



LAUNCHING LEGAL MARIJUANA Regulatory Challenges and Options

an initiative of

**The Washington Office on Latin America (WOLA)
and the Drug Policy Alliance (DPA)**

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Introduction

On October 21-23, 2013, the Washington Office on Latin America (WOLA) and the Drug Policy Alliance (DPA) hosted in Denver, Colorado, the workshop “Launching Legal Marijuana: Regulatory Challenges and Options.”

The overall goal of this workshop was to create a forum to learn from the unfolding experiences in the U.S. states of Colorado and Washington in implementing the legislation recently passed to regulate marijuana, as well as to debate ideas, lessons learned and best practices on this issue. The workshop was attended by delegations from Brazil, Mexico, Canada, the United States, and Uruguay involved in the regulation processes in their respective countries.

What follows is a summary of the meetings and discussions during those days. This document aims at providing an overview of the perspectives shared during the meeting, as well as pointing out the questions and challenges identified by the participants regarding regulation of the marijuana market. Nonetheless, it should be noted that the individual views included in this document do not necessarily represent the general opinion of the meeting’s participants.

Opening session

COLORADO

Barbara Brohl, Executive Director of the Colorado Department of Revenue

Dan Pabon, Assistant Majority Leader, House of Representatives of Colorado
Christian Sederberg, founding member of the Vicente Sederberg law firm

Web page of the Department of Revenue, Marijuana Enforcement Division:
<http://www.colorado.gov/cs/Satellite/Rev-MMJ/CBON/1251581331216>

Drafting the framework for Amendment 64 to regulate the recreational marijuana market took less than a year, from the time the measure was passed in November 2012 until the open call for permit applications in October 2013.

The institution in charge of leading this process is the *Amendment 64 Task Force*, specifically created by the governor for this purpose in December 2012. Even though in Colorado the legalization of marijuana for medicinal use was approved by citizen vote in 2000, the preparation of the implementing regulation for this legislation was very slow. While most of the citizens were in favor of this reform, the political system remained reluctant to move on this issue. Therefore, at the beginning of the process many stakeholders did not have much information on the matter and a quick updating was required.

The *goal* of the task force was to create a document to provide guidance for the political and judicial systems, including: i) Identification of the main legal, political and procedural

bottlenecks for the implementation of the amendment, and provision of alternatives to overcome those problems; ii) Development of a comprehensive legal and regulatory framework associated with a timeline; iii) Consultations with key stakeholders; iv) Review of associated laws and regulations, as well as recommendations for reform.

Regarding the *membership* of the Task Force, one key aspect that stands out is the participation of a wide range of stakeholders, such as academia, civil society organizations, users, businesspeople, growers, policy makers, state officials, etc. In turn, the participation of such diverse stakeholders meant that the work would revolve around developing consensus and flexibility, “aiming not at the best possible results but rather something we could all live with.”

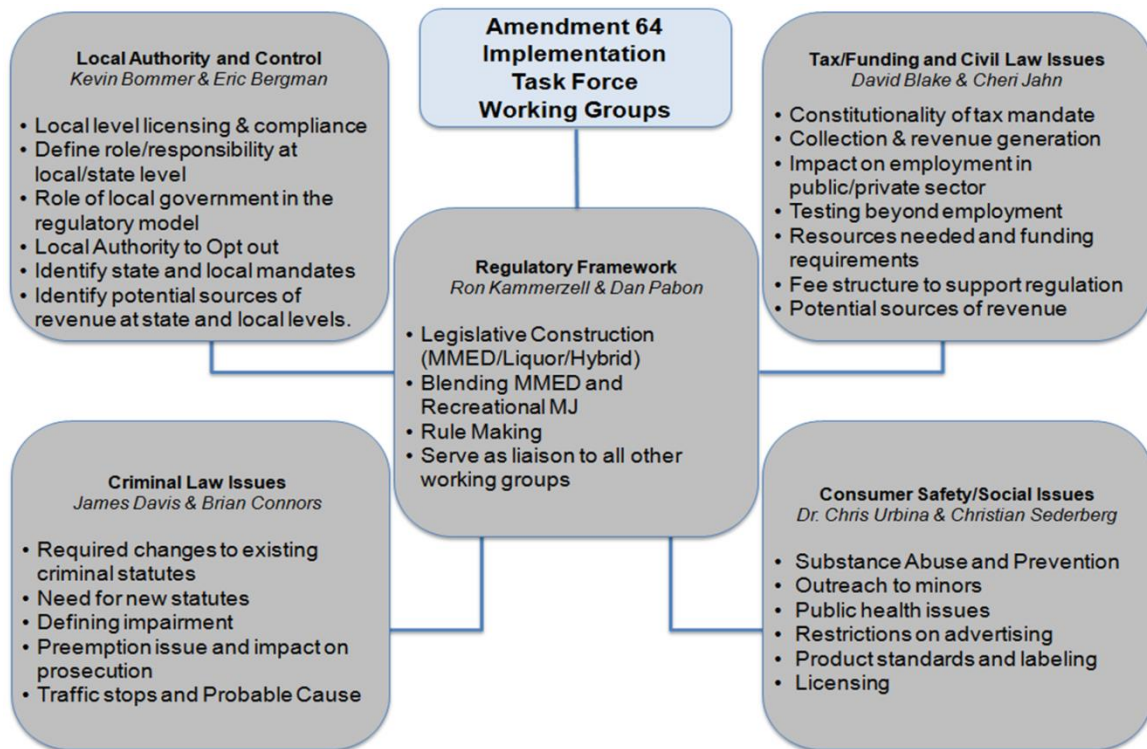
The *structure* of the agency was divided into a board of directors comprised of two people, and five thematic working groups: i) Local authority and control (linked to institutional design); ii) Criminal law issues; iii) Tax/funding and civil law issues; iv) Consumer safety/social issues; v) Regulatory framework.

Between the end on January and the end of February 2013, each working group drafted advisory documents, and four meetings were held to coordinate, discuss and approve the progress reports.

The final document is based on a set of *guiding principles*. It notes that the determination of these principles was very useful for organizing the work, given that each proposal within the regulatory framework had to be explicitly associated with one of these principles:

- Promote the health, safety, and well-being of Colorado’s youth;
- Be responsive to consumer needs and issues;
- Propose efficient and effective regulation that is clear and reasonable and not unduly burdensome;
- Create sufficient and predictable funding mechanisms to support the regulatory and enforcement scheme;
- Create a balanced regulatory scheme that is complementary, not duplicative, and clearly defined between state and local licensing authorities;
- Establish tools that are clear and practical, so that interactions between law enforcement, consumers, and licensees are predictable and understandable;
- Ensure that our streets, schools, and communities remain safe;
- Develop clear and transparent rules and guidance for certain relationships, such as between employers and employees, landlords and tenants, and students and educational institutions;
- Take action that is faithful to the text of Amendment 64.

Structure of the Amendment 64 Task Force

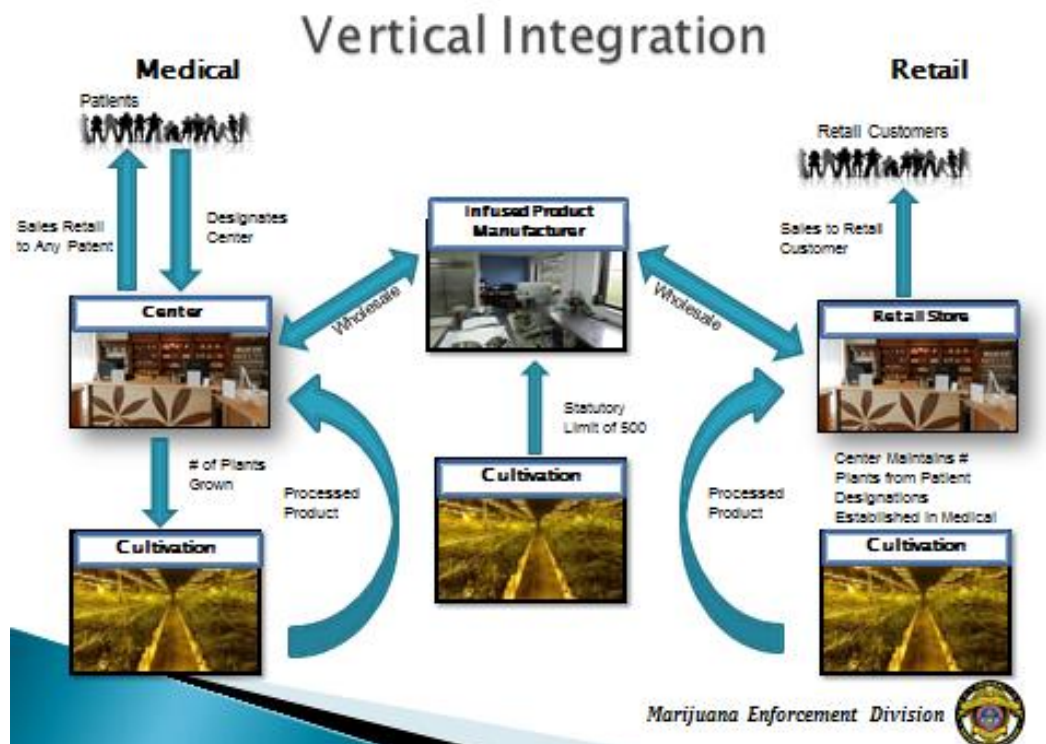


Likewise, provisions were made for each recommendation to include an executive summary that clearly described the connection with the problems identified and the guiding principles, established a priority among issues (fundamental vs. subordinate), identified the agency tasked with its implementation, the associated cost (high, medium or low), established a timeline for implementation and described the cases where an absolute consensus had not been reached during the drafting of the document.

Next, some elements of the system's *contents* were highlighted. Regarding the area of *security*, a key aspect is the tracking system "*from seed to sale.*" This system allows tracing the product at any point in the process of commercialization, all the way to its original source. Registration of users is not included. Among other things, it is important because it allows the identification of contaminants that could harm users, as well as the contaminant's origin, and it makes the visual and computer inventory process much easier (see presentation on this issue on day two). Nonetheless, it is noted that the tracking system, albeit important, is just another component in a wider security system that includes tools such as surveillance cameras and standardized manifests to move the marijuana from one point to the next along the production and commercialization chain. These manifests are posted on the vehicles used to transport legal marijuana, and are considered an important tool to avoid diversion of the substance to the black market, as well as to provide assurance to the staff by identifying which activities are legal and which are not.

For its part, the system for medicinal marijuana (Amendment 20, passed in November 2000) allows the possession of up to 6 plants and the sale of small quantities of marijuana for medicinal use. The regulation of this market was mainly developed since 2009, based on a

vertically integrated commercial system where sales venues must produce at least 70% of the commercialized product. Regulation of marijuana for recreational use will operate parallel to this system.



Regarding *taxes*, the approval of Amendment 64 was complemented with the passage in November 2013 of *Proposal AA*, which created a 15% wholesale tax on marijuana for recreational use, with an additional 10% retail tax. These new taxes are added to the 2.9% state tax and the 3.5% local tax already applicable in Denver. The project also includes the allocation of funds raised specifically to support public schools and treatment programs for people who are dependent of chemical substances. Marijuana sold for medicinal use remains exempted from these taxes.

Moreover, it is noted that the sales *price* is not determined administratively but based on the law of supply and demand. A 75% drop in price has been registered since 2009. On the other hand, the total number of licensed sales venues in the new system will be established based on the number of users who are older than 21 years of age and their geographical distribution.

In conclusion, the next step in the implementation process was the launch a public tender for licenses, anticipated for October 2013. The principles for this stage will be the same that have guided the work on this process all along: thoughtful, predictable and controlled.

WASHINGTON

Rick Garza, Director of the Washington State Liquor Control Board (WSLCB)
Randy Simmons, Deputy Director of the Washington State Liquor Control Board (WSLCB)

Web page of the Liquor Control Board for the implementation of Initiative 502:

<http://www.liq.wa.gov/marijuana/I-502>

The second presentation focused on the process of implementing Initiative 502, with which the citizens of the Washington state allowed the creation of a legal regulatory framework for the cultivation, processing and sale of marijuana to adults 21 years and older.

The presenters highlighted the existence of many similarities with the process carried out in Colorado. For them, maintaining an ongoing relationship and creating opportunities to exchange experiences and lessons learned between both states constitute strategic goals. Like in Colorado, part of the success of the campaign was based on drawing a parallel between regulating marijuana to and the existing regulatory model for alcohol. This move built trust among hard-to-convince audiences, given the tight control that Washington maintains on alcohol, which is considered restrictive, “even conservative.” Nonetheless, it is understood that regulation of marijuana must be a bit more flexible because in this case the initial challenge is to motivate the migration from an established illegal market.

One key element to understand the general logic of this system is that concern for public safety in Washington has been defined as the top priority. Among other things, this approach determined that the institution in charge of the implementation was the Liquor Control Board (from now on, LCB). For the LCB, preparing for such a responsibility also meant a huge challenge because they did not have any major experience in this issue.

LCB’s core *objectives* are: Creating a tightly controlled and regulated marijuana market; including strict controls to prevent diversion, illegal sales, and sales to minors; and providing reasonable to access to products to mitigate the illicit market.

As per LCB’s *role* and *responsibilities*, the presenters mentioned the following: Ensuring public safety as the top priority; creating a three-tier regulatory system for marijuana; creating licenses for producers, processors, and retailers; and collecting and distributing taxes.

In order to operate, LCB maintains a *structure* comprised of 11 teams working on different element of implementation: Licensing; Legal and policy; Education; Enforcement; Communication; Human resources; Collections and audits; Budgeting and distributions; Contracting; Research; and Rules.

BOTEC, a think-tank specializing in crime and drug policies, was hired to provide advice on how to design Washington’s regulatory system. The presenters noted that the support provided by this group was key in technical and strategic terms, due to the legitimacy it lent vis-à-vis the most conservative audiences.

Additionally, it was noted that the successful implementation of the system is due to in large part to the engagement of the community in this process, as well as their understanding and agreement with the norms. Thus, for the drafting of the recommendations, 13 public hearings

were held throughout the state (with the participation of over 6,000 people) as well as meetings with local public officials, community groups, members and associations linked to the industry of medicinal marijuana and law enforcement.

This process for the creation of the regulatory framework took a little less than a year, from December 6, 2012, when the bill became effective, until November 18, 2013, when the first call for bids for license holders was launched. It is expected that between March and April 2014 the first licenses for producers, and for people in charge of processing and selling the substance, will be operational.

As *core elements* of the implementation model, the presenters highlighted the following: on the *demand* side, Initiative 502 decriminalized the possession of up to one ounce (approximately 28 grams) of marijuana to smoke, 16 ounces (448 grams) for consumption in solid form and 72 ounces (2,016 grams) in liquid form. In order to be authorized for possession of marijuana, one must be at least 21 years old, and is not necessary to be registered.

A threshold of 5 nanograms of THC per milliliter of blood was established as the legal limit for operating vehicles. Presenters pointed out a problem with this criterion, since THC stays in the blood much longer after the psychoactive effects of marijuana have disappeared. There is a blood test that can distinguish between both situations (being under the effects of marijuana, and having remnants of THC in one's blood stream) but it takes a few weeks to produce results so eventually a person can be penalized despite the fact that he/she is no longer intoxicated. The University of Washington is currently researching options to improve this control mechanism.

On the *supply* side, unlike Colorado, the state's medicinal marijuana rules were not affected, and therefore there is an explicit effort to avoid vertical integration of the market. This is due to historical issues related to tax collection. Nevertheless, the presenters considered that in terms of security, market integration would be more practical. The system works on the basis of three types of licenses: for *producers*, for the people involved in the *processing* of the concentrate products and infusions, and for the *sellers* working in retail stores exclusively set up for this purpose. One company or person can simultaneously hold licenses for production and processing but not for selling and, vice versa, the people authorized to sell marijuana cannot produce or process the substance.

Based on estimates from BOTECH, a production area of 2 million square feet (equivalent to 18 hectares or 186,000 square meters) was established as a goal; the production from one million square feet would be devoted to consumption via smoking and the production from the other million would be used to make oils and infusions. A development plan was devised to this end and, by the end of the first year, it is expected that up to 25% of the production will be covered. A bidding process for licenses will be conducted through a 30-day timeline. This should allow for a reasonable number of applicants to the licenses but it creates the option for another bidding round if the number falls short.

The regulation establishes *limits* for production, storage and sales venues. Regarding

production, three types of licenses will be provided both for indoor and outdoor venues:

- Tier 1: less than 2,000 square feet (approximately 186 m²)
- Tier 2: 2,000 to 10,000 square feet (approximately 929 m²)
- Tier 3: 10,000 to 30,000 square feet (approximately 2,787 m²)

Regarding *sales venues*, up to 334 retail stores will be allowed to operate, distributed according to population and consumption data.

Regarding the maximum level permitted for *keeping a stock* of the product, outdoor venues and greenhouses are permitted to store up to 125% of the annual harvest, while indoor venues can store the equivalent of six months of annual production. People who process the substance are allowed to store the equivalent of the average quantity of raw materials used during a 6-month period of its total production (final output). At the level of the retail sales venues, the stock allowed is equivalent to four months of inventoried output.

As per criteria for the allocation of *licenses*, in addition to the already mentioned restrictions to vertical integration of the market, one aspect highlighted by the campaign and which resulted in significant difficulties during the implementation phase (especially in small cities) was the requirement that the production and sales venues be located at least 1,000 meters apart.

The requirements to apply for any of the licenses provided are: state residency for at least three months; registration of fingerprints for all applicants; background checks by Washington State Police and the FBI of licensees and financiers.

The cost of the application is \$250, and the fee for annual renewal is \$1,000. Additional fees are charged for running background checks and for the registration of local business licenses for companies. All applicants must submit a signed statement about their tax status.

As in Colorado, the LCB will implement a comprehensive system for tracking the product from the seed or the clone to the sales venue, which allows for identification throughout the chain of production. Additionally, the installation of alarms and surveillance cameras in all licensed venues is required, following established standards about the location of security cameras, quality of the image and use of safety encasing for cameras. There is a strict control and registration system for the distribution of the product, which can only be conducted between the 8 am and 12 am, and cannot be subcontracted by the companies.

A 25% *tax* was determined for the three types of licenses, which is in addition to the *Business and Occupation* (B&O) and sales taxes already applicable. Tax collection will be invested specifically in the health system, as well as in research and education. Thus, the final sale *price* is subjected to the law of supply and demand, although it is indirectly affected by the taxes and the quantity of production that is allowed. A major difference with the prices corresponding to the black market is not expected, but it is anticipated that the product will have much better quality.

On the other hand, certain *restrictions to marketing* were established, such as the prohibition

of advertisement within 1,000 feet of schools, public parks, high-transit areas, pedestrian walkways and other areas where minors are present. Likewise, signs cannot contain statements or illustrations that are false or misleading, promote over-consumption, suggest curative or therapeutic effects, or appeal to children. All advertisements for marijuana or marijuana-infused products must include the following statements:

- “This product has intoxicating effects and may be habit forming.”
- “Marijuana can impair concentration, coordination, and judgment. Do not operate a vehicle or machinery under the influence of this drug.”

The *packaging* must be child-resistant, and there are provisions to limit the amount and concentration of the product per package. Each product must contain information about number of production lot, a warning label, net weight, THC concentration and specific usage warnings for solid or liquid products regarding delays in effects compared to smoked marijuana. To guarantee the *quality standards* that have been established, all the lots must be tested by accredited independent laboratories. For the products that are consumed as infusion, they are allowed up to 100 mg THC per unit.

There also exists a tiered set of penalties for violations that accrue over a 3-year period. For example, in the “public safety” category, the first violation carries a 10-day suspension of the license or a US \$2,500 fine. A second violation carries a 30-day suspension and the third violation results in the cancellation of the license. Allowing minors to frequent a facility is subject to US \$1,000 penalty, and sale of marijuana to minors remains a felony offense.

Finally, the presenters note that the system will be implemented in combination with a campaign on risk and harm reduction, and prevention of consumption, for which an advertising agency has been hired.

URUGUAY

Sebastian Sabini, member of Parliament for the *Frente Amplio*

The bill to regulate the marijuana market, which has been submitted to the Uruguayan parliament for consideration, aims at reducing risks and harm associated not only with the consumption of this substance but also with the war on drug policies.

At the *production* level, legal regulation will allow a better control of the working and exchange conditions in this market, improve the quality of the substances produced and ameliorate the effects of this activity on the environment. Specifically, the bill contemplates three contexts for supply of marijuana: cultivation at home, marijuana social clubs (up to six plants are allowed in each case) and a license for commercial production. The state will have a leading role in organizing the market and controlling profits, which is considered one of the most striking differences regarding models that are being tried in other parts of the world.

Likewise, legal regulation will allow a more efficient use of public resources, guaranteeing a framework for social security and tax collection throughout the chain of production.

At the *distribution* level, the policies of the war on drugs have contributed to a severe humanitarian crisis in many countries around the world due to high levels of violence associated to drug trafficking. Different levels of corruption, money laundering (and investment of this money in unregulated speculative markets), crimes linked to “vendettas” and the collusion of drug trafficking with trafficking of arms and persons, have turned Latin America in one of the most violent regions in the world. Additionally, the prohibition imposed on the marijuana market has contributed to the overload in the justice systems and to a crisis of the penal system, which in turn is heavily biased in relation to the most vulnerable sectors of society.

The Uruguayan proposal includes commercialization through pharmacies, and allowing the possession and purchase of up to 40 grams of marijuana a month. Commercial marketing of marijuana will be banned. Likewise, professional pharmacists will be able to provide information about risks and harm caused by this substance, and issue warnings about incompatible use of the substance, as in the case of pregnant women and psychiatric cases.

Finally, at the level of *consumption*, legal regulation will separate the marijuana market from other drug markets, reducing the exposure of users to the supply of substances with a higher toxicity. Regulation will guarantee safe access to marijuana with controlled quality and toxicity. The system also aims at fostering scientific research on the substance—which is limited throughout the world and virtually inexistent in Uruguay—and its recreational, medicinal and industrial use. Regulation will provide for more information on this substance, as it requires the educational system to include this issue in the official curricula at different levels. In this way, “prevailing myths, both about the benefits and harms associated with the use of marijuana, will be tackled.” Regulation will help fight the stigma imposed on the users of marijuana and, therefore, foster their inclusion in the health care system as needed.

In order to access the legal marijuana market, users must be at least 18 years of age and residents in the country; and, they should previously sign up in a state-run registry. Their data will be protected by the *habeas data* law. Additionally, the law defines a framework to control consumption which will prohibit smoking marijuana in closed public places, as well as driving vehicles and operating machinery under the effects of this substance.

Penalties (to be determined in the corresponding by-laws) will be applicable to the production, distribution and consumption of marijuana without a proper license or disregarding established norms.

In conclusion, the idea with the proposed law is to provide better tools for public policies to make a more effective and efficient use of the resources, and to reduce risks and harm of an already existing drug market. Paraphrasing Bacon, “He who will not apply new remedies must expect new evils; for time is the greatest innovator.”

MEXICO

Jorge Hernandez, President of the Consortium for Comprehensive Drug Policy (CuPIHD)

The marijuana market, as well as the markets for other illegal drugs in Mexico, are considered stable and mature, albeit growing. Polls show that in average users are familiar with 6 to 9 different supply sources, which reflects the relative ease of their access to illegal substances in a country at war against drugs.

One critical issue within the current legal framework lies in the fact that both possession and cultivation of marijuana are not considered as activities linked to consumption but to sales. This leaves users in a very compromised situation and determines that, strangely enough, harsher sentences are applied to growers for self-consumption than for purchasing drugs.

One important political aspect in this country is the margin of action for possible reforms. The law against small-scale drug trafficking proposed by Felipe Calderon and passed by the Congress in 2009, even though it redistributes to local authorities certain autonomy regarding the application of drug policies, maintains the predominance of the federal government regarding the determination of such policies, which imposes a considerable obstacle for the development of significant reforms at the state level.

At the level of social debate, this is considered to be a crucial time in relation to important changes in the public perception of the issues at stake, a perception that is highly influenced by the changes that the United States is experiencing directly on these very issues. "There is a growing awareness of the need to do something." The debate, however, is expanding in a disorderly manner. For example, there are not clear and simple definitions about what market regulation means and what it doesn't mean, and which are its goals and objectives, etc. It is particularly crucial to continue making efforts to avoid common fears among the population, which result from associating the regulation of marijuana with deregulation and encouragement of its use.

Regarding arguments that could be developed, the public debate has yet to focus on the advantages of having separate markets for marijuana and for other drugs, diversion of police resources toward truly violent crimes, human rights issues, protection of the rights of minority sectors of the population, and improved effects of policies on risk and harm reduction.

Lastly, it is noted that draft legislations currently being debated are more focused on the regulation of medicinal use and private grow (either homegrown or developing users' clubs, as it is being done in Spain). These proposals try to avoid a regulatory system that includes commercialization for profit.

CANADA

Donald McPherson, Executive Director of the Canadian Drug Policy Coalition

Historically, Canada has been considered a relatively progressive country with respect to drug policies. Particularly, Canada was one of the pioneer nations in introducing comprehensive risk and harm reduction policies, as well as early initiatives about medicinal use of marijuana. Ten years ago, one user of medicinal marijuana took his case to the Supreme Court and demanded his right to grow marijuana for his own -consumption as a way to preserve his health. Even though the tribunal sided with him, the Canadian government has been reluctant to implement a regulated model. This situation gave way to the development of a robust system of “compassionate clubs,” which involve a high level of engagement among users to organize activities for self-provision of marijuana. In the last few years, this market has opened its doors to the business sector and, since then, there has been a clear trend toward privatization of this activity.

It seems that the current political context is not favorable to reforms, given that the federal government is “strongly glued to the *status quo*.” Nevertheless, there is hope that in the near future there will be opportunities to pursue reforms and, in this endeavor, the strides that have already been made regarding medicinal use of marijuana will be particularly useful.

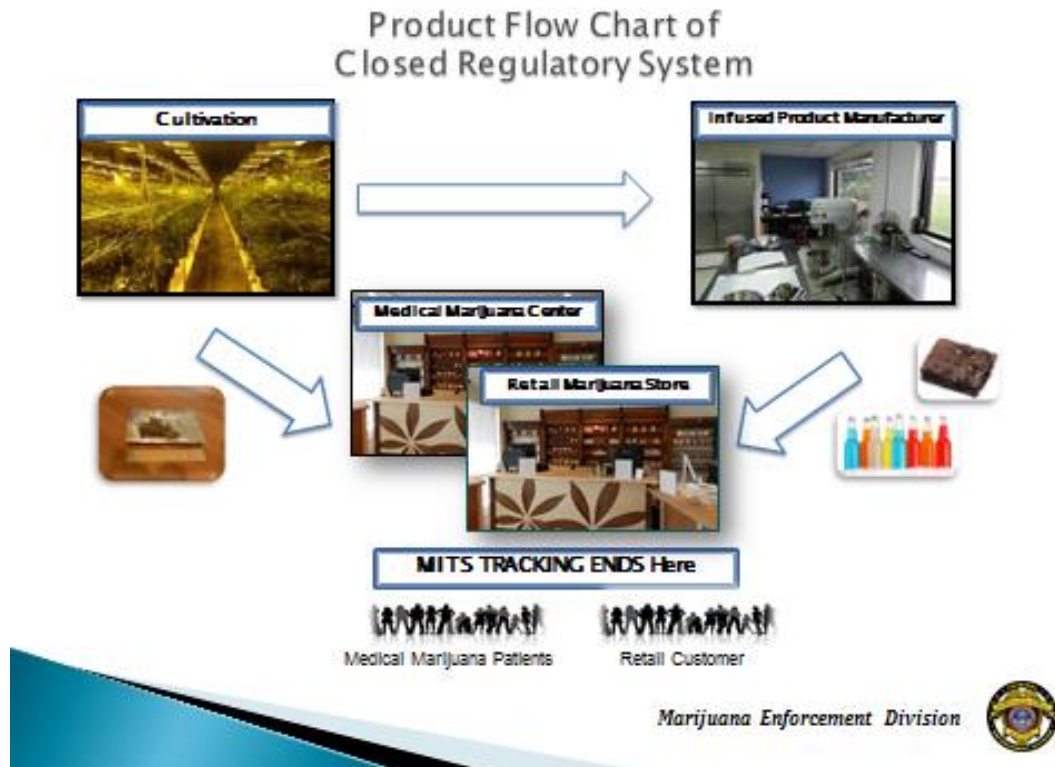
Therefore, it was considered that “Canada presents two very different faces.” On one hand, public opinion polls show that 57% of the population supports regulation of marijuana, and 65% favors decriminalization. Likewise, there is currently an ongoing effort to hold a referendum to eliminate police harassment against personal use of marijuana. On the other hand, the political system has been introducing measures to set harsh minimum sentences for cultivation and possession of marijuana.

Even though drug legislation is determined at the federal level, the provinces and the local state agencies have autonomy regarding the mode and intensity of the application of the law, which leaves them considerable leeway that is utilized in many different ways throughout the country.

Presentation by the Marijuana Enforcement Division

Ron Kammerzell, Deputy Senior Director of Enforcement
Lewis Koski, Chief of Investigations

The first presentation of the second day of the workshop was focused on the Marijuana Inventory Tracking Solution (MITS) used in Colorado which, as was mentioned before, is a key component of the security measures of the model. This system allows tracking the plant virtually “*from seed to sale*,” and allows the identification, at any point during the process, of the origin of the product. The record ends once the product arrives to the consumer. Likewise, the whole control system has been exclusively designed for the commercial market and not for home cultivation for one’s own consumption.



A bidding process was launched in late 2011, calling for companies to present inventory tracking systems. The bid was won by Franwell,¹ which specializes in technological services and products for productive chains. After a few delays due to budget problems, the system had advanced to the pre-test stage (while the workshop was taking place).

The key component in the system is the “tag commissioning.” Each tag is associated with a single plant and license holder, and it is placed at the base of the stem. Using a radio frequency, the software can monitor from a remote location the number of plants in a given location and identify the plants whose tags still have not been registered in the system. The price of each tag reader runs between \$200 and \$500.



¹ <http://www.franwell.com/home>

MITS has two interfaces, one to be used by state agencies and another one for the license holders. Each of the interfaces has different components and restrictions. The goal is to use a unified information and tracking system where the license holder can directly upload the data corresponding to their production; number of employees, features of the plant (percentage and type of THC), weight (wet and dry) at harvest, number of license holder, etc. Also registered are each move of the plants in their different stages of development (if they are in the vegetative, flowering, or drying cycles, etc.) and between the different locations (cultivation, processing and sale venues). This will provide, among other things, information about the total number of plants in their different stages of cultivation at all times, and the preparation of analytical reports of the status of production, which provides foresight, control and transparency to the market.

Transfers

License : Medina Health Center OPC B OPC-40312346

Transfers Transfer History Receive Transfer Create Transfer

Incoming :

Print	Manifest #	Transfer Date	Transfer type	Origination	Destination	# Items	Employee	Status
	40312345-1376265600-a000001	08/11/2013	WHLSL	Medina Health Center OPC A	Medina Health Center OPC B	1	Diederik Medina	Pending

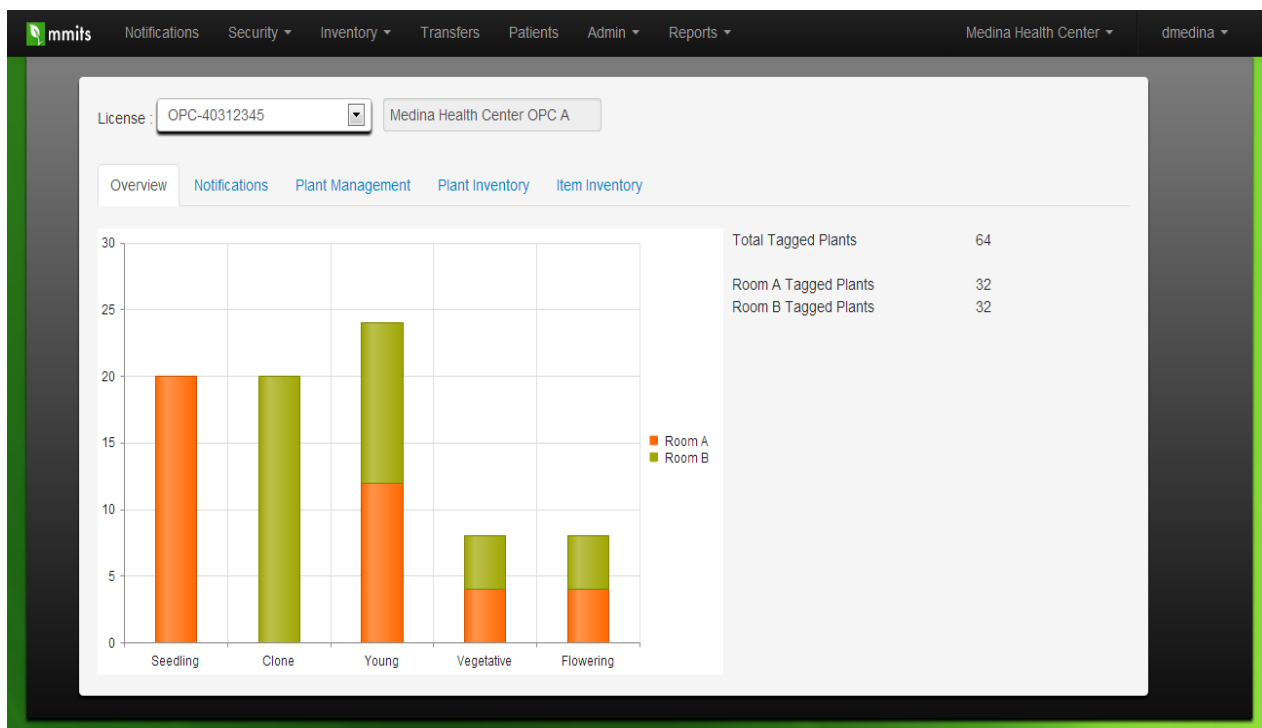
10 items per page
1 - 1 of 1 items

Outgoing :

Cancel transfers

Print	Manifest #	Transfer Date	Transfer type	Origination	Destination	# Stops	# Items	Employee	Status
Information not found									

10 items per page
No items to display



In order to implement the system, training workshops will be conducted; and the software was designed for the users to have simple and friendly access to the information. The system also allows certain personalization by creating different “files.” For example, venues that have different inflorescence spaces can register separately the data corresponding to each of them. It is also noted that initially the whole tracking system was much more basic and less technology-based (“*pen and paper based*”) and it has been improved as the industry developed.

In addition, the legislation approved calls for the creation of control laboratories for the certification of the products. These labs will test the use of pesticides and chemical products during the cultivation process, the level of THC contained in the product, etc. Initially, the testing will be voluntary but it is expected that in time it will be mandatory.

On-site monitoring is carried out randomly, based on a risk scale according to performance in previous visits, reports from users or other stakeholders within the system, time elapsed since the last visit, etc. The Marijuana Enforcement Division currently has a staff of 29 people and works in close coordination with law enforcement agencies. When an infraction is identified, there is a set of administrative measures that go from fines up to an eventual cancellation of the license, depending on the seriousness and repetition of the infraction.

Finally, it is anticipated that MITS, in combination with the other security tools (video surveillance, monitoring visits, quality control, tax records), will help reduce diversions to illegal markets, improve security and health of consumers, and aid in efficient tax collection, which currently reaches \$20 million per year.

Presentation by the Department of Public Health and the Environment in Colorado

Ann Hause, Director, Legal and Regulatory Affairs
Ron Hyman, Director, Vital Statistics and Medical Marijuana Registry

Representatives from the Department of Public Health and Environment gave the second presentation on the implementation model. This agency is already dealing with some regulatory aspects of the system for medicinal marijuana, and could also participate in a series of aspects required by the new regulatory framework for recreational use. Specifically:

It can work jointly with the private sector in the development of quality standards and good production practices. Second, it can participate in the preparation of educational materials about marijuana use, as well as in the preparation of prevention campaigns for people younger than 21 years of age. Third, it can collaborate with other agencies by providing data coming from eventual emergency consultations related to marijuana use and the toxicology center. Fourth, it will participate in the implementation of the ban on marijuana smoking in closed public spaces, similar to the current ban on tobacco smoking.

In addition, the regulatory framework specifically entrusts this Department with the following roles:

- Monitoring changes in marijuana use patterns, breaking them down by geographic area, race and ethnicity, and centralizing the emerging scientific and medical data linked to effects of marijuana use on health.
- Convening a team of health professionals with expertise in the physiology of cannabinoids; these professionals will monitor all relevant information regarding these issues. This team must draft its first report by January 31, 2015, and every two years after that.
- Establishing criteria to determine: i) which studies to highlight; and ii) conduct a review of such studies and other pertinent information.
- Making recommendations, when appropriate and working with allocated funds, to draft policies for the protection of marijuana users and the general public.

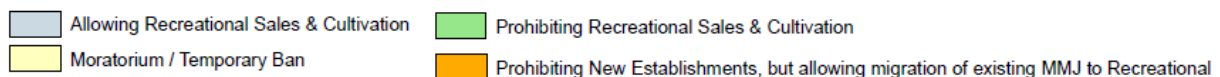
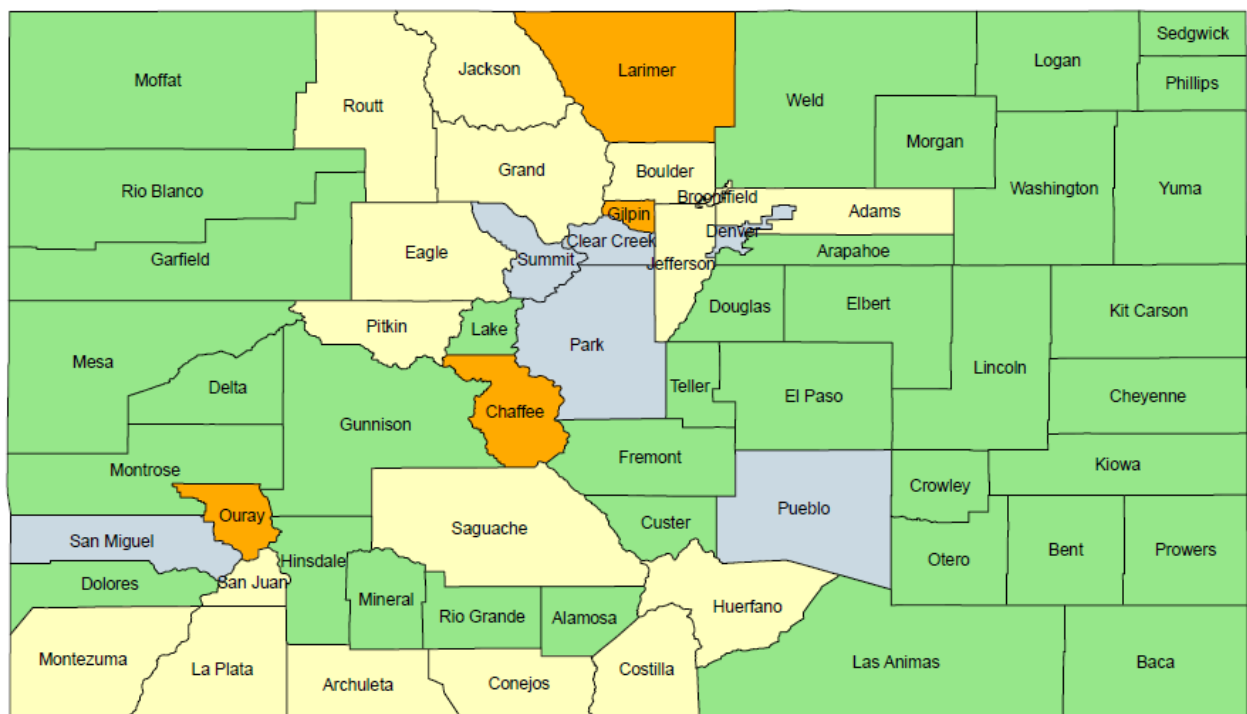
There is also the possibility of requesting data from hospitals and data bases in Colorado, such as the All Payer Claims Database (APCD), that contain details of medical, pharmaceutical and dental consultations conducted, about adverse effects on health related to marijuana use and risk factors.

With regard to marijuana for *medicinal use*, the Department of Health and Environment is already covering the management aspect of registration of medicinal marijuana and monitoring the development of this market, as it was mentioned earlier. To illustrate this latter role, the presenters explained that in the fall of 2013 the Department received reports of an unusually high number of emergency consultations (many of which subsequently required

hospitalization) linked to the use of synthetic marijuana, mainly in the areas of Denver and Colorado Springs. Based on this new trend, a study was conducted to identify the origin of the problem, and thus it was possible to prevent the potential emergence of a new version of the drug. This same kind of test to identify contaminated products can be conducted for recreational drugs.

Finally, it was noted that *Amendment 64* provides local autonomy to allow or ban the commercialization of recreational marijuana. Currently, what has been observed is: i) some areas have decided to maintain an embargo on the authorization for sales—at least until the new regulatory framework has been determined, by late 2013; ii) many of the counties have maintained the ban on cultivation and sales; iii) 6 counties have allowed it.

County Regulatory Status - Recreational Marijuana



Created by Trent Pingenot for CCI

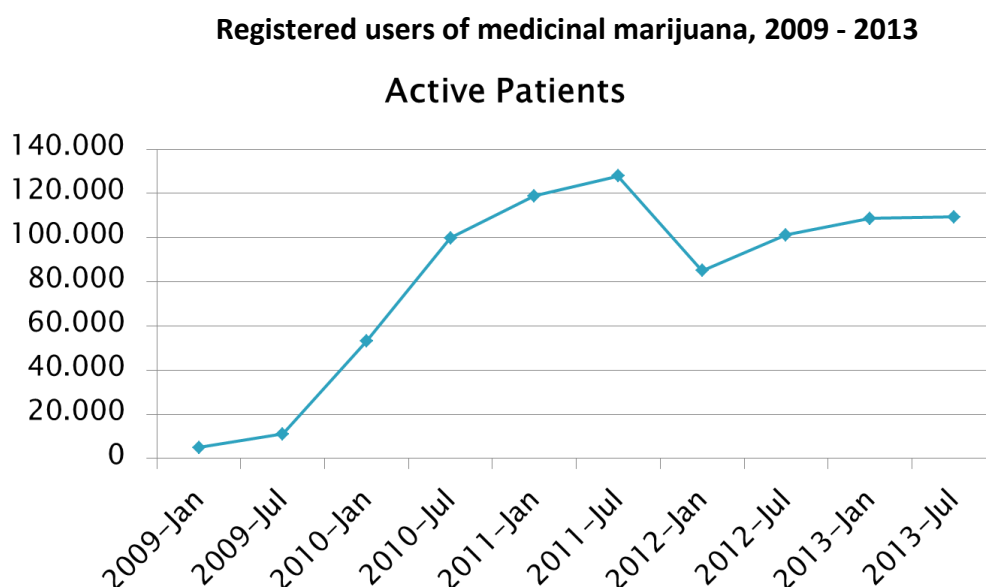
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Map Revision: October 1, 2013

The second part of the presentation was focused on the records and patterns of medicinal marijuana use in Colorado. As was mentioned earlier, this legislation (*Amendment 20*) was approved by popular vote in November 2000. A registrar system for users of medicinal marijuana was established in July 2001. It was noted that users of medicinal marijuana are not forced to register, since they can resort to growing their own plants at home or going to sales venues that do not require registration. Underreporting, however, is not considered to be significantly high because registration “makes your life easier”—it facilitates access to the

substance, does not translate into extra costs for users, and provides a higher level of protection to users vis-à-vis the authorities in the event of legal prosecution.

The number of active users remained very low until 2009. A surge started that year, and it reached its peak in 2011. The number of registered users since then has remained quite stable around 110,000 patients.



Regarding reasons for registration, there are eight types of diagnostics that can merit medicinal use of marijuana. The wide majority of users are concentrated in the category of “severe pain” (94%), followed by “spasms” (14%) and “severe nausea” (10%). Generally, the average age of registered patients is 42 years. Sixty-seven percent of the patients are male (with an average age of 41) and 33% are women (average age is 44 years).

To request authorization to become a medicinal marijuana user, the individual must fill out an application form, provide a medical certificate issued by a doctor, proof of residency and a valid ID, and pay a registration fee of \$35. The license must be renewed every year. To apply for a license on behalf of underage persons, one must additionally provide a recommendation issued by a second physician and an authorization signed by two legal guardians.

Conditions registered by late August, 2013²

▶ Severe Pain	▶ 102,701 – 94%
▶ Muscle Spasms	▶ 15,364 – 14%
▶ Severe Nausea	▶ 11,221 – 10%
▶ Cancer	▶ 2,990 – 3%
▶ Seizures	▶ 1,882 – 2%
▶ Cachexia	▶ 1,172 – 1%
▶ Glaucoma	▶ 1,108 – 1%
▶ HIV/AIDS	▶ 664 – 1%

Regarding the processing time for the application, an application can be processed in 25 days. A request for the renewal of a lost license takes 23 days, a change in the status of the patient is processed in 23 days and a request of verification by the judicial authorities can be done electronically in “real time” or within 24 hours via fax.

Finally, it was noted that the authorization of marijuana for recreational use is not expected to result in a significant decrease of users of medicinal marijuana, mainly due to three reasons: First, *price*; recreational use carries a 25% additional tax while medicinal use is exempted from this tax. Second, *age*; recreational use is exclusively allowed for people older than 21 years of age, while medicinal use is allowed at any age (with the previously mentioned applicable restrictions). Third, *amount*; if the treating physician deems it necessary, an exception can be requested to purchase an amount higher than the established standard.

Discussion of issues related to prevention of marijuana use among youth

Kelly Perez, Policy Advisor, Office of the Governor

The next presentation was focused on the discussion of some key aspects for drafting policies and prevention campaigns linked to the use of marijuana among youth.

The presenter noted that historically Colorado has been characterized for showing high rates of marijuana use and abuse, and there is currently a growing concern about the lack of an adequate awareness about potential risks and harm associated with marijuana consumption. Two reasons were offered for this: First, U.S. drug policies have traditionally been more focused on the supply side than on demand. This is reflected, for example, in a significant bias against public funds budget for educational or health campaigns aimed at drug users. Second, the few campaigns that have been conducted have traditionally been based on discouraging consumption by stressing and inflating its negative consequences in ways that are rather unlikely to be believed by the target population of the campaigns.

² Patients reporting more than one condition are counted more than once, so added percentages are over 100%.

On the contrary, the initial point is that “the world will not collapse” because people use marijuana. The general goal should be to facilitate access to relevant and honest information that helps people make responsible decisions, and to provide adult people better tools to talk about this issue.

One key point for this effort is to research the media contents that are perceived as credible among youth. For example, there are ethnographic studies currently being conducted with different age groups to unveil this kind of data.

Additionally, the presenter noted the importance of assessing not only changes in perceptions but also the effects of such changes on behaviors, which is the ultimate goal of these campaigns. By the end of the session, the presenter proposed to discuss the relevance of information not only from the perspective of the negative consequences of marijuana use, but also with consideration of its possible positive effects.

Discussion on the visits to dispensaries and cultivation facilities



The workshop included a series of visits to medical marijuana dispensaries and cultivation facilities located both indoors and in greenhouses.

With regard to the production cycle for marijuana, the right time to start growing in Colorado is spring when the daylight hours are longer, low temperatures reach a minimum level of 15° C, and there are no night frosts. Nevertheless, it is possible to grow marijuana during the winter

when the necessary tools to adapt to the low temperature are provided, and when the plants receive enough hours of artificial light for the photosynthesis to occur. Under these conditions, up to six crops per year can be achieved.

Marijuana requires a minimum of 6 to 9 hours of direct sunlight to grow successfully, in addition to a similar number of hours of light to reach a minimum of 16 to 18 hours of light a day. It is worth mentioning that the growth of the plant increases proportionately to the number of hours of direct exposure to the sun. When the plant is not exposed to a minimum of 16 hours of photosynthesis per day during its vegetative growth, there will be a decrease in its development and the plant will produce flowers ahead of time.

The florescence stage is the time when the buds are formed. During this stage, the plant needs 8 to 9 hours of direct sunlight, reaching a total of 12 hours of exposure to light. In average, a photosynthesis period of 12 hours of light followed by 12 hours of darkness, guarantees the release of the “florigen” hormone which triggers the florescence of the plant.

A total to 1,000 licenses have been issued in Colorado for the production of medicinal marijuana, which makes it the most competitive market in the world.

One of the companies visited in Denver is currently the company with the biggest share of the market. It has 7 associated sales venues, a staff of 150-200 employees and provides between 20% and 25% of the marijuana output for medicinal use in this state, corresponding to 110,000 patients. In the future, this company aspires to increase its production to also integrate the recreational market. They run a highly technological and intensive system, generating an artificial environment that allows them to create the humidity, heat and light conditions to speed up the growth of the crops.

Essentially, the system is composed of 6 stages:

Stage 1-chamber with mother plants: Mother plants are those from which the buds for production are obtained. They are kept in an isolated room with light 24 hours a day.

Stage 2-production of scions: About 20% percent of the 1-month old scions die. Even though the tracking system described before is conducted from this stage, given this high mortality rate it has been suggested that the tracking system be initiated later in the growth process.

Stage 3-growth: This stage takes a total of 3 months, during which: a) during one month the plant is placed in a 4-inch pot, under a 400w of light. This is where the tags are attached to track the plant. b) The following month the plant is moved to a pot that contains one or two sticks, also under 400w of light. c) During the last month of this stage, plants are placed under the light 24 hours a day to keep them at a vegetative state, so they continue to grow and to avoid florescence.

Stage 4-florescence: Depending on the species, the plants go through this stage during a period of 48 to 80 days. When the leaves wither, the plant is ready to be harvested. During this stage

the plants require exposure to 12 hours of light and 12 hours of darkness. During this period, the light used is 1,000w.

Stage 5-harvest: During the harvest stage the initial classification and cutting of the biggest buds, which are the ones with the highest value in the market, is done by hand. The “cutters” receive an average salary of \$10 per hour of work, while the minimum wage is currently \$7.78. Lower quality buds are removed from the leaves with a machine, and each cutting machine costs approximately \$30,000. Both the stocks and the leaves are taken to the kitchen to be used in the preparation of by-products and derivatives (oils, etc.).

Stage 6-drying: It takes between 7 and 10 days. Special attention must be paid to humidity. The area for drying the product must be tightly closed and utilize green light to avoid affecting the color of the product.

The plants grown by this company have between 18% and 25% of THC.

The agricultural method utilized in this production process is hydroponic cultivation. Tables with a capacity to hold 400 plants are built with coconut-base sediment and they are fed with nutrients dissolved in water. Each table needs approximately 50 sodium lamps to allow the efficient growth of the crops (each lamp allows the development of 7-8 plants). The yield obtained from each sodium lamp is equivalent to 0.7 kg of marijuana. Each of these tables required an initial investment of \$250,000. They are starting to try and use LED lighting, which allows energy savings of 20%. The color of the light, however, creates differences in the development of the plants that need to be analyzed.

The yielding obtained with this method oscillates between 80 to 100 grams per plant. The company has approximately 35,000 plants with 4 harvests per year, which correspond to 3,000 kg per harvest and 12,000 kg per year.

The current cost of production is \$1 per gram and the final sale price is \$4 (which is estimated as one-third lower than the price when the product is illegally obtained).

Finally, regarding security aspects, there is a significant number of surveillance cameras distributed throughout the different venues. Additionally, the staff members allowed to enter the drying chambers (where the product is ready to be consumed) are considered reliable.

Another company that was visited is an example of small-scale production, reaching 2.5 tones per year. They use the hydroponic cultivation method both indoors and in greenhouses, depending on the type of plant and its specific needs. All crops are organic, which involves a cost of production 30% higher than non-organic crops. Initial investment was \$3 million, of which \$400,000 corresponded to security measures (with \$250,000 being used to buy and install 84 surveillance cameras). They currently employ 85 people.

This company offers by-products such as oil with CBD (used as a sedative), pills, creams (without psychoactive effects), transdermal patches, mineral salts and edible products

(extracts, tea). When the company started operating, the flowers represented 80% of their sales and the by-products were 20%; now the ratio is 60%-40%.

Production is split in modules according to the cycle of the plant and administered so as to maintain an ongoing yielding of the product. The scion stage lasts 14 days. The vegetative cycle takes 30 days, during which plants are exposed to a blue light 24 hours a day. The florescence period takes 60 days and plants are exposed to an orange light. The drying period takes between 8 and 9 days. The whole process takes a total of 110 to 120 days, and it allows for up to 6 harvests per year. The company has 5 marijuana production chambers and a total of 4,400 plants, from which they obtain 37 kg of marijuana per module. They are also experimenting with cultivation in greenhouses. According to their calculations, production indoors has a cost 40% higher than cultivation outdoors.

Lastly, another of the companies visited also has an exclusively organic production of plants with a 13% to 28% THC level. They have a production cost with electricity of about \$15,000 a month. Initial investment in the security system was about \$100,000. They produce approximately 27 kg per week, which translates into a return of \$1.5 million per year. The company employs 41 people. In the last three years they have received 4 monitoring visits by the state authorities.

After the visits to sales and cultivation venues, there was a “round of impressions.”

- There is no need to reinvent the wheel. The venues visited are an example of the existence of a very robust market that has been developed, and we must take advantage as much as possible of the lessons learned.
- Witnessing the level of development of these efforts also resulted in a feeling of frustration when considering the blatant paradox of, on one hand, U.S. foreign policies that staunchly defend the “war on drugs” and, on the other hand, the expansion of a highly beneficial domestic market. The war on drugs is a policy fundamentally sustained on moral grounds. Being able to see this prosperous market increases the feeling that the reform of the policies around marijuana cannot be stopped, and that we are approaching a *tipping point*.
- Particularly in the context of a country which is still recovering from an economic crisis, the dimensions of the industry, its profit levels, the number of jobs created and the technology implemented are quite impressive. Also impressive is the sophistication of the business model, for example, which is clearly organized in departments. The accuracy, scrupulousness, control and safety of the processes also stand out. There is a high level of professionalism, paired with significant financial investments. When looking for regulation mechanisms for this market, politicians must act with responsibility about determining the working standards.
- For countries from the southern hemisphere, the biggest challenge lies in guaranteeing that the profits resulting from the production are reinvested locally and do not end up exclusively in the hands of foreign investors as it has happened with many other markets. Likewise, there is the challenge about how to redirect these efforts toward social

development and not only aim at creating profits for private players. In Uruguay there is an emphasis on the notion that the core principles must be security, health and human rights.

- When talking to the workers in this industry, one gets the impression that the working environment is quite relaxed and employees are highly motivated. However, it is also noted that the objective working conditions did not seem to be ideal (regarding, for example, occupational health, air quality, salaries, etc.).
- There is a primal reaction to the absurdity of waging such a deleterious war (involving massive incarceration, violence, etc.) against a plant that looks like many others.
- Just as the unchallenged adoption of prohibition policies fostered by the United States has not been positive for the rest of the world, following these new models will not necessarily be easy. Reforming drug policies was always been about innovation, and it is good that the regulatory models can now also follow this road and not be limited to copy other people's recipes.

Evaluation and Conclusions

The workshop ended with a round of reflections by the different participating delegations.

Mexican delegation: Hats off to Uruguay for their resolve and enthusiasm for paving the way on marijuana market regulation in Latin America. Little by little, different governments are recognizing that this is an important issue and that we need to update our policies about it. Proof of this is the openness, diversity and high profile of the Mexican delegation here.

Colorado business sector: The business sector highlights the appreciation and joy of being able to share their real work, day-to-day experiences at the dispensaries and cultivation facilities. For a long time, they tried to keep a low profile out of fear of being subjected to legal prosecution; the idea was, "don't call attention on yourself, and try and keep your head above water. It is very comforting to learn that we are not alone in the effort of blazing a new trail."

Likewise, the delegations from different countries are especially thankful for the openness and transparency showed by the companies that opened their doors to them. It was noted that this approach is not only unusual in the business sector in general, but it also runs against the grain of the logic of the war on drugs, characterized by its lack of transparency and secrecy. Learning about experiences in Denver and Colorado, and knowing about the existence of a sustainable medicinal and recreational marijuana market which operates in a serious, orderly and responsible manner, is quite useful for drug policy reform efforts.

On the other hand, reflections were also shared about which aspects of this model are transferable to other contexts, and which are not. There will be some very useful tools that may be utilized, and there will also be other aspects, more intimately linked to values and deeper perspectives, which will be specific to different cultures. An example of this in Uruguay is the role of the State in the market, the rules of the game and the strategy of restricting the

marketing of marijuana. Another significant challenge will be to work for the inclusion of the different actors in this process (entrepreneurs, growers, users, and the justice, education and health sectors, etc.), developing relationships of cooperation and not competition or distrust.

Also noted was the importance of fostering a sense of community, with everyone sharing experiences from their different perspectives while knowing that they share the same goals, such as preventing diversion of the substance, as well as improving citizen health and public security, etc. It is important to develop, whenever it is relevant and feasible, these opportunities for exchanging agreements and common tools. One example mentioned was the scientific research protocols for medicinal use of marijuana. Likewise, the importance of gathering information from the different perspectives aimed at the common goal of developing a *new deal* regarding international drug policies. Usually “the field of international drug policies and reform is very inhospitable and lonely. Being able to feel the communion and support regarding these efforts is crucial.”