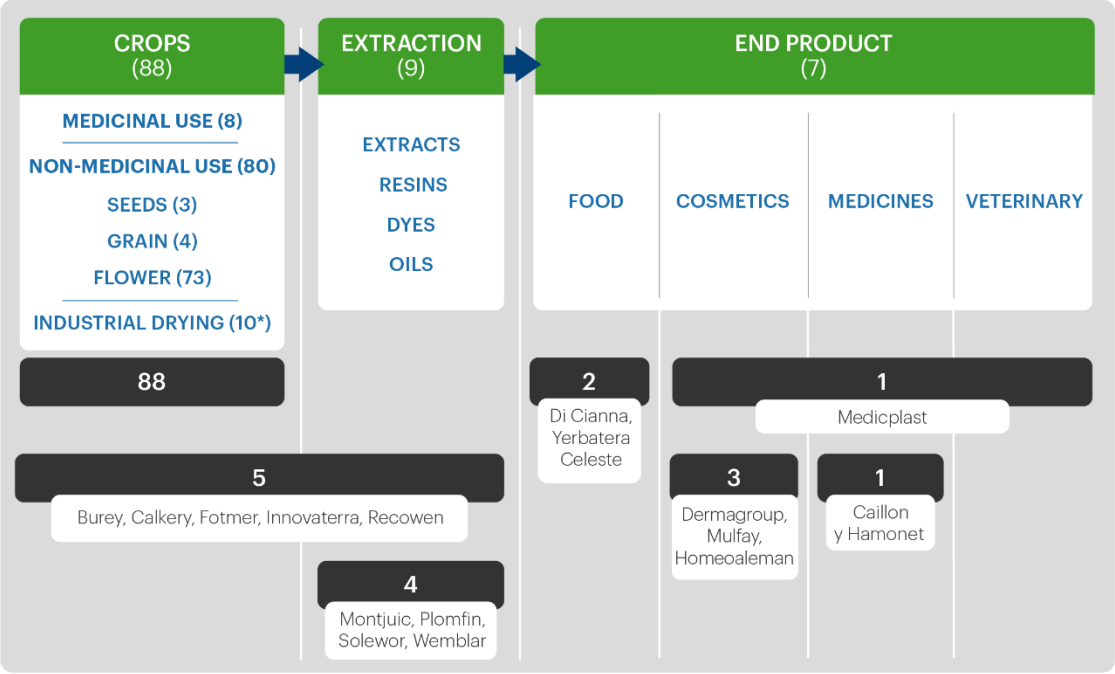
The activity of companies linked to the cannabis industry in Uruguay is increasingly reaching a wider range of possibilities, while associated services are multiplying and diversifying. Although the activity of the main companies is explained by these actions, many others provide associated services and complete the business map of the sector. A summary of the organization of the chain is shown in Figure N°3. In particular, authorizations by the IRCCA and the Ministry of Public Health cover cultivation -psychoactive and non-psychoactive-, research and industrialization.

[1] Based on a report prepared by Eduardo Blasina for Uruguay XXI in 2019.

[2] In 2020, two new laws were approved with reference to the sector (not yet regulated). Law 19,845, declares of public interest the research and applications of cannabis in all areas of knowledge. The law provides for tax and administrative facilities for imports of goods related to research and provides for the creation of the Uruguayan Center for Advanced Cannabis Studies (CUDEA Cannabis), for the generation of knowledge, research orientation, development and transfer of technology and training of human resources. It also provides for the creation of the National Cannabis Research Fund.

On the other hand, the objective of Law 19.847 is to protect, promote and improve public health through quality-controlled products based on cannabis or cannabinoids. An important point of this law is the creation of the National Program of Medicinal and Therapeutic Cannabis, whose objective is to achieve an improvement in the quality of life of people through the inclusion of medicinal and therapeutic cannabis in the National Health System. Likewise, the creation of two commissions is promoted: one for the inclusion of cannabis in the financial system and the other to support and promote the activities of small and medium-sized producers.

FIGURE N°3 - VALUE CHAIN OF THE CANNABIS SECTOR IN URUGUAY



(*) Data as of December 2020.

The multiplicity of actors and the high potential of the sector favored the emergence of actors that facilitate the development of ventures. An example of this is the emergence of accelerators, as is the case of the Brazilian The Green Hub, which since May 2021 is installed in the country[3].

Uruguay has a long tradition in the pharmaceutical industry. Companies and human resources are recognized for their extensive experience and knowledge in the field, which is reflected in the strong growth of exports of pharmaceutical products, especially since the installation of several companies in the country's free trade zones. In addition, Uruguay has positioned itself as a regional hub for pharmaceutical products for the Southern Cone and offers important advantages for the location in the country of companies that develop these activities. This know-how positions Uruguay as a reference country for the installation of a regional hub for cannabis products.

Uruguayan legislation provides for the promotion of these activities in Decree 282, which governs the regulation and control of logistical operations with therapeutic medical cannabis products in those customs warehouses authorized by the Ministry of Public Health (MSP) and the IRCCA. Thus, the warehouses will be able to receive imports -prior authorization from the MSP- to be redistributed in the region.

[3] Source: El País – "Aceleradora brasileña de startups del sector del cannabis llega a Uruguay"

This scheme would facilitate, for example, the entry into the Brazilian market -whose imports are specific for each patient- of medical cannabis products. The hub makes it possible to import complete batches, split them up and carry out operations between Uruguay and Brazil[4].

2.1. SHORT AND MEDIUM-TERM DEVELOPMENTS

The potential for cannabis uses in Uruguay is extensive. A natural path for the country's profile would be the food and beverage industry. Although it already has examples of cannabis use in yerba mate and edible oil, there is room for growth in this segment.

Cannabis is expected to have a high growth in global food consumption at the international level, as is the case of chia and quinoa. Similarly, the sale of edible oil has a high potential. Once the oil has been processed, a protein meal remains, which also has an excellent composition as food for both humans and other animals. On a global scale, the so-called "edibles", proteins for vegetarians and sportsmen, are significantly expanding a market in which Uruguay could have a relevant participation in production.

A related area is animal feed, differentiating the use for cattle, pig, or chicken feed, on the one hand, and the use as a dietary supplement in pets, which has a strongly developing market in the United States.

At the same time, the genetic base is key in this sector, and it is particularly relevant to have national genetics adapted to local conditions -and to the multiple potential uses of the plant- but also with clear rules for the incorporation of foreign genetics, as well as the development of local breeding programs. In Uruguay, the process took place through the acquisition of foreign genetics and the subsequent development of research in national genetics that allows autonomous and adapted production, in addition to generating the service of genetics development for entrepreneurs who have legal restrictions to do so in their own countries or who need to multiply in the off-season.

In Uruguay there is a progressive development of the medicinal segment. Most of the companies start their development foreseeing, or directly implementing, the protocols of good practices at the different levels of the chain that allow them to be part of this segment. In the Industrialization section we will go into more detail on the development of products in the country.

[4] Source: El Observador – "Otro negocio para el cannabis medicinal: Uruguay como hub de distribución regional".

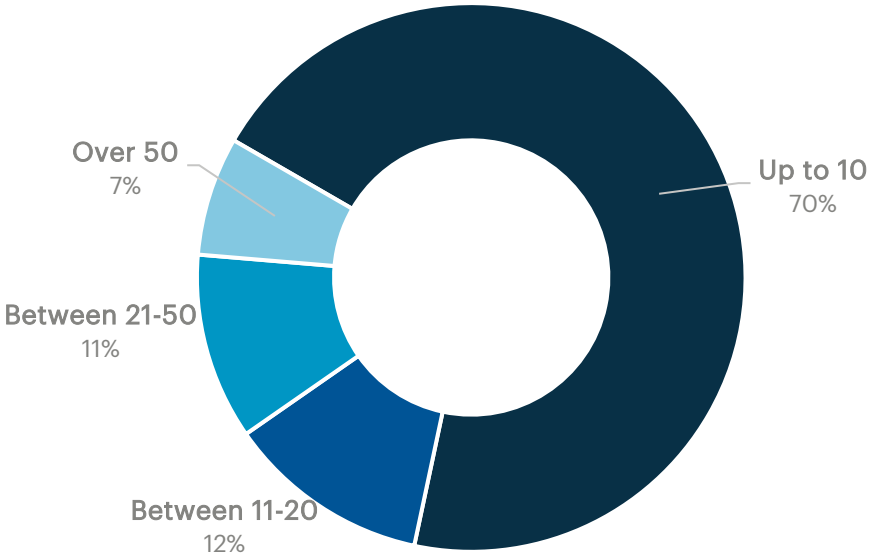
2.2. EMPLOYMENT AND STAKEHOLDERS

According to data from the Ministry of Labor and Social Security (MTSS) and the Ministry of Livestock, Agriculture and Fisheries (MGAP), the personnel directly employed by the sector totaled slightly more than 1,070 workers in 2020. Almost 80% of the workers surveyed worked in the interior of the country and 35% were women.

As in the rest of the economy, MSMEs represent a high percentage of the number of companies - in the case of cannabis, 83% of the total - and account for 32% of employment.

Of the total number of companies, 70% have fewer than 10 dependent employees, 12% have between 11 and 20 employees, 11% have between 21 and 50 employees and the remaining 7% have more than 50 employees.

GRAPH N°4 - PERCENTAGE OF COMPANIES BY NUMBER OF EMPLOYEES



Source: Uruguay XXI based on Ministry of Labor and Social Security.

These figures do not include the indirect jobs generated by the sector, which include logistics activities and the sale of agricultural inputs, among others. In addition, specific stages of the harvest, such as transplanting and harvesting, require much more labor. It is estimated that between 8 and 10 people per hectare are required for transplanting activities and 18 to 22 for harvesting.

The business ecosystem consists of more than 120 companies, of which 60% have only a cultivation license from MGAP, 5% also have an IRCCA license and 20% only have an IRCCA license. In addition, 20% of the companies surveyed have a license under evaluation. Table N°2 shows a summary of the companies in the sector in Uruguay according to the licenses they have and what is detailed in points 5.4 to 5.6.

TABLE N°2 - VALUE CHAIN OF THE CANNABIS SECTOR IN URUGUAY

Cultivation	Cultivation		Industrialization			Research	
THC <1%	Recreational	THC >1%	Medicinal extracts	Cosmetics	Specialties Vegetables	Public	Private
80 licencias	Uruguay Biopharmaceutical	Algamur	Medic Plast		Yerbatera Celeste	IIBCE	Camino Florido
	Jabelor S.A.	Burey	Burey	Mulfay	Di Cianna	UDELAR	Hardolin
	Legiral S.A.	Fotmer	Calkery	Dermagroup			Innovaterra
	ICC	Gilkenal	Fotmer	Homeoalemán			Recowen
	Simbiosys	Recowen	Montjuic				Media lab
		Bandotur	Plomfin				Germinar UY
		Velosil	Recowen				Inverell
		Dormul	Solewor				K Life Science
			Wemblar				Burey
			Caillon & Hammonet				
			Innovaterra				

Fuente: Uruguay XXI con base en el MGAP e IRCCA.

2.3. EXPORTS

Global cannabis exports are controlled by the International Narcotics Control Board (INCB) and are governed by quotas for each country. International trade focuses on both extracts and raw flowers.

The main condition that determines the controls and authorizations required in each country -and even allows or excludes the possibility of trading- is the THC content in the product. This means that from what percentage of THC the substance is considered psychoactive in their legislation.

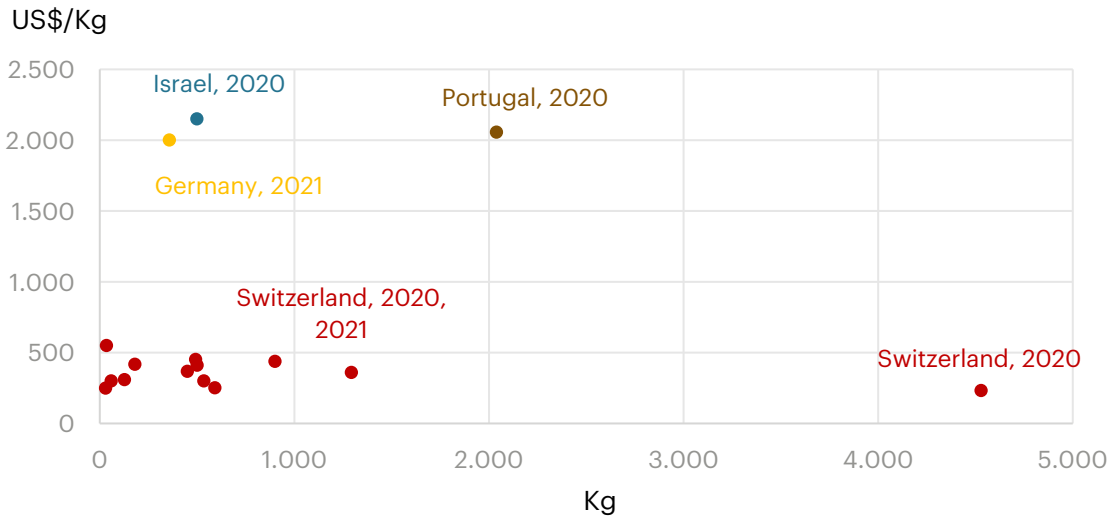
Generally speaking, the main markets have THC limits:

COUNTRY	THC LIMIT
European Union	0,2%
United States	0,3%
Canada	0,3%
Australia	1%
Switzerland	1%
Uruguay	1%

The process of crop adjustment makes it still complex to strictly regulate the content of this cannabinoid in crops, as various factors such as genetics, environmental conditions and management come into play.

Figure N°5 shows cannabis flower export operations between 2020 and 2021. The THC content, the market and the intended use (which requires greater controls on production) largely determine the export price. Thus, higher-priced shipments are to markets with lower THC limits and relevant industrial development, which suggests that these are raw materials for further processing.

GRAPH N°5 - PRICES AND EXPORT VOLUMES BY CANNABIS FLOWERS MARKET - 2020 AND 2021



Source:Uruguay XXI based on National Customs Directorate

While flower exports accounted for 97% of exports between 2019 and 2021, there are also records of exports of other products. In the case of seeds, shipments correspond to seeds for grain and fiber production, and

were destined for the United States. On the other hand, exports of medicines correspond to Epifractan, which was mainly destined for regional markets, such as Brazil and Peru.

TABLE N°3 - URUGUAYAN EXPORTS OF THE CANNABIS SECTOR

		2020				2021			
Product		**Nº Companies**	**Destination**	**FOB US$**	**KG. Neto**	**Nº Companies**	**Destination**	**FOB US$**	**KG. Neto**
MEDICATIONS (Epifractan)	**CBD**	1	Argentina	1.186	1	2	Argentina	2.075	3
			Brazil	67.170	54		Brazil	30.740	26
			Peru	105.641	183				
FLOWERS (Medicinal use)	**THC > 1%**	1	USA	790	1	1	Germany	1.205.896	1.748
			Israel	1.074.052	500		Israel	3.396.928	3.881
			Portugal	4.192.368	2.039		Portugal	854.492	673
FLOWERS (NON MEDICINAL USE)	**THC < 1%**	9	Switzerland	2.015.800	8.434	1	Ecuador	9.415	80
						19	Switzerland	2.569.844	9.591
Seeds		1	USA	28.375	4.880	-	-	-	-
Biomass	**THC < 1%**	-	-	-	-	1	Switzerland	107.000	5.400
Total				**7.485.382**	**16.092**			**8.176.490**	**21.402**

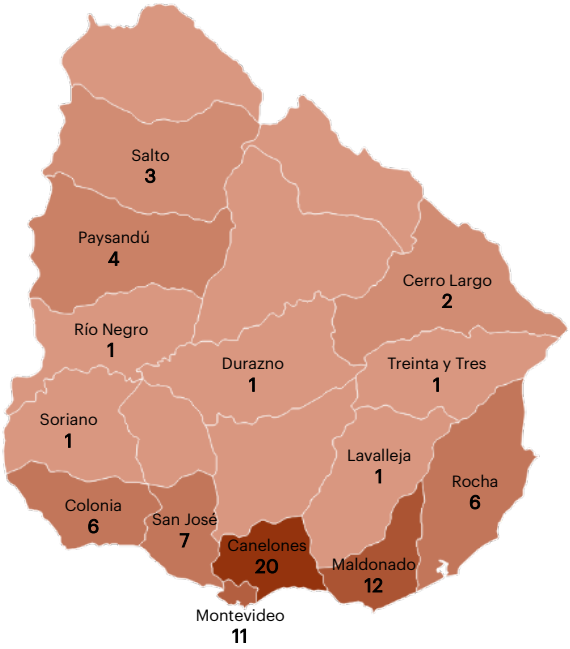
Source: Uruguay XXI with information from Dirección Nacional de Aduanas.

2.4. CULTIVATION

As of August 2021, there are 76 companies growing non-psychoactive cannabis in Uruguay authorized by the MGAP, totaling an area of 456 hectares in the open air. In addition, companies in the sector have 90,000 m2 of indoor cultivation. The yield surveyed is under greenhouses and is around 500 to 1,000 kilos per hectare.

Cannabis cultivation is distributed in different areas of Uruguay, with a presence in 14 of the country's 19 departments. In addition, according to IRCCA data, there are currently 13 licenses for psychoactive cannabis (eight for medicinal use and five for recreational use).

FIGURE N°4 - CULTIVATION LICENSES BY DEPARTMENT[5]



Source: Uruguay XXI based on MGAP and IRCCA.

A first challenge that the crop faces is the learning curve, given that the ban implied a generalized lack of education, both on the arts of the crop and on previous research that would allow the precise determination of planting dates and other crop management practices, which are basically learned as the projects progress. The first years have been, for most of the enterprises, of learning and with modest productive results.

TABLE N°4 - NUMBER OF LICENSES AND AREA BY CROP TYPE

TYPE OF CROP	Nº LICENSES	HEC. OUTDOOR	M² COVERED
Outdoor	41	205	0
Outdoor + covered	28	251	54.389
Covered	7	0	33.562
Grand total	76	456	89.951

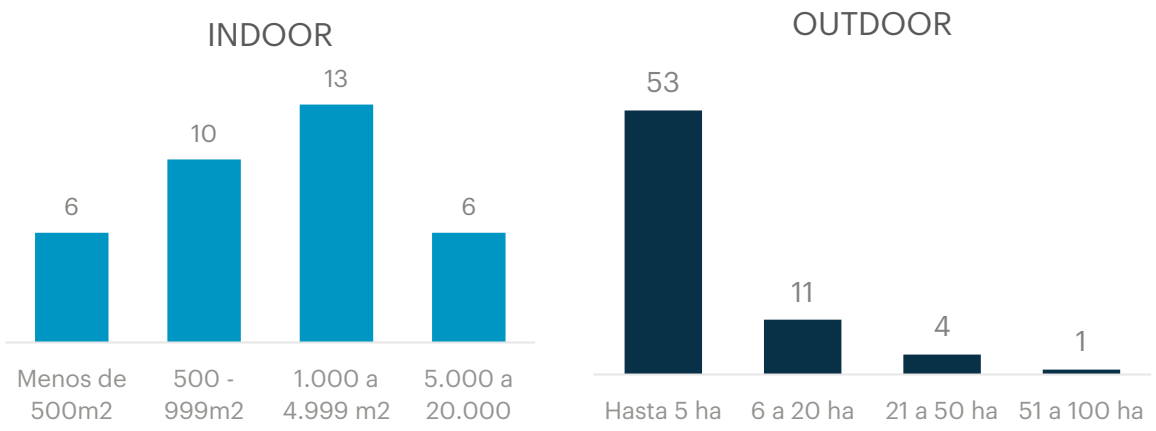
Source: Uruguay XXI based on MGAP and IRCCA *There are additional cultivation licenses with no allocated area as of April 2021.

[5] MGAP licenses and IRCCA licenses for non-recreational cultivation are considered. There was no departmental registration for 9 additional licenses..

The ecosystem of companies participating in the first phase of the chain shows, in the case of open field cultivation, an inversely proportional relationship in the number of companies and the area they occupy. In many cases, these are new companies experimenting for the first time in controlled areas. Only one company manages an area larger than 50 hectares.

Companies that work with controlled environments are, in general, those with greater investment and vertical integration, which require both MGAP and IRCCA approvals, and in some cases, MSP approvals.

GRAPH N°6 - NUMBER OF COMPANIES BY AREA AND BY TYPE OF CROP



Source: Uruguay XXI based on MGAP and IRCCA.

According to MGAP information, 95% of the companies are engaged in the production of unfertilized or fertilized female flowers for export. The remaining companies focus on the production of seeds, grains or grain oil.

Part of the flower production is intended for the production of phenolic resins and/or cannabinoids, i.e. extracts that can end up in purified cannabinoids - typically CBD - or in raw or crude extractions or full spectrum in which all cannabinoids are preserved, with the possible exception of THC.

Production can be carried out under greenhouse with LED or sodium lighting, which allows three or even four harvests per year with a production of approximately two tons per hectare per harvest, i.e. about six tons per year. In these cases, it is common to work with climate-controlled conditions, irrigation, automated fertilization and other controls, which requires a significant initial investment that marks a barrier to entry and usually requires external partners to provide capital and eventually know-how. This has been the predominant business modality in larger ventures.

In addition to open-air and greenhouse production, a third form of cultivation is indoor production, which is rapidly expanding on an international scale for cannabis production.

These possibilities, which go beyond the production of flowers, grains and seeds, will burst forth once a volume of biomass is generated from what can be considered by-products: leaves and stems and even roots. All options require the availability of abundant and affordable raw material, which should emerge as a by-product of the main products in value. Throughout the process there will be feedback with other activities such as tourism and education, in addition to the development of related sectors that support cannabis, such as measurement and analysis services, among others.

2.5. INDUSTRIALIZATION

Industrialization licenses are processed exclusively at the IRCCA. There are currently 19 in force for industrialization and 14 additional licenses under evaluation.

TABLE N°5 - COMPANIES AND INSTITUTIONS LICENSED FOR INDUSTRIALIZATION WITH CANNABIS - AUGUST 2021

COMPANY	PRODUCT TYPE
Burey S.A. / Grune Labs	Raw extract
Caillon & Hamonet SACI	Synthetic CBD.
Calkery Company	Crude extract
Dermagroup	Seed Oil
Di Cianna	Specialty Plant (Herb)
Fotmer Corporation	Crude Extract
Innovaterra	Crude Extract
Lab. Homeoaleman	Mother tincture (phytoextract)
Medic Plast / RAMM Pharma	Medicines
Montjuic	CBD crystals
Mulfay Investment	Seed oil
Plomfin (ICC/Aurora)	Crude extract
Recowen	Crude extract
Solewor	Crude extract
Wemblar Corporation	Full spectrum resin
Yerbatera Celeste	Yerba mate

Source: Prepared by Uruguay XXI based on IRCCA data.

Most of the companies are licensed to obtain crude CBD extract. This is the main export product in terms of medical cannabis worldwide. In Uruguay, extract production also requires authorization from the Ministry of Public Health. The installed and operating capacity for extraction is around 100 kilograms per year.

TABLE N°6 - CANNABIS-BASED MEDICINES REGISTERED IN URUGUAY

NAME	ACTIVE INGREDIENTS	LABORATORY RESPONSIBLE	CONDITIONS OF SALE
Epifractán 2% y 5%	Cannabidiol 20 and 50 mg/mL Oral drops	Medic Plast	On professional prescription - with additional pharmacovigilance
Xalex 10	Cannabidiol 100 mg/mL Oral drops		
Bidiol 3	Cannabidiol 30 mg/mL oral drops	ICC Labs.	
Bidiol 10	cannabidiol 100 mg/mL oral drops		
Xannadiol 5% y 10%	Cannabidiol 50 and 100 mg/mL Oral Drops	Caillon & Hamonet	

At the pharmaceutical level, there are three lines of medicines registered in Uruguay with different presentations and under the responsibility of two companies. All three drugs are based on CBD and are sold under professional prescription with additional pharmacovigilance. Their main therapeutic action is anticonvulsant and they are generally used for the treatment of refractory epilepsy. Their use also extends to other ailments such as Parkinson's disease or osteoarthritis.

On the other hand, there are 14 cosmetic products registered by three companies in the country. The conditions of sale of these products are more lax than in the case of medicines.

TABLE 7 - CANNABIS-BASED COSMETIC PRODUCTS REGISTERED IN URUGUAY

TYPE OF PRODUCT	MEDICPLAST	DERMAGROUP	LAB. HOMEOALEMÁN
LIQUID SOAP	1		
HAIR PRODUCT	2		
BODY CARE PRODUCT	6	2	1
FACE CARE PRODUCT	2		

2.6. RESEARCH

Research is a key activity to enable the development of the sector and to enable new products and processes. Research licenses are held by the IRCCA and there are currently 23 in force.

In addition to private research, the participation of public institutions such as the Universidad de la Republica and agreements with foreign universities has been identified.

TABLE N°8 - CURRENT RESEARCH LICENSES - APRIL 2021

COMPANY	LICENSE OBJECT
Media Lab	Research and development of new psychoactive and non-psychoactive cannabis cultivars.
Hardolin	Research on extraction methodology and purification of cannabinoids from non-psychoactive cannabis.
Flowery Road	Research on nutritional aspects of the cannabis plant.
Recowen	Evaluation of new small-scale cannabis strains.
Innovaterra	Development of non-psychoactive cannabis strains for registration.
Inverell	Development of non-psychoactive cannabis varieties for registration.
K Life Science	Study of cannabis varieties and determination of their bioactive potential.
Germinaruy	Development of a clonal variety of hemp for registration at the National Seed Institute (INASE).
Burey	Development of a process to obtain cannabis extracts for medicinal use.
Dormul	Research license.
FUNDAQUIM	Study of cannabinoids and cannabis extracts.

Source: Prepared by Uruguay XXI based on IRCCA data.

There are records of more than 25 research and development groups in the country whose work has focused on cannabis. The vast majority have addressed medicinal use, ranging from neuroscience to interaction with human metabolism and even specific uses such as dentistry. In addition to medicinal use, groups have focused on genomic research and the agricultural phase of cultivation.

Most of this research comes from academia, with the participation of several faculties of the University of the Republic: Science, Medicine, Chemistry and Veterinary Medicine. Other leading research institutions have also taken part, such as the Clemente Estable Institute, the Pasteur Institute, and the Pando Technological Pole.

3. INSTITUTIONAL FRAMEWORK

The Institute for Regulation and Control of Cannabis (IRCCA) was created by Law No. 19,172 with the purpose of regulating the planting, cultivation, harvesting, production, processing, storage, distribution and dispensation of cannabis. Its purpose is to promote and propose actions aimed at reducing the risks and damages associated with the problematic use of cannabis and to supervise compliance with the provisions contained in the law and this regulation, without prejudice to the constitutional and legal competences attributed to other public bodies and entities. The National Drug Board of the Presidency of the Republic is responsible for establishing the national policy on cannabis, with the advice of the IRCCA.

The Ministry of Public Health is responsible for contributing to the improvement of the health of the inhabitants of the republic, elaborating health promotion and prevention policies, standardizing and regulating the treatment and rehabilitation of the disease, under the guiding principles of universality: equity, quality, solidarity, sustainability and efficiency. Law 19.172 establishes that the MSP is responsible for authorizing and controlling plantations or crops exclusively for scientific research purposes or for the elaboration of therapeutic products for use. Also within its orbit is the Specialized Unit for Evaluation and Monitoring of the policies issued by the law.

The Ministry of Livestock, Agriculture and Fisheries has among its duties to contribute to the permanent development of the agricultural, agro-industrial and fishing sectors, as well as to organize and develop the protection of the health and quality of the production processes of products of plant and animal origin. Law 19,172 establishes that the MGAP must authorize and control the planting or cultivation of cannabis for non-psychoactive use (hemp).

Within the aforementioned portfolio, the General Directorate of Agricultural Services works on the protection and improvement of the phytosanitary status and the quality and safety of plant products in order to contribute

to sustainable development, agricultural trade, preservation of the environment and the health of the population. This executing unit of the MGAP is the official authority, recognized at local and international level, in phytosanitary matters, quality and safety of plant food and animal feed. One of the most transcendental public policy definitions of the last years was the regulation of cannabis, which, among other aspects, includes the development of hemp -cannabis for non-psychoactive use- for industrial and food purposes, from grains, stems, flowers, and leaves. This Directorate oversees the Single Registry of Operators (RUO), where applications for operations and work plans are processed.

The main objective of the National Seed Institute is to promote the production and use of the best seed with proven identity and superior quality, stimulating the development of the national seed industry. At the same time, it supports the procurement and use of new national and foreign phylogenetic materials that are suitable for Uruguayan conditions. Its role also includes the protection of phytogenetic creations and discoveries, granting the corresponding property titles. Regarding the cannabis market, INASE is responsible for the General Register of Seed Growers (RGS), and the National Register of Cultivars (RNC).

The National Secretariat for the Fight against Money Laundering and Financing of Terrorism (SENACLAFT) is in charge of elaborating and submitting to the consideration of the Executive Power, the national policies for the fight against the mentioned objectives. It also proposes to the Executive Branch the national strategy to combat money laundering (ML) and financing of terrorism (FT), based on the development of the preventive, repressive and financial intelligence components of the system. At the same time, it carries out periodic and general diagnoses to identify vulnerabilities and risks, in order to enable the necessary adjustments in terms of objectives, priorities and action plans.

Its participation in the cannabis market consists of investigating and controlling the corporate structures of the companies linked to the sector, the identification of the final beneficiaries and the origin of the funds to be used.

The Technological Laboratory of Uruguay (LATU), is a non-state public law organization created in 1965 to provide services to the production chain. LATU is a national and international reference in innovation, technology transfer and value solutions in analytical services, conformity assessment, metrology, and technological services. It promotes the scientific and entrepreneurial culture, as well as the development of technological platforms.

The Chamber of Medical Cannabis Companies (CECAM) brings together companies linked to the local development of the cannabis market for medical use. The idea of this

alliance is to guarantee the development of the cannabis industry in Uruguay, for which it is essential to have an organized private sector.

The objective of Producann is to strengthen the technical, productive, and commercial capacities of cannabis producers in Uruguay. The association brings together 38 producers from all over Uruguay, representing approximately 50% of cannabis producers in the country.

The mission of the Uruguay Cannabis Network is to create communication and collaboration links between those involved in the value chain of non-psychoactive Cannabis for non-medicinal use in order to develop this industry, watching over the interests and rights of Cannabis Companies. Our vision is to articulate the development and improvement of the productive, logistic and commercial process of non-psychoactive Cannabis for non-medicinal use, generating an efficient value chain with the clear objective of a standardized and validated country brand for domestic trade with recognition for foreign trade.

The Polo Tecnológico de Pando is an institute belonging to the Faculty of Chemistry of the Universidad de la República, which serves as a center for research, development and innovation in the following fields: Chemistry, Biotechnology, Material Science, and Environment. It specializes in the most productive sectors of industry and services in Uruguay.

The Khem incubator focuses on the development of technology-based companies. It is located on the premises of the Pando Technological Pole with 350 m2 of laboratories for the work of the incubating companies. It also has the KhemBIO platform, through which biotechnology ventures can be sponsored.

The Centro Biotecnológico de Investigación e Innovación (CBI+I), together with the Universidad Tecnológica del Uruguay (UTEC) and the Centro de Innovación y Emprendimientos (CIE) of the Universidad ORT Uruguay, are in charge of the CIE BIO incubator, which promotes and executes actions to develop, strengthen and coordinate the biotechnology-based ecosystem, seeking to turn entrepreneurial initiatives into innovative ventures that add value to society..

The National Drug Board is responsible for designing and approving the National Drug Strategy (END) and the respective Operational Action Plan (PAO), establishing the political guidelines for the different areas of drug policy. Through the National Drug Secretariat, it articulates, coordinates and monitors the implementation of the actions defined through the articulation with the different institutions involved in drug policies.

The experimental neuropharmacology department of the Clemente Estable Biological Research Institute focuses on understanding the neurobiological bases associated with neuropsychiatric pathologies such as depression, schizophrenia and addiction to drugs of abuse and the study of the mechanism of action of psychotropic drugs (antidepressants, anxiolytics and antipsychotics). Its aim is to understand the physiology of the systems involved in these pathologies and to find new therapeutic targets that allow the design of more specific and selective pharmacological strategies with fewer side effects. In the search for alternative therapeutic strategies to the existing ones, they are beginning to develop different lines of research, including the medicinal use of cannabis and cannabinoids.

Institut Pasteur de Montevideo, non-profit foundation created in 2004 by the Institut Pasteur in Paris and the University of the Republic. It has highly qualified human resources and modern equipment available to the entire scientific community and life sciences companies. The institute works on integrated projects in biotechnology related to human and animal health sectors, among others. Within this framework, it provides biotechnological services for foreign and national companies, including Biopolis (Spain), Danone (France), Gema Biotech (Argentina), Santa Elena (Uruguay) and Microsules (Uruguay).

These institutes, besides contributing to industry projects, provide specific training and also special equipment and infrastructure to complete them, which otherwise would have to be provided by the company, hindering daily operations. Most of these institutions, as well as free zones with specific platforms, technologies and services for Life Sciences companies (e.g., Zonamerica and Parque de las Ciencias) are concentrated in the metropolitan area of Montevideo, creating a hub of innovation activities.

4. URUGUAY IN BRIEF (2021) [6]

Official name	Oriental Republic of Uruguay
Geographical location	South America, bordered by Argentina and Brazil
Capital City	Montevideo
Area	176,215 sq mts. 95% of its territory is productive land apt for farming exploitation
Population (2021)	3.54 million
Population growth (2021)	0.3% (annual)
GDP per capita (2021)	US$ 16,734
Currency	Uruguayan Peso ($)
Literacy index	0.987
Life expectancy at birth	77.6 years
Form of Government	Democratic republic with presidential system
Political Division	19 provinces or departments
Time Zone	GMT - 03:00
Official Language	Spanish

MAIN ECONOMIC INDICATORS

Indicators	2017	2018	2019	2020	2021	2022*
GDP (Var % per year)	1,63%	0,48%	0,35%	-6,12%	4,37%	5,15%
GDP (US$ Million)	64223	64431	61176	53507	59288	71167
Population (Millions of people)	3,49	3,51	3,52	3,53	3,54	3,55
GDP per Capita (US$)	18385	18377	17387	15154	16734	20019
Unemployment rate – Annual Average (% EAP)	7,9%	8,3%	8,9%	10,4%	9,4%	7,9%
Exchange rate (Pesos per US$, Annual Average)	28,7	30,8	35,3	42,1	43,6	41,6
Exchange rate (Annual Average Variation)	-4,8%	7,3%	14,7%	19,2%	3,6%	-4,5%
Consumer Prices (Var % annually accumulated)	6,6%	8,0%	8,8%	9,4%	8,0%	9,0%
Exports of goods and services (US$ millions)**	16845	17216	17185	13735	19336	22526
Imports of goods and services (US$ millions)**	13367	13964	13499	11364	14903	16989
Commercial Surplus/Deficit (US$ millions)	3478	3252	3687	2371	4433	5537
Commercial Surplus/Deficit (% of GDP)	5,4%	5,0%	6,0%	4,4%	7,5%	7,8%
Overall Fiscal Balance (% of GDP)	-3,2%	-3,9%	-4,4%	-5,8%	-4,1%	-
Gross capital formation (% of GDP)	15,8%	15,0%	14,6%	17,4%	18,4%	-
Gross Debt of Public Sector (% of GDP)	60,5%	59,6%	60,8%	74,6%	71,5%	-
Foreign Direct Investment (US$ millions)***	-590	-11	2018	746	2244	-
Foreign Direct Investment (% of GDP)	-0,9%	0,0%	3,3%	1,4%	3,8%	-

Sources: Central Bank of Uruguay (BCU), National Statistics Institute (INE), Ministry of Economy and Finance (MEF) and estimated data (*). Fiscal result data include the effect of Law N°19590 (cincuentones). In 2017 the BCU adopted the methodology of the 6th balance of payments manual. Data based on this new methodology includes purchase and sale of goods and re-exports and are available since 2012. Data are net flows so they may take negative values (**).

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