



# Cannabis: How Can We Take Back Control?

Les notes du conseil d'analyse économique, no 52, June 2019

**D**espite having one of the most repressive policies in Europe, the French, and particularly minors, rank among the largest consumers of cannabis in the European Union. The prohibition policy promoted by France over the last fifty years has been a failure; not only is it unable to protect the most vulnerable, especially the youngest users, but it also puts a heavy burden on public spending and benefits organized crime. In this *Note*, we examine the reforms needed to take back control of this market. Economic analysis, along with the study of recent experiences abroad, shows that the legalization of recreational cannabis, under strict regulations, makes it possible to fight organized crime, restrict access to the product for the youngest in society, and develop an economic sector that creates jobs and tax revenue.

Experiences abroad show that while these different objectives can be achieved, it is nevertheless necessary to define the priority assigned to each of them, and that these priorities determine the practical arrangements of the regulation. We recommend that the protection of minors and the eradication of trafficking be the two priority objectives of legalization. To this end, we recommend the implementation of a cannabis production and distribution monopoly under the aegis of an independent regulatory

authority. Centralized management makes it possible to effectively regulate the market and, along with the improvement of the statistical indicators necessary to monitor changes in consumption and the structure of the sector, prevent any potential abuses.

In accordance with the two priority objectives identified, a portion of the new tax revenue generated by the sector –of which this *Note* provides an estimate– must be used to protect minors and eradicate organized crime. Firstly, it is necessary to guarantee products of sufficient quality and quantity, initially paying producers prices at a high enough level to ensure the development of the sector, while keeping the prices that consumers pay low enough to dry up the illegal market. At the same time, we emphasize the importance of redeploying police forces to the fight against large-scale traffickers and to the enforcement of the ban on sales of cannabis, alcohol, and tobacco to minors. Prices could then be raised once the illegal market has been eradicated. Secondly, we recommend stepping up prevention and education policies at an early stage in elementary, middle, and high schools, but also among families and health workers. Finally, we recommend that part of the tax revenue from cannabis be used for urban policy and for education in trafficking areas.

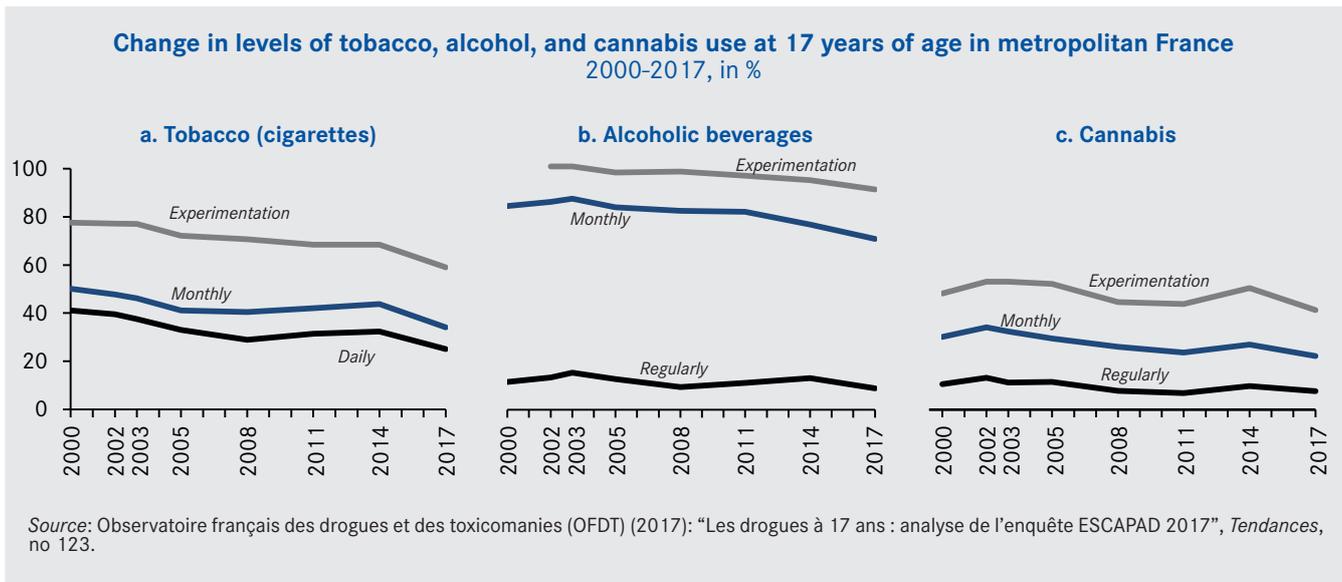
This Note is published under the sole responsibility of its authors

## Crackdown and a record level of cannabis consumption: A French failure

France has the highest rate of cannabis use in Europe. In 2016, 41.4% of French people aged 15 to 64 had used it at least once. In comparison, the European average is 18.9%. As illustrated by the graph and the latest statistics from the *Observatoire français des drogues et des toxicomanies* (OFDT, French Monitoring Center for Drugs and Drug Addiction), the situation among minors is rather worrying, despite recent improvements. For example, in 2014, one in two minors had previously used it, doubling over the last twenty years, and 10% were regular smokers.<sup>1</sup> Due to the damage caused by cannabis to the schooling and health of the youngest users, this alarming figure calls for a rapid and appropriate response from the public authorities –it is urgent that we take back control. In the absence of any regulation, the French are exposed very early on to psychotropic drugs, sold without any health control and within schools themselves. Far from stopping its consumption and despite massive investments in the crackdown, prohibition has boosted the use of cannabis due to its very high availability.

As a matter of fact, policies tackling drugs and addiction in France, despite their poor results, have become increasingly repressive over time. Thus, nearly 145,000 people are arrested each year for drug use, 90% of whom are cannabis users.<sup>2</sup> The number of people arrested for simple use has increased by a factor of 50 since 1970.<sup>3</sup> This increase reflects the increase in consumption but, above all, the increase in repression against users, encouraged by a numbers-driven policy. Based on the theory of deterrence, the 2007 law on the Prevention of Delinquency prioritizes the need to punish users. Unsurprisingly, the number of court decisions made on simple use has exploded in recent years.<sup>4</sup>

Faced with the inflation in the number of cannabis-related cases, prosecutors cannot prosecute or impose sentences in all cases. They have therefore defined specific alternative approaches.<sup>5</sup> The severity and application of the law varies from one area to another, particularly between rural, urban, and peri-urban zones, creating *de facto* issues of discrimination, as identified by the *Commission nationale consultative des droits de l'Homme* (CNCDH, French Consultative Commission on Human Rights).<sup>6</sup>



The authors warmly thank Jean Beuve, Scientific Advisor at the CAE, and Étienne Fize, Economist at the CAE, for their outstanding work. Their help was crucial. We also thank all those, too numerous to be mentioned individually, who agreed to share their expertise during the interviews.

<sup>1</sup> See Observatoire européen des drogues et des toxicomanies (OEDT, European Monitoring Center for Drugs and Drug Addiction) (2016) and Observatoire français des drogues et des toxicomanies (OFDT, French Monitoring Center for Drugs and Drug Addiction) (2019): “Usages d’alcool, de tabac et de cannabis chez les adolescents du secondaire en 2018”, *Tendances*, no 132, June.

<sup>2</sup> See Office central pour la répression du trafic illicite des stupéfiants (OCTIS) (2010).

<sup>3</sup> See Obradovic I. (2015): “Trente ans de réponse pénale à l’utilisation de stupéfiants”, *Tendances*, no 103, Observatoire français des drogues et des toxicomanies (OFDT), October.

<sup>4</sup> They increased by a factor of 25 between 2002 and 2015. They include fines and, in rarer cases, imprisonment, community service (in French, *travaux d’intérêt général*, TIG), compulsory treatment, and awareness training. See Obradovic (2015).

<sup>5</sup> There are several alternatives to prosecution. Proposed by an officer, there are those that do not appear on the criminal record (formal warning, referral to a health facility). Then there are those that do appear on the criminal record (composition pénale, or out-of-court settlement), such as TIG or compulsory treatment. Finally, there are cases where the offence leads to a fine without prosecution (penal transaction). See Poulliat E. and R. Reda (rep.) (2018): “Application d’une procédure d’amende forfaitaire au délit d’usage illicite de stupéfiants”, *Rapport d’information de l’Assemblée nationale*, no 595, 25 January. In 2016, out of 68,681 alternative measures to prosecution, there were 44,566 formal warnings.

<sup>6</sup> Over the period 1990-2010, 93.4% of those arrested for simple use were male, see Amrous N. (2016): “Les infractions à la législation sur les stupéfiants entre 1990 et 2010”, *Grand Angle ONDRP*, no 38, March.

This repressive policy takes up a significant proportion of the resources of law enforcement. It causes congestion within police forces and the justice system, which cannot focus on other tasks. For example, interventions related to simple cannabis use accounted for more than one million hours of law enforcement work in 2016.<sup>7</sup>

Public spending related to tackling cannabis is estimated at 568 million euros. These costs mainly relate to the repression, in particular police and judicial action, which represent 70% and 20% of the total, respectively. Spending on care, prevention, and research, 10% of the total, is unfortunately overlooked. If we add the loss of income, production, and compulsory levies linked to imprisonment, the social cost of cannabis would be 40% higher, at 919 million euros.<sup>8</sup> However, there is no tax revenue to counteract these costs, since the clandestine nature of trafficking means it goes untaxed.<sup>9</sup>

Reforming the prohibition policy promoted by France for more than fifty years is an urgent matter. Not only is this policy unable to protect the most vulnerable, especially young people, but it also puts a heavy burden on public spending and benefits organized crime. Drawing on recent experiences of legalization abroad, this Note examines the reforms needed to take back control of this market. The main objective is to protect minors. Indeed, they are the ones at the greatest risk of using cannabis.

**Finding 1.** Despite having one of the most repressive policies in Europe, the French, and particularly minors, rank among the largest consumers of cannabis in the European Union.

## Cannabis use: What are the health effects?

According to a 2017 study of more than 10,000 articles, there are no proven serious adverse effects of moderate cannabis use on the health of adults.<sup>10</sup> In fact, cannabis is a peculiar drug because, unlike heroin, cocaine, or even alcohol, it is almost impossible to overdose. In addition, cannabis is much less addictive than other legal (alcohol, tobacco) and illegal (cocaine, heroin, etc.) substances.<sup>11</sup> Its prohibition may lead its users to believe that other illegal drugs are also not particularly addictive, which is not the case. However, cannabis use does present health risks for younger children: the risk of developing schizophrenia or other psychotic disorders is strongly associated with regular cannabis use.<sup>12</sup> Experts therefore agree that cannabis should not be used for recreational purposes prior to adulthood, and ideally not before the age of 25. In addition to the fact that regular use seems to play a role in triggering psychiatric disorders, cannabis affects short-term memory and therefore the ability to learn and to study.<sup>13</sup>

Furthermore, the aforementioned meta-analysis study shows that the health effects of cannabis are not exclusively negative. The medical use of cannabis is believed to be beneficial for a number of diseases and appears promising for others (see Box 1).

**Finding 2.** Cannabis is less addictive than other psychoactive substances. There are no serious adverse effects of moderate cannabis use in adulthood. On the other hand, consumption by young people is dangerous to their health.

<sup>7</sup> On the basis of six hours for proceedings for simple drug use (from the time of arrest to the destruction of seals), MILDECA estimates that police and gendarmes devote more than one million working hours to proceedings against users. See MILDECA (2016): *Restitution des travaux du Groupe de travail sur la réponse pénale à l'usage de stupéfiants*.

<sup>8</sup> See Ben Lakhdar C. and P.-A. Kopp (2018): "Faut-il légaliser le cannabis en France ? Un bilan socio-économique", *Économie et Prévision*, no 213, pp. 19-39. For all policies combating all illegal drugs, the total cost is estimated at 1.5 billion euros in 2010, see Observatoire français des drogues et des toxicomanies (OFDT) (2013): *Drogues et addictions, données essentielles*.

<sup>9</sup> We propose an estimate of the shortfall later in this Note. See, Geoffard P.-Y., J. Beuve, and E. Fize (2019): "Une filière du cannabis en France", *Focus du CAE*, no 34-2019, June.

<sup>10</sup> National Academies of Sciences, Engineering, and Medicine (2017): *The Health Effects of Cannabis and Cannabinoids: The Current State of Evidence and Recommendations for Research*.

<sup>11</sup> Roques B.P. (1999): *La dangerosité des drogues*, Report to the French Ministry of Health, Odile Jacob. For more information, see Fize (2019).

<sup>12</sup> This causal effect is of the same magnitude as the effect of living alone, according to van Ours J.C. and J. Williams (2012): "The Effects of Cannabis Use on Physical and Mental Health", *Journal of Health Economics*, vol. 31, no 4, pp. 564-577.

<sup>13</sup> See, for example, Liccardo Pacula R., K.E. Ross, and J. Ringel (2003): "Does Marijuana Use Impair Human Capital Formation?", *National Bureau of Economic Research*, no 9963; Hall W. (2015): "What Has Research Over the Past Two Decades Revealed About the Adverse Health Effects of Recreational Cannabis Use?", *Addiction*, vol. 110, no 1, pp. 19-35; Marie O. and U. Zöllitz (2017): "'High' Achievers? Cannabis Access and Academic Performance", *The Review of Economic Studies*, vol. 84, no 3, pp. 1210-1237.

## 1. Medical cannabis: The state of play

Medical cannabis can be defined as the use of cannabis (or one of its components) for therapeutic purposes. It can come in many forms: capsule, oil, spray, inhalation, herbal cannabis for smoking. In the vast majority of cases, the patient only obtains it after medical advice and on prescription.

More and more studies are focusing on the medical applications of cannabis (or its plant). The two main components of cannabis – $\Delta$ 9-tetrahydrocannabinol (THC), which is responsible for hallucinogenic, stimulating, and euphoric effects, and cannabidiol (CBD), which is an active component but without an inebriating or addictive effect– have medically useful properties, whether used simultaneously or separately. THC is used, for example, to treat people with Tourette’s syndrome or post-traumatic stress disorder. CBD is used to calm epileptic seizures. There are other components of medical interest, such as cannabichromene or cannabigerol, which appear to have anti-inflammatory properties.

The 2017 literature review by the American National Academy of Sciences, covering more than 10,000 scientific articles, indicates that medical cannabis use is positively and conclusively associated with reduced pain, fewer side effects of chemotherapy, and a decrease in the spasticity symptoms of multiple sclerosis. It is also likely that cannabis is useful for sleep disorders.<sup>a</sup>

In France, only three cannabis-based drugs are authorized. Two have temporary authorizations (access is still very complicated) and one, Sativex, has had permanent authorization since 2014, but it is still not available in France due to a conflict on price between the manufacturer and the health insurance system.

<sup>a</sup> For more details, see Fize E. (2019): “Le cannabis médical: une évidence ? Aperçu de la situation en France et dans le monde”, *Focus du CAE*, no 32-2019, June.

## The end of the war on drugs: Decriminalization and legalization of cannabis worldwide

Until recently, international policy on psychotropic drugs, including cannabis, was aimed at eradicating them through prohibition. This policy took shape at the beginning of the twentieth century under the impetus of the US leagues of decency and temperance, before being popularized by

Richard Nixon under the title of the “war on drugs.” It led to the adoption of the United Nations Single Convention on Narcotic Drugs in 1961 (followed by the conventions of 1971 and 1988, under Nixon and Reagan). The objective was to restrict the use of psychotropic substances to medical and scientific purposes only and to regulate their use in order to avoid any abuse, with trafficking and use constituting criminal offences. Thus, psychotropic drug users are regarded as criminals and imprisoned in many countries, most notably the United States, but also France.

In a 2014 report entitled “Ending the Drug Wars”, five Nobel Prize winners and some leading politicians made an incontrovertible case against this policy. The “war on drugs” has had immeasurable negative effects worldwide: mass incarceration in the United States, ultra-repressive policies and human rights violations in Asia, a vast system of corruption and destabilization in Afghanistan and West Africa, unprecedented waves of violence in Latin America, the AIDS epidemic in Russia. And despite an exorbitant human and fiscal cost, it has failed to eradicate drug addiction. The United Nations World Drug Report 2018 estimates that 275 million people, or 5.6% of the world’s population aged 15 to 64, consumed an illegal drug in 2016. For 192.2 million of them, or 3.9% of the adult population, it was cannabis.<sup>14</sup> Since these millions of users cannot obtain their drugs legally, one of the extremely damaging consequences of prohibition has been that it has encouraged the emergence of organized crime. Drug trafficking is the main source of income for organized crime. The financial volumes, estimated in 2005 at 360 billion dollars per year (including 142 billion dollars for cannabis alone),<sup>15</sup> are such that they corrupt hundreds of thousands of officials and elected representatives. They also corrupt the global financial network through large-scale money laundering operations. Finally, they fuel violence, guerrilla warfare, and terrorism.

Faced with so many downsides and such poor results in terms of decreasing consumption, several US states have chosen to legalize cannabis, not only for therapeutic purposes, but also for recreational purposes.<sup>16</sup> They followed Uruguay, which in 2013 was the first country in the world to do so. Canada, South Africa, and Georgia also legalized it in 2018. These recent changes, as well as the forms of decriminalization implemented in Portugal (2001) and Australia (2004), and the experience of coffeeshops in the Netherlands, provide us with information on the impact of such legalization. Although it is too early to draw a definitive conclusion, they provide answers to legitimate concerns about the impact on crime, taxation, and the potential gateway effect of cannabis legalization.

<sup>14</sup> United Nations Office on Drugs and Crime (UNODC) (2018): *World Drug Report 2018*, United Nations Publications. Among these illicit drug users, 31 million are said to have addiction problems and 4 million are in detoxification treatment.

<sup>15</sup> United Nations Office on Drugs and Crime (UNODC) (2005): *World Drug Report 2005*, United Nations Publications.

<sup>16</sup> By March 2019, thirty-three states had legalized therapeutic cannabis and ten states had legalized recreational cannabis (see [businessinsider.fr/us/legal-marijuana-states-2018-1](https://businessinsider.fr/us/legal-marijuana-states-2018-1)).

## Legalization and crime

Studies show a decrease in violence and crime following decriminalization or legalization. It is difficult to isolate the reasons for this decline because several channels are possible and are probably in play simultaneously. First of all, legalization leads to a weakening of criminal networks, which are deprived of part of their income. Secondly, the police, who spend a lot of time arresting ordinary users and processing their cases, can devote themselves to other missions, which intensifies the crackdown on other crimes.<sup>17</sup>

**Finding 3.** The legalization of cannabis is generally followed by a decrease in crime.

## Legalization and increased demand

With regard to use, studies are divided on the estimation of the increase in demand following legalization or decriminalization. The heterogeneity of the effects partly reflects the diversity of legalization policies, but above all that of demand. Some studies do not find a significant increase in use, whereas others find a targeted positive effect. Consumption would increase among adults, but more through the quantity consumed by each user than through the number of users.<sup>18</sup> In other words, the effects would be concentrated on the intensive part of the demand but not on the extensive part. In particular, not only would demand among the youngest users not increase, but, depending on how legalization is implemented, it would in fact decrease.<sup>19</sup> For example, according to a US federal study published at the end of the first two years of full legalization (2014-2015) in Washington and Colorado, teenage consumption decreased by 12%.<sup>20</sup> This fall is due to the weakening of the black market. Thanks to the opening of adult-only stores, trafficking has decreased and teenagers have less contact with dealers and their products. It is thus more difficult for them to reach suppliers. A key to protecting minors is therefore to eliminate the black market and to ensure that they cannot legally buy cannabis.

**Finding 4.** Legalization leads to an increase in use among regular consumers and a decrease in use among young people when the ban on sales to minors is strictly enforced.

## Legalization, alcohol consumption, and the gateway effect

Another question addressed by the academic literature is whether alcohol and cannabis, on the one hand, and tobacco and cannabis, on the other, are substitutes or complements. Most studies find that alcohol and cannabis are substitutes.<sup>21</sup> In terms of the link between cannabis and tobacco, there is a positive correlation between tobacco and cannabis consumption (co-use), but the authors struggled to identify a causal link.<sup>22</sup> However, they agree that the simultaneous consumption of cannabis and tobacco is harmful because it can prevent individuals from quitting smoking (tobacco or cannabis), thus trapping them in addiction.<sup>23</sup> One of the advantages of the end of prohibition is that it allows cannabis to be consumed in forms other than smoking it with tobacco. Indeed, with a legal sector, products are of a high quality and individuals no longer hesitate to buy cannabis in more sophisticated forms, such as electronic cigarette liquids or cakes. For example, in the state of Colorado, the proportion of cannabinoids that is not smoked increased from 33.9% to 45.9% between 2014 and 2017.<sup>24</sup> The purpose of this Note is not to catalog these different products, nor to go into detail about the differences between resin and herbal cannabis. All the arguments and recommendations proposed are in terms of the equivalent in grams of herbal cannabis, since this is the product preferred by consumers on the black market because its quality is easier to assess than other forms.

The debate in the literature on the transition from cannabis to hard drugs is equally intense. Most studies do not find a gateway effect or, if they find a correlation, cannot deduce a causal relationship. Some studies find a stepping-stone effect only for part of the population (“troubled” young men). Conversely, the decriminalization and the existence of coffeeshops in the Netherlands have led to the segmentation

<sup>17</sup> For example, Adda J., B. McConnell, and I. Rasul (2014): “Crime and the Depenalization of Cannabis Possession: Evidence From a Policing Experiment”, *Journal of Political Economy*, vol. 122, no 5, pp. 1130-1202, show that the decriminalization of cannabis in a London neighborhood in 2001 made it possible to redirect police efforts towards other crimes and thus reduce crime with lasting effects over time.

<sup>18</sup> However, the monitoring implemented in Canada during legalization shows a significant increase in the number of users, but only among men aged 45 to 65.

<sup>19</sup> DiNardo J. and T. Lemieux (2001): “Alcohol, Marijuana, and American Youth: The Unintended Consequences of Government Regulation”, *Journal of Health Economics*, vol. 20, no 6, pp. 991-1010, do not find any effect of decriminalization on consumption among high-school students. Kerr D.C.R., H. Bae, S. Pibbs, and A. C. Kern (2017): “Changes in Undergraduates’ Marijuana, Heavy Alcohol and Cigarette Use Following Legalization of Recreational Marijuana Use in Oregon”, *Addiction*, vol. 112, no 11, pp. 1992-2001, seem to confirm the low or nonexistent effects on cannabis use among students.

<sup>20</sup> National Survey on Drug Use and Health (1971-2014): *Summary of Methodological Studies*, CBHSQ Methodology Report.

<sup>21</sup> See, for example, Chaloupka F.J. and A. Laixuthai (1997): “Do Youths Substitute Alcohol and Marijuana? Some Econometric Evidence”, *Eastern Economic Journal*, vol. 23, no 3, pp. 253-276 and DiNardo and Lemieux (2001).

<sup>22</sup> Badiani A., J.M. Boden, S. De Pirro, D.M. Fergusson, L.J. Horwood, and G.T. Harold (2015): “Tobacco Smoking and Cannabis Use in a Longitudinal Birth Cohort: Evidence of Reciprocal Causal Relationships”, *Drug and Alcohol Dependence*, no 150, pp. 69-76.

<sup>23</sup> Weinberger A.H., J. Platt, J. Copeland, and R.D. Goodwin (2018): “Is Cannabis Use Associated with Increased Risk of Initiation, Persistence, and Relapse? Longitudinal Data from a Representative Sample of US Adults”, *The Journal of Clinical Psychiatry*, vol. 79, no 2.

<sup>24</sup> Marijuana Policy Group (2018): *Market Size and Demand for Marijuana in Colorado 2017 Market Update*, Report to the Colorado Department of Revenue, August.

of the drug market, thus reducing the gateway effect.<sup>25</sup> Dealers sell all kinds of drugs, some of which are extremely addictive, which they can get cannabis buyers to try, turning the most vulnerable of them into drug addicts. The gateway effect in this case comes from the integrated context of the illegal market. Access to hard drugs can be made more difficult if cannabis is legal and regulated, because licensed cannabis sellers will not be able to sell them. The same applies to the prohibition of the sale of cannabis to minors, which these licensed sellers will respect more than dealers do. This requires redeploying part of the police forces to strictly enforce the law, with particularly severe penalties for abuse.<sup>26</sup>

**Finding 5.** Cannabis is more a substitute for alcohol and, in the form of herbal cannabis and resin, a complement to tobacco. There is no evidence of a gateway effect from cannabis to hard drugs.

### The financial windfall of legalization

First of all, legalization makes it possible to generate new tax resources through the taxation of cannabis. For example, the states of Colorado and Washington collect between 200 million and 300 million dollars a year in taxes thanks to the cannabis industry. This tax bonus does not exist with decriminalization. Second, even if new tax revenues are excluded, policies of legalization and decriminalization have a positive effect on public finances in a cost-benefit analysis. Most studies find that the gains in terms of user-related law enforcement and justice costs are higher than the costs of market regulation and the hypothetical increase in health costs.<sup>27</sup> It should be noted that the costs of repression of traffickers and the black market remain. Ultimately, between savings on the costs of the crackdown aimed at consumers and the introduction of new taxes, the legalization of cannabis generates a significant fiscal dividend.

### Prioritization of the objectives pursued by legalization: What practical arrangements for regulation in France?

Experiences of decriminalization and legalization are very diverse, even at the national level. For example, legalization in Quebec is different to that in Ontario, that in California is different to that in Colorado. They reflect the multiplicity of objectives targeted by these new regulations. These may include restricting access to psychotropic drugs for the most vulnerable groups, especially young people, but also for people with a history of mental illness; reducing criminal activity; redeploying police forces and relieving congestion in the justice system and in prisons; developing a sector that generates legal activity and employment while monitoring the quality of products; or generating new tax revenues. All the countries that have legalized cannabis refer to these different objectives, but the priority given to one or the other ultimately leads to the implementation of quite different policies, as demonstrated by the pioneering experiences of Uruguay and the states of Colorado and Washington (see Box 2).

Several useful lessons can be drawn from these experiences. Restricting minors' access to cannabis and combating crime caused by prohibition are two priority objectives shared by all. These objectives can be balanced by economic or fiscal considerations: in some US states, the objective of levying new taxes while developing a profitable, legal industry has led to relatively high taxation, resulting in a high selling price that has contributed to perpetuating the black market. Conversely, Uruguay's decision to charge a low price was aimed at eradicating crime. However, the Uruguayan example shows that too low a price, and too restrictive supply regulations, can hinder the emergence of a profitable, legal supply and thus fail to fight trafficking. In Uruguay, for example, but also in Canada, insufficient cannabis production prior to legalization has led to consumer rationing. As consumers cannot legally obtain the amount they desire, they continue to use the black market, in contradiction with the initial objective.

<sup>25</sup> MacCoun R.J. (2011): "What Can We Learn from the Dutch Cannabis Coffeeshop System?", *Addiction*, vol. 106, no 11, pp. 1899-1910.

<sup>26</sup> A 2011 survey conducted by the *Comité national contre le tabagisme* (CNCT, French Committee Against Tobacco) revealed that 62% of the tested establishments sold cigarettes to minors, see <https://cnct.fr/communiqués/interdiction-de-vente-de-tabac-aux-mineurs-le-cnct-interpelle-letat/>. Similarly, for alcohol, the law is not enforced and inspections by the authorities are very rare (80% of the establishments surveyed stated that they have not been inspected in the last five years), see Karsenty S., C. Díaz Gómez, A. Lermenier, and V. Galissi (2013): "L'application de l'interdiction des ventes d'alcool aux mineurs en France depuis la loi de 2009. Comparaison entre 2012 et 2005", *BEH*, no 16-17-18, May 7. Available at [http://opac.invs.sante.fr/doc\\_num.php?explnum\\_id=8912](http://opac.invs.sante.fr/doc_num.php?explnum_id=8912).

<sup>27</sup> As such, the US Office of National Drug Control Policy (ONDCP) estimates that in the United States in 2002, of the 180 billion dollars in drug-related costs, 60% were related to crime (only 8.7% were health costs). See Office of National Drug Control Policy (ONDCP) (2002): *National Drug Control Strategy: FY 2003 Budget Summary*, Washington DC.

## 2. Various objectives for legalization: The case of Uruguay and the states of Washington and Colorado<sup>a</sup>

### The fight against organized crime in Uruguay

Uruguay's main objective was to reduce the black market and strengthen the protection of minors and the safety of adult users. These priorities, which are also those of the Canadian government, have resulted in a state monopoly on cannabis production, delegated to private companies that are strictly regulated in terms of the content of psychoactive properties in products, their quality, and their production method. To eradicate the black market, Uruguay decided to set a very low selling price of 1.30 dollars per gram of herbal cannabis, matching the price on the black market. But by the end of 2017, only two producers had been approved for an annual volume of one ton each, while the market was estimated at between 35 and 40 tons. In addition, the hostility of pharmacists, given the responsibility of selling cannabis by the state, has made it more difficult for users to obtain supplies. Finally, the authorization of self-cultivation or small producers' clubs, which is also limited and strictly regulated, has not managed to compensate for the shortage of public supply. Therefore, five years after legalization began, a significant proportion of users continue to turn to the black market.

### The establishment of a profitable sector in the US states

Following citizens' initiative referendums in November 2012, Colorado and Washington had to introduce

legislative changes in 2013 and 2014 respectively to end the prohibition of cannabis. Priority was given to reducing the costs of prohibition, developing a new sector of activity, and enabling the state to generate tax revenue from it. These objectives were achieved through a liberal approach, relying on private operators for production, distribution, and sales. However, each of the operators must comply with numerous conditions to be eligible for a license issued by the state. Although the federal ban continues to have an impact on the sector, in particular on the ability of operators to finance their investments through bank loans, a real industrial sector has developed, with an estimated turnover in 2016 in each of these states of 1 billion dollars (for a population of 5.6 million in Colorado and 7.4 million in Washington). In October 2016, a fairly comprehensive study of the economic impact of legalization in Colorado estimated that the total number of jobs created (direct, indirect, or induced) was 18,000, or 0.6 percent of the working population.<sup>b</sup> In Washington, the level of taxes is high, leading to a selling price significantly higher than that found on the black market. This relative high price explains why, although the black market has declined fairly rapidly, it still accounts for about 50% of the cannabis sold in the state.<sup>c</sup>

<sup>a</sup> INHESJ-OFDT (2017): *Une analyse comparée des expériences de régulation du cannabis (Colorado, Washington, Uruguay)*, October.

<sup>b</sup> MPG (2016): *The Economic Impact of Marijuana Legalization in Colorado*, October.

<sup>c</sup> Arcview Market Research (2019): *The State of Legal Marijuana Markets*, 6<sup>th</sup> edition.

### Recommendation 1. Prepare for the legalization of recreational cannabis by prioritizing the protection of minors and the eradication of trafficking.

In the event of the legalization of recreational cannabis, which would aim to protect minors and dry up the market for dealers, it is imperative that the public authorities forecast sufficient supplies prior to legalization and ensure market regulation. There are now two main organizational models: on the one hand, Uruguay's centralized state management through a public production and distribution monopoly, a model also adopted in Quebec and British Columbia; and, on the other hand, regulated private markets, such as in the US states and some other Canadian provinces, for example, Alberta or Manitoba. Centralized management has the advantage of ensuring better control of youth consumption. For the protection of minors, it is better to have control over

the organization of the sector and its functioning rather than leaving it subjected to market mechanisms. Indeed, the feedback from the US states shows that local governments are regularly required to straighten out dynamics that they had not anticipated, for example in terms of marketing, advertising, the diversity of products offered (edibles) and their dosage, and periods and points of sale. In order to avoid these problems, it is preferable for the state to have a monopoly on the production and distribution of cannabis and to acquire the necessary legal instruments in order to control its market price, which is a major regulatory tool.

This monopoly could be exercised through licenses granted to approved producers and distributors, in a similar way to tobacco distribution. It is desirable that stores that sell cannabis be solely dedicated to this activity in order to facilitate the monitoring of these establishments. It is easier to check compliance with the prohibition of sale to minors if they have no reason to enter these stores. In this perspective, it would

be appropriate for police forces to change their numbers-driven policies so that, rather than focusing on arresting cannabis users, they instead concentrate on offences of non-compliance with the prohibition on the sale of psychotropic substances (alcohol, tobacco, cannabis) to minors. With regard to production, strict monitoring of the quantities cultivated can enable the state to check that the volumes in circulation correspond to those actually cultivated. This strict control should not mean rationing production. On the contrary, production must be sufficient and of a high quality. In particular, the state must forecast sufficient supplies prior to legalization in order to avoid rationing and the survival of the black market.

Centralized state management can present the risk of public authorities becoming dependent on the windfall effect of tax revenue from legalization. One solution would be the creation of an independent administrative authority to manage the state monopoly. This solution would have the advantage of limiting the public authorities' desire for cannabis-related tax revenues and their capture by lobby groups in the sector, which will inevitably be formed.<sup>28</sup> The existence of a competent and independent regulator appears necessary to properly regulate the market and its potential abuses, insofar as the financial windfall of recreational cannabis represents significant economic and industrial issues. The regulator would thus have a decisive role to play both upstream and downstream of the sector on pricing issues (price level), crop quantities, product quality, number and location of points of sale, advertising, etc. Finally, this regulator could also control part of the tax resources in order to promote preventive policies and support the transformation of the economies of trafficking areas as they develop into law-abiding areas.

**Recommendation 2. Establish a public monopoly on the production and distribution of recreational cannabis. Create a competent regulatory agency to supervise the market.**

## A demand-side policy and support for the conversion of trafficking areas as alternatives to prohibition

To ensure better protection of minors and the most vulnerable populations, it is essential to implement a genuine demand-side policy, as opposed to prohibition, which is a supply-side policy. To limit the increase in consumption, several tools are available to the public authorities.

### Price level, taxation, and drying up of illegal markets

In the perspective of a cannabis legalization policy, the price of legalized substances is an important element in regulating demand. While no serious econometric study has focused on measuring the price and income elasticities of cannabis in France, these studies have been conducted for other countries. They all show the same thing: cannabis use varies significantly with price and income. The magnitude of the effects varies from one study to another, but the signs and direction are not debatable.<sup>29</sup> Because of this price elasticity of demand for cannabis, the state has, as part of a legalization program, a simple and effective means of social regulation. To moderate usage and combat the harmful effects of abusive consumption, one only has to increase the tax rate (or the price directly if it is set by the state). It is also useful to combine a price control policy with regulation on product accessibility: number of points of sale, opening hours, minimum legal age to buy products, advertising control, etc. Some of these restrictions, which can be implemented cheaply, have proven effective in reducing the morbidity and mortality caused by alcohol and tobacco.

However, there are limits to taxation policies. When the tax burden is too high, it is tantamount to prohibiting consumption among those with low incomes. Very high prices introduce an economic prohibition with similar consequences to legal prohibition, as illustrated by the case of tobacco in France,

<sup>28</sup> Ben Lakhdar C. and J-M. Costes (2016): *Contrôler le marché légalisé du cannabis en France : l'exemple fondateur de l'ARJEL*, Terra Nova Report, proposes drawing inspiration from the ARJEL model in the case of gambling.

<sup>29</sup> Davis A.J., K.R. Geisler, and M.W. Nichols (2016): "The Price Elasticity of Marijuana Demand: Evidence from Crowd-Sourced Transaction Data", *Empirical Economics*, vol. 50, no 4, pp. 1171-1192, obtain a price elasticity of between - 0.67 and - 0.79. Jacobi L. and M. Sovinsky (2016): "Marijuana on Main Street? Estimating Demand in Markets with Limited Access", *American Economic Review*, vol. 106, no 8, pp. 2009-2045, find a price elasticity of - 0.2 for participation (extensive margin), which corresponds to the lower end of elasticities on cigarettes, and 0.17 for the intensive margin. It is difficult to obtain universal price elasticity because the effect on consumption depends on many parameters (existence of the black market, possibility of self-cultivation, social stigma...).

where cigarette trafficking is flourishing.<sup>30</sup> To avoid the emergence of a black market and the resurgence of organized crime, there is therefore a maximum price level that must not be exceeded. However, it is important to stress that the price level depends positively on investments made in the crackdown on traffickers. The more they are pursued by the police, the easier it is for the state to monopolize the market and apply high prices. Indeed, traffickers will wage a price war to try to maintain their market share. The only way to eliminate them is to set a predatory price, that is, a price low enough to dry up their demand. The government is initially forced to limit the tax burden (or price level) in order to push traffickers out of the market. We are then faced with a dilemma between eliminating trafficking or limiting consumption. An innovative policy, which combines targeted repressive measures with a policy of legalization at a predatory price, helps to mitigate this problem. The idea is to redeploy police forces and to use part of the tax revenue generated by legalization to intensify the repression of mafia networks. The simulations conducted as part of this Note suggest a price of 9 euros per gram of herbal cannabis (see Box 3). Such a price would make it possible to combat the illegal market (predatory pricing) while at the same time having a level of taxation similar to that of tobacco. They also show that, following legalization, the best way to eradicate the black market, while limiting consumption, is to target illegal cannabis producers, thereby increasing their costs, and to encourage preference for legal cannabis among adult consumers.

In other words, it is wrong to think that the cost of repression can be completely avoided by legalizing the cannabis market. Without substantial efforts to combat traffickers, legalization will result in the coexistence of legal and illegal sales of cannabis. As a result, in the short term, the proposed legalization would not save on enforcement costs. These must be maintained in order to limit the influence of the shadow economy and weaken crime organizations, while limiting consumption. Thus, although they are generally opposed, legalization and repression are complementary public policies (see Box 3). In addition, it is important to note that the issues of drying up the black market and controlling demand can be resolved sequentially. Relatively cheap (not overtaxed) legal cannabis can be offered initially to try to dry up the black market; then, in a second step, a gradual increase in prices (taxes) will help to limit consumption.

**Recommendation 3.** Ensure product quantity and quality. Initially set low prices to dry up the illegal market. Organize the redeployment of police forces to the fight against large-scale traffickers and the strict enforcement of the ban on sales of cannabis, alcohol, and tobacco to minors.

### 3. Complementarity of legalization and repression policies

Using simulations, it is possible to study which public policy instruments are effective in combating dealers, while limiting the demand for cannabis.<sup>a</sup> The starting point of the analysis is to show that if the price of legal cannabis is the only tool used to eradicate the illegal market, total cannabis consumption will be the same as in a context of perfect competition between dealers. In other words, total consumption will be higher than the status quo with oligopolistic competition between dealers. However, price is not the only instrument available to public authorities. The model then simulates the impact of other parameters on the price level and the resulting increase in demand. These public policy parameters are: repressive actions aimed at increasing the marginal cost of dealers; the probability of arrest for possession of illegal cannabis; the level of punishment when arrested; and the preference for legal action.

The results of the simulation based on French data show that in order to eradicate the illegal sector while keeping total consumption limited, it is more effective to encourage consumer preference for legal cannabis and to strengthen repression against traffickers (thus increasing their cost) than to increase penalties against consumers. There are several possible ways of encouraging the preference for legal products: prioritize quality; increase product transparency and traceability; provide a clearly differentiated offer according to THC content; ensure a supply of products in non-smoking forms (i.e., without tobacco); or stigmatize the consumption of illegal cannabis. In addition, the price obtained by this simulation (9 euros per gram) is consistent with the estimates made on the creation of a cannabis industry in France.

<sup>a</sup> Auriol E., A. Mesnard, and T. Perrault (2019): "En finir avec les dealers : à quel prix ?", *Focus du CAE*, no 33-2019, June.

### The vital importance of prevention policies

It is crucial to carry out prevention work very early in elementary schools, and it should be continued in middle and high schools, for example by expanding and boosting the system of "young consumer consultations," or by calling on the expertise of grassroots associations, whose results could be regularly evaluated. The importance of targeting young people is related to the fact that humans tend to give too much

<sup>30</sup> According to KPMG (2017): *Project Sun*, France is the largest consumer of contraband cigarettes in Europe.

weight to the present at the expense of the future. Regarding the consumption of psychotropic drugs, the benefits (intoxication, excitement, calming, etc.) are immediate, while the costs (dependence, health problems, etc.) are deferred. This encourages experimentation and consumption, which sometimes leads to addiction. Given the problems posed by addiction in France, particularly to alcohol and tobacco, it is surprising that public health and lifestyle courses, focused on objective facts, are not integrated into the school curriculum. With regard to the working population, national information campaigns, transmitted through the media and social networks, are a good way of reaching those who are no longer in the school system. Finally, another focus of the fight against drug addiction should be on its early detection. Nothing or almost nothing is being done in this respect. General practitioners, who are in the front line of screening and who could refer their patients to possible specialized organizations, are in fact helpless. They are generally very poorly trained in this issue. It is urgent for the government to consider a systematic screening and early care system for addiction, particularly within outpatient care.

Demand-side policies based on prevention and education are working, as evidenced by the decline in alcohol and tobacco consumption in France. Since the early 1960s, the quantity of pure alcohol consumed per capita per year in France has fallen by half. This is a fundamental trend: between 1990 and 2013, the quantity of alcohol on sale in France fell by 25%. France is now in the upper average of European countries for its alcohol consumption, whereas it was an outlier forty years ago.<sup>31</sup> This decrease is the result of a long period of public education and measures aimed at limiting consumption. The goal is not to prevent the French from drinking: it is to prevent them from drinking when they are driving, when they are too young, and to prevent them from falling into addiction. With regard to tobacco, similar results are found for men: the proportion of regular smokers fell from 72% in 1953 to less than 30% in 2018. However, for women, it increased from less than 10% in 1953 to almost 25% in 2018, reflecting the changes in society and women's emancipation. In recent years, there has been a sharp decline in the prevalence of daily smoking, especially among young men and those with low incomes or low levels of education, that is populations that traditionally consume more tobacco. These successes are again attributable to a whole series of public health and education measures: bans on smoking in public places, on sales to minors (which are not sufficiently respected because they are poorly supervised), and on advertising; neutral

packaging; high taxation; better reimbursement of nicotine substitutes; authorization of electronic cigarettes.<sup>32</sup>

**Recommendation 4.** Use a portion of the tax revenue from cannabis to finance prevention and information policies, particularly in schools and among families and health workers, in order to detect addictive behavior earlier on.

### Cannabis and deprived neighborhoods

One of the fears associated with the legalization of recreational cannabis in France is the impact that it could have on certain neighborhoods. The loss of a financial windfall for French trafficking areas<sup>33</sup> could aggravate an already tense situation. There is also the fear that traffickers may turn to other forms of trafficking, causing even more serious disruption to public order. However, the few economic and sociological studies conducted on the subject undermine these arguments, showing that these neighborhoods suffer more than they gain from the cannabis economy.

Field surveys show that cannabis trafficking represents only a marginal share of the inhabitants' income. The vast majority of people in so-called "sensitive" neighborhoods have no desire to have anything to do with drug money and live off legal incomes. Cannabis trafficking does not contribute to the development of the local economy. Rather, it contributes to the impoverishment of these areas by damaging the environment (vandalism, theft, appropriation of public space by violent individuals and criminal organizations, etc.) and keeping the young people in these disadvantaged neighborhoods stuck in low-paid, illegal jobs. The low-level players ("cutters," dealers, lookouts, minders, etc.) derive only a small remuneration from their involvement in trafficking, most of them getting barely above the SMIC (minimum wage).<sup>34</sup> In addition, they are exposed to a high level of violence caused by a deregulated competitive environment between criminal networks, which is maintained by prohibition. Heads of criminal networks, large importers, and money launderers get incredibly rich at their expense.<sup>35</sup> The latest work on the subject emphasizes the increased professionalization of these cannabis resale organizations. They estimate that, in metropolitan France alone, 200,000 people work for them occasionally or full-time.<sup>36</sup> The vast majority of the profits generated by this sector seem to end up in foreign accounts

<sup>31</sup> Richard J-B., C. Palle, R. Guignard, V. Nguyen Thanh, F. Beck, and P. Arwidson (2015): "La consommation d'alcool en France en 2014", *Évolutions*, no 32, April.

<sup>32</sup> See Hill C. and A. Laplanche (2005): "Évolution de la consommation de cigarettes en France par sexe, 1900-2003", *BEH*, no 21-22, pp. 94-97.

<sup>33</sup> Often in "zones urbaines sensibles" (ZUS) (sensitive urban zones), frequently referred to in French as "cités" or "quartiers."

<sup>34</sup> Gandillon M. (2016): "Les drogues illicites en France : un marché en forte croissance", *Sécurité Globale*, vol. 5, pp. 29-36.

<sup>35</sup> Duport C. (2016): "De l'argent facile", *Mouvements*, vol. 86, no 2, pp. 71-79.

<sup>36</sup> Ben Lakhdar C., N. Lalam, and D. Weinberger (2016): *L'argent de la drogue en France. Estimation des marchés des drogues illicites*, INHESJ, MILDECA, Report to the French Prime Minister.

and the proportion that remains in the neighborhoods where the trafficking takes place is minimal.

By carefully supervising the legalization process, the (overestimated) risk of destabilizing the economy in trafficking areas can be effectively prevented. In all the US states that have opted for legalization, part of the tax revenue is dedicated to preventing and managing problematic cannabis use and to helping populations that in the past could make marginal profits from trafficking (large traffickers are still being pursued). Part of the tax revenue should therefore be earmarked for urban policy and education in sensitive urban areas, with the aim of reintegrating populations living in the subsistence economy currently offered by cannabis into a non-violent, legal economy.<sup>37</sup> One may also consider erasing the criminal records of low-level players, such as lookouts or cutters, who have not committed any violence, in order to facilitate their reintegration.

In the event of legalization, heads of networks will certainly seek to develop other criminal markets, but their options are limited. For example, cocaine, the second largest source of profit on the drug market in France, has a very low prevalence compared to cannabis, and the same is true for heroin and designer drugs. They are often expensive and they are much more dangerous and addictive than cannabis, which explains why few people want to use them. There are only a few hundred thousand users of these drugs, compared to several million for cannabis. It is hard to see how such small markets would be able to replace the cannabis trade. Finally, the redeployment of police forces, which could focus on fighting the heads of criminal networks, would help restore the credibility and effectiveness of their actions and their relationships with the populations currently living in trafficking areas.<sup>38</sup>

**Recommendation 5.** Use part of the tax revenue from cannabis for urban policy and education in trafficking areas. Support the reintegration of low-level players involved in illegal networks into legal jobs. Intensify the crackdown on the heads of networks.

## A cannabis sector in France? Activity, employment, and tax revenue

Although we do not believe that it should be a priority objective of the reform, the legalization of cannabis will also lead to the creation of a sector with positive economic and industrial impacts in France. This is particularly true since, as it is still subject to prohibition (*via* the UN conventions that have not yet been repealed), the international trade of cannabis is banned, particularly at the European level. Consequently, the market will be protected from foreign competition: the production and sale of recreational cannabis in France will be exclusively French. This will generate new legal jobs by creating new agricultural activities and new businesses.

While it is not possible to determine with great accuracy the economic consequences of the creation of such a sector in terms of activity, employment, and tax revenues, experiences abroad and existing data for France enable us to make realistic projections.<sup>39</sup> It is a challenge to precisely gauge the current level of cannabis consumption in France. Given its illicit nature, we can only estimate it through demand, which is inferred through consumer surveys. However, the most recent estimate is based on old data (2005) and results in a total of 276.6 tons per year.<sup>40</sup> In addition, respondents tend to underestimate their consumption of psychotropic substances (this is the case, for example, with alcohol and tobacco, where declarations are systematically lower than consumption). It is therefore necessary to update the 2005 figures to reflect the increase in the number of users over the last fifteen years, as well as the increase in consumption per user. Thus, we estimate that for 2017 a total consumption of 500 tons is a reasonable amount. In addition, this quantity would very likely increase if cannabis were to be legalized.

On the supply side, we use feedback from recent foreign experiences of legalizing cannabis. As the cost of production of cannabis is less than 1 euro per gram, a retail price excluding tax of 5 euros would provide a satisfactory remuneration to producers and distributors.<sup>41</sup> The current selling price of illegal cannabis is 11 euros according to the OFDT. This difference therefore makes it possible to impose an excise duty of 50% and a VAT of 20%, to arrive at a price including

<sup>37</sup> Ben Lakhdar and Costes (2016).

<sup>38</sup> Mouhanna C. (2011): *La police contre les citoyens ?*, Champ Social.

<sup>39</sup> See Geoffard, Beuve, and Fize (2019).

<sup>40</sup> Ben Lakhdar and Kopp (2018).

<sup>41</sup> In the United States, the wholesale selling price ranges from 1.33 dollars per gram in Oregon to 4 dollars in Nevada. See Obradovic I. (2019): "La légalisation du cannabis aux États-Unis. Vers une régulation du marché ?", *Note de l'Observatoire français des drogues et des toxicomanies* (OFDT), 2019-01, June.

tax of 9 euros per gram. Applying this price to the estimation of 500 tons gives a tax revenue of 2 billion euros. It would also be possible to adjust this level of taxation according to the type of product (herbal cannabis, resin, derived products, etc.) or the THC content: for example, charging up to 12 euros per gram for products with a higher THC content, along the lines of the different levels of excise duty for beer, wine, and hard liquor.

The fiscal gains associated with job creation are also difficult to estimate. Using estimates from the data from California and Colorado, we formulate two scenarios ranging from 55 to 114 jobs created (direct, indirect, and induced) per ton produced, giving a total of 27,500 to 57,000 jobs. If these jobs are paid at a rate of 1.2 SMIC, the total amount of social security contributions collected would be between 250 and 530 million euros. It should be noted that although these estimates are speculative, they likely represent a lower bound. Indeed, estimates of demand (certainly biased by under-reporting) and tax revenue are likely to be underestimated. According to an alternative sales scenario of 700 tons per year (corresponding either to an underestimation of current demand or an increase in demand following legalization), the tax revenue would represent 2.8 billion euros, with social security contributions of between 360 and 740 million euros, and the creation of between 40,000 and 80,000 jobs in the sector.

All the observations in this *Note* have been based on the important work of researchers, specialized institutions such as the *Observatoire français des drogues et des toxicomanies* (OFDT, French Monitoring Center for Drugs and Drug Addiction) and the *Institut national des hautes études de la sécurité et de la justice*, (INHESJ), French Institute for Advanced Security and

Justice Studies), and on recent feedback from experiences abroad. In the case of legalization, it would be essential to strengthen the statistical monitoring of the market. This would make it possible to develop a more regular (existing surveys are annual) and detailed knowledge of consumption (for example, being able to distinguish between moderate and extreme daily consumption) and to be better able to adapt to market changes.

**Recommendation 6. Strengthen the statistical monitoring of consumption and production in order to be better able to adapt to potential market changes.**

The creation of the cannabis sector represents a growing economic challenge. In addition to therapeutic and recreational cannabis, other economic actors have a strong interest in this product. Whether in the pharmaceutical, cosmetics, tobacco, or beverage sectors (alcoholic and non-alcoholic), many companies are investing in cannabis. Several countries, such as Canada and Israel, are encouraging the development of this sector and further research on cannabis. France is currently stationary in both areas and is falling behind on both fronts. This is all the more regrettable as France is one of the largest hemp producers in the world, with 16,400 hectares in 2016.<sup>42</sup>

As the situation around the world regarding the legalization of recreational cannabis is changing rapidly, the time has come for France to adopt a pragmatic and firm regulation policy that will allow it to take back control. ●

<sup>42</sup> See InterChanvre (2017): *Plan filière de l'interprofession du chanvre*, Plan submitted to the French Ministry of Agriculture.

 <b>conseil d'analyse économique</b>		<b>The French Conseil d'analyse économique (Council of Economic Analysis) is an independent, non partisan advisory body reporting to the French Prime Minister. This Council is meant to shed light upon economic policy issues, especially at an early stage, before government policy is defined.</b>	
<b>Chairman</b> Philippe Martin <b>Secretary General</b> Hélène Paris <b>Scientific Advisors</b> Jean Beuve, Clément Carbonnier, Claudine Desrieux <b>Research Officer/Economist</b> Samuel Delpeuch, Étienne Fize	<b>Members</b> Yann Algan, Emmanuelle Auriol, Stéphane Carcillo, Gabrielle Fack, Élise Huillery, Sébastien Jean, Camille Landais, Philippe Martin, Thierry Mayer, Anne Perrot, Thomas Philippon, Corinne Prost, Xavier Ragot, Katheline Schubert, Claudia Senik, Stefanie Stantcheva, Jean Tirole, Farid Toubal <b>Associated Member</b> Dominique Bureau	<b>Publisher</b> Philippe Martin <b>Editor</b> Hélène Paris <b>Electronic Publishing</b> Christine Carl <b>Contact Press</b> Christine Carl Ph: +33(0)1 42 75 77 47 christine.carl@cae-eco.fr	
<b>TSA 20727 75334 PARIS Cedex 07 (France)</b>		<b>Ph: +33(0)1 42 75 53 00</b>	<b>Fax: +33(0)1 42 75 51 27</b>
		<b>@CAEinfo</b>	<b>www.cae-eco.fr</b>