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Metaforum position paper 16

Time for a New Belgian Policy on Cannabis?

Evaluations, Options and Recommendations

Position paper working group Metaforum, presented at the symposium of 22 March 2018

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1. INTRODUCTION

Given the limited scientific knowledge of the day, it is understandable to a degree that the architects of the current international enforcement regime on drugs believed sixty years ago in the concept of total eradication of drug production and use. Nowadays, however, it is impossible to ignore the scientific insights and experiences that have been acquired since then in this regard: it is impossible to reduce production and trafficking in illegal drugs and their consumption on a global scale, and certainly not within the border-free European Union. In other words: the global 'war on drugs' launched in the 1980s cannot be won and only serves to create additional problems such as corruption, violence and illegal drug revenue in a number of countries worldwide (e.g. Paoli, Reuter & Greenfield, 2009). For decades, debate surrounding alternative regulatory models has been suppressed with the argument, among others, that international agreements and obligations do not permit it (Van Dijk, 1997). But after years of apparent immobility, several countries are presently engaged in an active search for ways to abandon the 'war on drugs' path – especially with respect to cannabis. A significant change of course via established international accords is unlikely in the short term because consensus is necessary in this regard and a number of traditionally exceptionally repressive countries might be inclined to obstruct already complicated procedures (Bewley-Taylor, 2003; Hall & Lynskey, 2009). Moreover, international organizations such as the United Nations (via the activities of the *International Narcotics Control Board*) – in addition to the European action plans – steer consistently in the direction of a uniform and strict approach to the drugs phenomenon. (Boekhout van Solinge, 2002; Roberts et al., 2005; Blom, 2006; Van Kempen & Fedorova, 2014).

In the meantime, many countries are well aware that the points of departure of the 'war on drugs' can only be disavowed on the basis of a policy realignment at the local and national levels, in particular when it comes to cannabis (Levine, 2003; Teurlings & Cohen, 2005; Chatwin, 2007). More and more countries, regions and cities have been testing the flexibility of the international agreements because they want to gain deeper insights into the complex character of the drugs phenomenon and potential strategies to deal with it (Bewley-Taylor, 2003; Roberts et al., 2005). They are no longer willing to wait and see what will happen in terms of the revision of international accords and agreements, but are determined by contrast to develop a policy without delay that will allow them to get a grip of the phenomenon and its problematic dimensions (Bewley-Taylor, 2003).

Uruguay and several American states (e.g. Colorado and Washington) have already opted for a regulation of the entire cannabis market, which Canada has announced that it plans to do the same in the summer of 2018. The Dutch coalition agreement of October 2017 allows for an experiment whereby a number of large municipalities are permitted to stock local Coffee Shops via government regulated cannabis production. The authoritative *Global Commission on Drug Policy* (members including Javier Solana, George Schultz, Kofi Annan, Richard Branson and the former presidents of Brazil, Chile, Colombia, Greece, Mexico, Poland and Portugal) has advocated uninterruptedly for an end to the global 'war on drugs' since June 2011 (Global Commission on Drug Policy, 2011). In Europe, countries such as Portugal, Switzerland and the Czech Republic have already implemented important reforms in terms of decriminalization.

Support is likewise evident in Belgium for the reform of existing cannabis policy. In a vision statement from November 2013, three members of the Metaforum working group – Tom Decorte, Jan Tytgat and Paul De Grauwe – called for a critical evaluation of Belgian cannabis policy, almost twenty years after the 1997 report and the recommendations of the parliamentary working group, and more than ten years after the publication of the Federal Policy Paper on Drugs (19 January 2001). The three proposed a 1) a critical evaluation of the results and unintended consequences of Belgian cannabis policy; 2) an end to the criminalization and stigmatization of people who use cannabis and do not harm others; 3) the deconstruction of the repressive approach and the deployment of budgetary resources that become available as a result to establish a collection of measures that discourage demand; 4) a serious analysis of the policy options of a regulated cannabis market; and 5) experimentation with models for the legal regulation of cannabis (Decorte *et al.,* 2013, p. 3).

The proposal attracted a degree of media interest and triggered both positive and negative reactions. Strikingly, the message contained in the academic vision paper did not go unnoticed. In 2014, the Association for Alcohol and other Drug Problems (*De Vereniging voor Alcohol- en andere Drugproblemen* - VAD), an umbrella organization consisting of almost 80 organizations active in the domain of alcohol and drug problems, published an *'Exploratory Note on Cannabis Policy – Probleemverkennende nota cannabisbeleid*' (VAD, 2014). The VAD's note (rightly) insisted that cannabis is not an innocent product. The majority of Belgians do not use it, and the maintenance of this status quo needs to be supported by investment in prevention, early intervention and the reinforcement of the societal 'non-use' norm. At the same time, however, the VAD's note also insisted that the use of cannabis by adults for health purposes should be removed from the criminal domain. Current legislation does not contribute to public health but tends on the contrary to have a negative effect at the level of stigmatization and criminalization. Present legislation, moreover, contributes to a state of legal uncertainty. In addition, counsellors observe that prosecution rarely contributes to recovery. The VAD's note argues for regulation of the availability, the composition and the price of cannabis. In 2014, sister organizations FEDITO Brussels (an umbrella group bringing together 26 organizations specializing in drug prevention and counselling) and FEDITO Wallonia (which represents 51 specialized centres and organizations from the drug sector) took a step further in their respective policy notes, arguing unequivocally for the regulation of cannabis. A number of cautiously positive responses also emerged from the political world, in addition to rejections from Vlaams Belang (right-wing populist) and Jo Vandeurzen, the Flemish minister for Welfare, National Health and Family (CD&V – Christian Democrat). In response to a parliamentary question posed by Green party politician Freya Piryns and occasioned by 2013 the vision paper, the then Federal Health Minister Laurette Onkelinx stated: "the policy of infringement prosecution with respect to the production and trafficking in narcotics in general is facing the limitations of an organized and fast reacting criminal world. We have to reflect continuously on new means to improve our drug policy. The proposal from the academics should be analysed in this context to determine whether it is opportune." Jong VLD (Young Liberals - Flemish), Jeunes MR (Young Liberals – Walloon), Jong Groen (Young Greens), PvdA+ (Workers' Party) and the Jongsocialisten (Young Socialists) openly supported the idea of regulating the cannabis market. In February 2014, the Young Socialists even succeeded in convincing the majority of party activists to include the regulation of cannabis in their party program.

At the end of October 2014, criminologists Brice De Ruyver and Cyrille Fijnaut reacted in book form with their *The Third Way. Appealing for a Balanced Cannabis Policy – De derde weg. Een pleidooi voor een evenwichtig cannabisbeleid*. In the Belgian daily *De Standaard* of October 31 2014 they made the following somewhat surprising statement: "A policy that gives priority to national health, reinforces the maintenance of law, and endeavours to keep economic interests at bay, can make room for a limited, regulated supply (Delepeleire, 2014). In the book itself they write: 'If we examine a cross-section of legalization experiments being conducted in the Americas and of current concrete developments in the European Union, three forms of cannabis cultivation and consumption emerge that are not only in line with the space foreseen by the United Nations' drugs accords for the personal possession and use of cannabis, but are also de facto accepted in a several variants in a number of American nations and European states: small-scale private cultivation for personal use, clubs for cultivation and use, and the provision of medical cannabis for patient use. In other words, these three forms of cultivation and consumption are tending more and more to constitute a common ground of an international cannabis policy that focuses in the first instance on national health." (Fijnaut & De Ruyver, 2014, p. 263).

In December 2016, professors Tom Decorte, Jan Tytgat and Paul De Grauwe published a concrete and detailed scenario for the introduction of a regulated cannabis market in Belgium. Their proposal was designed to be an initial step towards an inclusive social, political and academic debate.

With the present report, the Metaforum working group on Cannabis Policy has built on prior debate and in particular on the work of Decorte, Tytgat and De Grauwe (2013). To this end it has benefited from the multidisciplinary expertise of its 15 members who are active in a variety of social and natural science disciplines, including criminology, economics, psychology, politics, hepato-gastroenterology and psychiatry, and toxicology. Since its formation in 2014 under the leadership of Prof. Letizia Paoli and Prof. Tom Decorte (Ghent University), the group has met on ten occasions, developing the present report on the basis of presentations and internal debate. The goals of the report are the following:

- To provide a succinct synthesis of the scientific literature on the characteristics of cannabis and the effects of cannabis use (chapter 2);
- To provide an overview of the prevalence of cannabis use in Europe and particularly in Belgium (chapter 3);
- To provide a reconstruction of Belgian cannabis policy (including the goals and results thereof) and evaluate its effectiveness (chapter 4);
- To reconstruct the evolution of the international cannabis regime and provide a description of planned and already implemented reforms in various jurisdictions (chapters 5 and 6);
- An exploration of the lessons to be drawn from the regulation of alcohol and tobacco – the two most important legal psychoactive products (chapter 7);
- To weigh the advantages and disadvantages of the various regulatory models located between the two extreme options (complete prohibition and a complete commercial free market with few government regulations) (chapter 8);
- To formulate a number of recommendations on Belgian cannabis policy (chapter 9).

A draft version of the report was presented to a group of twenty individuals representing drugs policy, social and medical services, the judicial system, and a selection of cannabis social clubs. Their written observations, suggestions and improvements were collected during two roundtable discussions on July 5 and September 5 2017. We are most grateful to these stakeholders for their feedback, which has clearly strengthened and reinforced the report. The authors remain responsible nevertheless for the content of the text, not only for the analyses and recommendations, but also for any potential inaccuracies or errors that may have gone unnoticed in spite of the many editorial revisions.

2. CANNABIS: WHAT IS IT AND HOW DOES IT WORK?

By way of introduction, the present chapter offers a succinct response to the questions: 'what is cannabis?', 'what products are derived from cannabis?', and 'how does cannabis work?' The discussion focuses first on the plant and its chemical structure, then on the carious products made from cannabis, and finally on its effects. While the following paragraphs may appear somewhat technical, they remain relevant with respect to a number of arguments that will be developed later in the report. A degree of insight into the composition of cannabis (e.g. the amount of THC, CBD and other cannabinoids present in the product), for example, is important for societal debate concerning the strength and quality of cannabis and its medicinal application (*versus* recreational use). For a reader lacking any background in chemistry, toxicology or medicine, the present chapter may be more difficult to digest, but arguments are sometimes raised in social and political debate that hold little if any water when confronted with scientific insights into the composition, function and effects of cannabis. It is for this reason that we have consciously opted for a detailed explanation. This introductory chapter has made use of the excellent 'Cannabis Dossier - *Dossier cannabis'* prepared by the Vlaams Expertisecentrum Alcohol en andere Drugs (Vanmarcke, 2013).

A. THE PLANT AND ITS CHEMICAL STRUCURE

Cannabis belongs to the Cannabaceae family that consists of three sorts, namely: *Cannabis Sativa*, *Cannabis Indica* and *Cannabis Ruderalis* (Vanmarcke, 2013). Only *Cannabis Sativa* and *Cannabis indica* are used as intoxicants (Vanhove et al., 2011). In the Netherlands, the latter are referred to as 'hennep' or 'kemp'. The cannabis plant is dioecious, which means that the male and female flowers grow on different plants (Vanhove et al., 2011). The female plant is usually densely-branched and can grow up to three or four meters in the wild while the male plant has fewer branches and is mostly much smaller (Niesink & van Laar, 2012).

The cannabis plant is composed of more than five hundred chemical substances (Vanmarcke, 2013). The substances that only occur in cannabis (60-100 of the 500) are referred to as cannabinoids (Wishnia, 2005; ElSohly & Slade, 2005, Console-Bram et al., 2012). Based on their origins, scientists distinguish nowadays between three groups of cannabinoids: (a) phytocannabinoids, which we find in the plants; (b) endocannabinoids, which occur in the human body; and (c) synthetic cannabinoids, which are developed in a laboratory (López-Moreno et al., 2008; Vardakou et al., 2010). While endocannabinoids already occur in the body and are thus referred to as endogenous, both phytocannabinoids and synthetic cannabinoids are exogenous because they are introduced into the body.

The best-known phytocannabinoid present in the cannabis plant is called delta-9-tetrahydrocannabinol (better known as g THC) and is responsible for the psychoactive effect of cannabis (Vanmarcke, 2013). Other phytocannabinoids include: cannabigerol (CBG), cannabidiol (CBD) and cannabinol (CBN). These substances have a much milder psychoactive effect and sometimes none at all, and can either inhibit the effect of THC or enhance it (Kerssemakers et al., 2008; Pertwee, 2008). CBD, for example, has no hallucinogenic properties and, in contrast to THC, suppresses feelings of anxiety. It can be used as an antipsychotic, to reduce pain, and to promote relaxation. CBD can also reinforce a sense of euphoria because it slows down the metabolization of THC in the liver (Murray et al., 2007; Earlywine, 2002, Bergamaschi et al., 2011).

Cannabis products that are manufactured illegally often contain a large amount of THC (the psychoactive component) and too little CBD (the antipsychotic component; see EMCDDA and Europol, 2016: 57 and 69), and are thus more dangerous when compared with legal cannabis products that are subject to various regulations (such as the presence of a maximum amount of THC and a minimum amount of CBD).

B. NATURAL VERSUS SYNTHETIC CANNABIS PRODUCTS

The amount of THC is not distributed throughout the plant in a homogenous way but concentrated rather in the female flowers, which in their turn do not always contain the same quantity of THC (Vanmarcke, 2013). The female cannabis plants thus tend to be produced in greater quantity for the purpose of manufacturing stimulants and medicines (Wishnia, 2005; VAD, 2003; Baker et al., 2003; Kerssemakers et al., 2008; Niesink & Rigter, 2012).

The cannabis plant can be subdivided into three categories: (i) the seeds and the stems, (ii) the leaves and the flowers, and (iii) the resin (Wishnia, 2005). Each component part is used in the manufacture of different products:

- **Hemp** refers to the industrial exploitation of the cannabis plant, which can clearly be distinguished from its medical and recreational applications. The most familiar uses of hennep include the processing of fibers to make paper, rope, and textiles (clothing, canvas, sails). Hemp seeds are often used in birdseed. Other less familiar applications of fiber hennep include plastics, fuels (hennep oil), insulation materials, and stable and cage flooring for animals. Smoking hemp does not lead to a 'high' since the plants cultivated for their fibres contain very little THC (Wishnia, 2005; VAD, 2003).
- **Marihuana** refers to the flowers and upper leaves of the female hemp plant. When dried and crumbled one is left with weed or marihuana. Weed has a characteristically strong odour and its colour varies from grey-green to green-brown (Wishnia, 2005; VAD, 2003).
- **Hash** is made from the resin on the plant and is produced by cooling the flowers and shaking them through a sieve. Grains of resin from the flowers then fall through the sieve and are pressed or kneaded into slabs or blocks of hash. The result is a substance varying in colour from light brown to black resembling a stock cube. As a rule, hash is stronger than marihuana, but purity and level of resin content differ (Wishnia, 2005; VAD, 2003).
- **Hash Oil**: Using a special process, a highly concentrated substance can be distilled from the plant, namely h**ash oil**. The latter is a viscous, dark coloured, sticky fluid that contains a very high concentration of is THC. It is acquired via alcoholic distillation. (Wishnia, 2005; Kerssemakers et al., 2008).

In addition to the above there is also a synthetic form of cannabis, which is made in a laboratory and does not come from the *Cannabis Sativa* plant (Vanmarcke, 2013). Synthetic cannabis was originally developed for medical purposes (Vardakou et al., 2010). In 2006, a number of chemists at Clemson University published their research into the development of anti-inflammatory drugs, to which end they produced, among other things, hundreds of synthetic cannabis sorts, including one named JWH-018. While the development of synthetic cannabis products led to further research in academic and industrial laboratories, it also witnessed the appearance of synthetic cannabis products on the illegal market (with names such as Spice, Black Mamba, Exodus Damnation), manufactured for the most part by illegal laboratories in China, Eastern Europe, and Asia.

The synthesis of THC for medical applications in academic and industrial laboratories faced problems in the initial stages since it was difficult to separate the desired characteristics of THC (nausea suppression, pain relief) from the psychoactive effects (the 'high'). The studies in question contributed, nevertheless, to a better understanding of the structure of the THC molecule (Iversen, 2000). At the beginning of the 1980s, Pfizer discovered the first powerful synthetic THC with an analgesic effect. Subsequently, other researches succeeded in synthesizing additional cannabinoids. In the meantime, synthetic Δ9-THC – or Dronabinol – has been recognized in the US as a treatment for nausea and vomiting among cancer patients and as an appetite stimulator for people with AIDS (Howlett et al., 2004).

Street variants of synthetic cannabis are marketed as 'Spice Gold', 'K2' among other names, or as a mixture of herbs or potpourri that is 'not intended for human consumption'. When these substances are smoked the effects are similar to those produced by cannabis. Chemical analysis of these products has demonstrated that their

psychoactive effects are a result of added synthetic cannabinoids, which have effects comparable to those of THC (THC analogues) (Vanmarcke, 2013). The quantity and combination of these synthetic cannabinoids differs from product to product. Psychoactive components are mostly stronger in synthetic cannabis than in the natural product (Vardakou et al., 2010; Fattore & Fratta, 2011; Gunderson et al., 2012). Synthetic cannabinoids are also known under terms such as 'New Psychoactive Substances' (or NPS) or 'legal highs', because they were initially not included on lists of forbidden products or marketed via unregulated channels on the Internet. Between 2008 and 2014, more than 130 new cannabinoids were reported to the European Early Warning System. These new cannabinoids thus constitute that largest category among the NPS (EMCDDA, 2015b).

C. HOW CANABIS WORKS

To understand the effects of psychoactive substances (like cannabis or other illegal drugs, but also certain prescription medicines) in the human body it is important to be aware of a number of biochemical processes, in particular the functioning of the receptors. Receptors are proteins in the cell membrane, the cytoplasm or the cell core to which a specific molecule can attach itself. Receptors can pass on signals from inside or outside the cell: when a signal molecule attaches to a receptor, the receptor can initiate a cellular response. Both endogenous substances (such as neurotransmitters, hormones and cytokines), and exogenous substances (such as antigens and pheromones) can stimulate such a cellular response.

The effects of cannabis can be localized in the endocannabinoid system (Vanmarcke, 2013). This is a complex system that plays an important role in regulating numerous physiological and pathological processes such as immune response, dietary intake, cognitive processes, emotion, perception, reward, motor coordination, body temperature, and sleep rhythm (Niesink & Van Laar, 2016; Youssef & Irving, 2012; Di Marzo, 2009). The endocannabinoid system contains at least two cannabinoid receptors (CB1 and CB2) and consists of at least five endocannabinoids (De Petrocellis et al., 2009). Moreover, it is one of the most important neuromodulators of the central and peripheral nervous system and plays a crucial role in mediating the release of neurotransmitters and cytokines (López-Moreno et al., 2008; Di Marzo, 2009).[1] When a cannabis product is used, THC is absorbed into the blood (Vanmarcke, 2013). The (THC-rich) blood is pumped through the body and finally reaches the brain where THC attaches to specific proteins, namely the cannabis receptors. The presence of these cannabis receptors implies that there are natural cannabinoids that attach to these proteins under normal circumstances, namely the endocannabinoids (Kerssemakers et al., 2008).

I. CANNABINOID RECEPTORS

The widespread distribution of CB1 receptors in the brain is responsible for a variety of physiological and psychotropic effects of cannabis (e.g. physical dependence, high) (Youssef & Irving, 2012; Seely et al., 2011; Fisar, 2009). The CB1 receptor – discovered in 1988 – occurs almost exclusively within the central nervous system (CNS, i.e. brain and spinal cord). In addition, CB1 receptors can likewise be found in the peripheral nervous system (PNS).

The CB2 receptor was discovered a few years later (in 1993) and is principally found in the immune cells (e.g. in the spleen, the tonsils, and in tissue responsible for the production and regulation of immune cells). Recent

[1] Cytokines are protenes that serve as chemical messengers between the cells of the body. Many if not all of the body's cells can produce one or more cytokines. The latter play an important role among other things in the coordination of resistance to disease. For cytokines to fulfil their messenger function, other cells need to be extremely sensitive to be able to detect such small amounts (picograms per millilitre). To this end, the cells in question are equipped with receptors protenes on their surface. Each cytokine attaches itself exclusively to its own receptor because it recognises certain structures thereof. A cytokine belongs to its receptor like a key in a lock. The coupling of cytokine and receptor starts a chain reaction in the cell whereby the latter quickly fulfills its task.

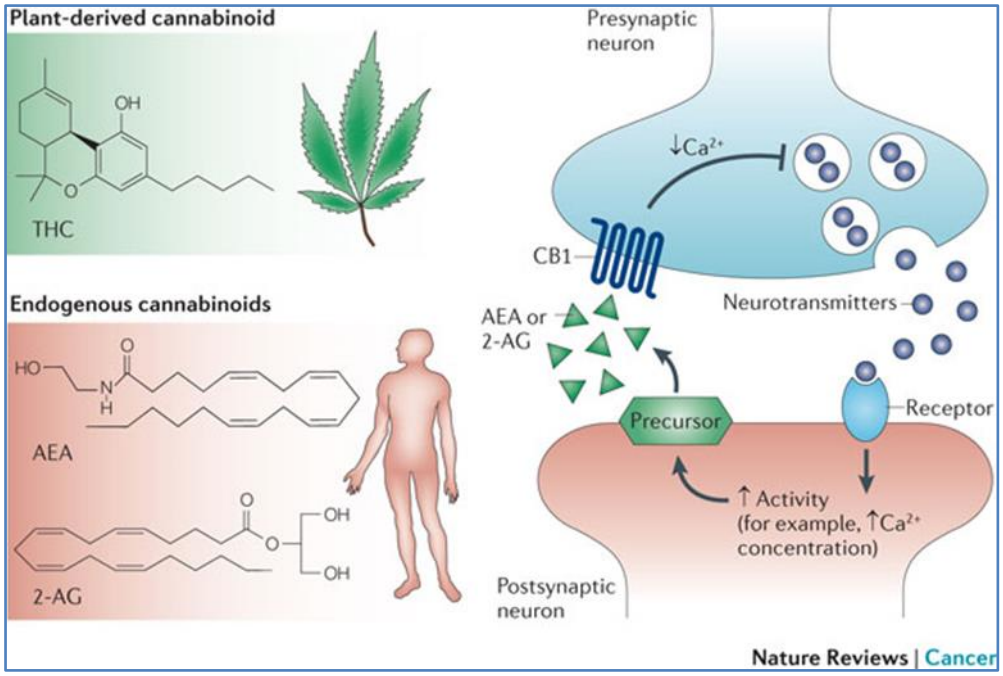
studies show that the CB2 receptor is also to be found in the CNS and in peripheral tissues. CB2 receptors play an important role in the treatment of neuro-inflammatory conditions that affect the CNS (such as meningitis, encephalitis, myelitis and multiple sclerosis (Youssef & Irving, 2012; De Petrocellis et al., 2009; Fisar, 2009).

An array of cannabinoids can attach themselves to the cannabinoid receptors. After attachment, the cannabinoid receptors can have an effect on a variety of physiological processes, such as pain modulation, memory, appetite, and the immune system (Youssef & Irving, 2012).

II. ENDOGENOUS AND EXOGENOUS CANNABINOIDS AND THEIR EFFECT ON OUR BODY

The existence of cannabinoid receptors implies that endogenous cannabinoid neurotransmitters (endocannabinoids or naturally occurring cannabinoids) are present in the body, which attach to the said receptors under normal circumstances to produce or inhibit biological reactions. At least five such endocannabinoids have been discovered, but Anandamide (AEA) and 2-Arachidonoylglycerol (2-AG) have been most extensively studied.[2]

Figure 1 Endogenous and exogenous cannabinoids



Source: Velasco, Sánchez & Guzmán, 2012.

The endocannabinoid system is involved in a number of different pathologies, including obesity, cardiovascular illnesses and neurological conditions. Endocannabinoid concentrations can fluctuate in the course of an illness. It remains unclear nevertheless whether such fluctuations are advantageous or not in the course of an illness (Seely et al., 2011).

As observed above, phytocannabinoids and synthetic cannabinoids are exogenous, i.e. they are introduced into the body. Like endocannabinoids, exogenous cannabinoids have an effect on the CB1 and CB2 receptors.

The effect is determined not only by the amount of THC, but more importantly by the proportional presence of the different cannabinoids (Murray, 2007). The higher the amount of THC and the lower the amount of CBD, for

example, the higher the risk of psychotic effects. CBD is reported to have an inhibitive effect on the psychotic symptoms induced by THC (Niesink & van Laar, 2012). Similarly, CBD is reported to partially suppress the anxiety and panic inducing effects of THC. In other words, CBD can have an influence on a number of the effects of THC (Niesink & Rigter, 2016). Bearing this in mind, the fact that the cannabis produced and sold on the black market now contains more THC and less CBD than in the past can only be described as a worrying evolution (EMCDDA and Europol, 216: 69). We will return to this trend and the consequences thereof later in the present report.

III. INHIBITORY AND EXCITATORY NEUROTRANSMITTERS

Neurotransmitters are chemical messengers or molecules that transmit nerve impulses between nerve cells ('neurons') in the nervous system, between motoric nerve cells and muscle cells, and between nerve receptors and sensory nerve cells, via the so-called synapses or contact area between two cells. Neurotransmitters such as GABA and glutamate, for example, are thus important for our understanding of the functioning of the endo-cannabinoid system. GABA (Gamma-amino-butyric acid) inhibits the release of dopamine. When a user uses cannabis and THC is introduced into the brain, the THC blocks the GABA neurotransmitters and as a result more dopamine is released. Glutamate, on the other hand, stimulates the release of dopamine. If THC blocks this neurotransmitter, less dopamine is released (Youssef & Irving, 2012).

What exactly happens after stimulation of the cannabinoid receptors thus depends on the place of the receptor in the excitatory or inhibitory neural circuit that is being stimulated (Baker et al., 2003). Cannabinoids influence the activity of most neurotransmitters and also, in so doing, a large variety of functions. Their influence can be both stimulating (excitatory) and suppressive (inhibitory) (Pertwee, 1995). Occasionally paradoxical findings – e.g. that cannabis both suppresses *and* stimulates certain symptoms (such as convulsions and tremors) – are probably to be explained by the fact that the said symptoms are controlled by different neural circuits (Niesink & van Laar, 2016).

IV. THE INFLUENCE OF THE ENDOCANNABINOID SYSTEM ON THE DEVELOPMENT OF DEPENDENCE AND ABUSE

While the precise role of the endocannabinoid system is far from certain, research has demonstrated that it is significant in relation to dependence (Robledo et al., 2008; Lopez-Moreno et al., 2008; Youssef & Irving, 2012; Console-Bram et al., 2012). It mediates in processes of reward, memory and learning, emotions and emotional memory, inhibition, self-control and behaviour planning (Lopez-Moreno et al., 2008).

Given the fact that the body's cannabinoid receptors influence such a variety of bodily function, more and more potentially therapeutic applications are continually emerging (Niesink & van Laar, 2016). More research is thus necessary and desirable into the use of the endocannabinoid system in treating cannabis dependence (Clapper et al., 2009).

V. THC UPTAKE ACCORDING TO USE

The way in which phytocannabinoids and synthetic cannabinoids find their way into the blood and then into the endocannabinoid system depends on the way they are used. When inhaled, this takes place via the lungs, when ingested orally this takes place via the digestive system. The by-products of cannabis can remain in the body for weeks before they are expelled in the urine or faeces. As a result, a positive drug test might not always provide an accurate picture of the degree of intoxication at the time of the test (Vanmarcke, 2013). In what follows, we will briefly discuss a number of forms of inhalation (the classic 'joint', water pipe or 'bong', and the vaporizer), oral intake and a few other forms of intake. This summarizes the more extensive descriptions found in 'Cannabis

Dossier - *Dossier cannabis'* prepared by the Vlaams Expertisecentrum Alcohol en andere Drugs (Vanmarcke, 2013).

INHALATION

When smoked, THC is converted into a vapour. As it cools, the vapour condenses into tiny droplets of smoke, which are then inhaled. THC dissolves easily in body fat, whereby it is quickly absorbed by the lung membranes that offer a large absorption surface. THC thus finds its way into the blood that flows from the lungs to the heart and is then pumped via the veins to the entire body. As a result, the drug already penetrates the brain only a few seconds after the first inhalation and thereby reaches the cannabinoid receptors. Inhalation is thus the fastest and most potent form of intake. The effect lasts from two to four hours, the first two being experienced as a peak (Kerssemakers et al., 2008).

Cannabis products are mostly smoked in a joint (marihuana cigarette, reefer, …). A joint is a long cigarette, with our without filter, filled with pure cannabis or a mixture of tobacco and hash and/or weed (Kerssemakers et al., 2008). The average amount of THC absorbed in smoking cannabis varies from 15% to 50% (Fisar, 2009).

When compared with an unfiltered joint, users who opt for a water pipe or 'bong' inhale 30% more tar. Tar is indissoluble in water such that the smoke remains 'pure' in part, but THC is also indissoluble in water such that one has to smoke more cannabis to achieve the same effect than one would without the water pipe (Budbuddies, 2004).

Vaporizers heat marihuana to 200 °C whereby the cannabinoids vaporize. This temperature should be lower than the temperature at which carcinogenic substances burn. Users are thus able to inhale the vapour, which should ideally contain more THC and fewer pollutants and tar. In practice, however, vaporizers produce a vapour with an exceptionally low THC content and a large amount of cannabinol. As a result, an unfiltered joint generally contains a better THC ratio than a vaporizer. Nevertheless, the inhalation of a cooler vapour remains advantageous for the airways (Earlywine, 2002). While the use of vaporizers is not the ideal means to prevent cannabis induced lung problems, it is much better than the inhalation of cannabis via smoking a joint. The latter is medically unjustifiable since smoking cannabis is just as damaging as smoking tobacco.

ORAL INTAKE

Cannabis products can also be ingested in combination with various foodstuffs (e.g. cake, biscuits, tea, …). THC is not water soluble and is thus best ingested in fatty preparations. The journey such preparations have to make through the digestive system is a lengthy one, however, and most of the THC is quickly broken down in the liver before it enters the blood flow. Moreover, while THC tends to be fairly easily absorbed by the intestines, this process is slow and unpredictable. The fat content of the food preparation in question and whether other food has been ingested at the same time have an important role to play in this regard.

The effects of oral intake are felt one to four hours after ingestion (later than when inhaled) and it takes between four and eight hours before the user feels normal once again. Some users are inclined to ingest more food preparation because it takes such a long time for the effects to be felt. Such users often only realize that they have ingested too much when the THC finally starts to have an effect (Kerssemakers et al., 2008; Fisar, 2009).

OTHER FORMS OF USE

Within the framework of the medical use of cannabinoids, a great deal of research has been done into alternative therapeutic methods of application such as vaporizers, suppositories, sublingual tinctures (liquid drops for under the tongue), plasters, injectable solutions and eye drops (Groten-hermen, 2004). Since the present report is not focused in the first instance on the medicinal use of cannabis, we will not explore this avenue further.

D. EFFECTS AND RISKS OF CANNABIS

Having explained the biochemical action of cannabis (and cannabinoids) in the human body we can now explore that general physical and psychological effects and risks of cannabis. We will then turn our attention to the toxicity of cannabis and the risk of tolerance, dependence and abuse.

The majority of the physical effects of cannabis occur after heavy, chronic or regular use. Effects on heartbeat and blood pressure tend to be acute and dose related, whereby tolerance can develop when use is regular. Smoking cannabis carries serious risks for the health of the lungs and airways (Niesink and Van Laar, 2016). In addition to its effects on lung function, smoking cannabis exposes users to the potential risk of developing various sorts of lung, head and throat cancer, although continued research is still necessary in this regard (Maertens et al., 2013; Repp & Reich, 2014; Niesink and Van Laar, 2016). The total effect on the immune system has not yet been completely explained (Schatman, 2015; Grotenthermen, 2007; Bergamaschi et al., 2011). It is unlikely that the moderate use of cannabis by healthy individuals will lead to a disturbance of the immune system. Cannabis has an influence on the way we experience sexuality and when used in excess can have an albeit temporary and reversible negative effect on fertility (Du Plessis et al., 2015). While no unequivocal evidence has been found to support the idea that cannabis use produces structural changes in the brain (Koenders et al., 2016; Zalesky et al., 2012; Batalla et al., 2013), puberty nevertheless constitutes a critical period in the brain's development, making it particularly vulnerable to the effects of cannabis at this juncture (Niesink en Van Laar, 2016).

In addition to its physical effects, cannabis use can also result in undesired psychic effects. The latter tend as a rule to present themselves after heavy, chronic or regular use. In what follows we will explain the relationship between cannabis use and its effect on cognitive functions, psychotic disorders, and affective disorders.

Cannabis use disrupts our *cognitive functions* at a variety of levels, although research is not clear on whether the negative effect on the said functions is permanent or not. Where studies offer evidence that these effects are prolonged and persistent they tend to ascribe this in the first instance to the starting age of the user or to heavy and long-term use (Grotenthermen, 2007; Ehrler et al., 2015; Schatman, 2015).

The literature also draws a connection between cannabis use and *acute psychoses or psychotic disorders* such as schizophrenia (Niesink & van Laar, 2012; Moore et al., 2007; Radhakrishnan et al., 2014; Di Forti et al., 2015; Sachs et al., 2015). This connection is related to dosage (Marconi et al., 2016). Recent studies suggest that an acute psychosis can present itself in individuals who have no prior clinical history, although it is not clear if this is also the case for psychotic disorders. Cannabis use can lead to a sudden worsening or recurrence of existing psychotic symptoms, can accelerate the development of psychotic disorders, and have a negative influence on the course of existing psychotic disorders. The risk here goes hand in hand with the starting age of the user, the frequency of use and the vulnerability of the user. Researchers observe in particular that cannabis use during adolescence can increase the risk of developing schizophrenia later in life. They also suggest that cannabis use and schizophrenia appear to share the same etiological factors, which might point towards a disposition that can lead to both phenomena.

Research into *affective disorders* is relatively limited (Moore et al., 2007; Niesink and van Laar, 2016; Leite et al., 2015). Studies show a modest link between heavy, problematic cannabis use and depression, suicide and bipolar disorders, although the nature of the said link is not yet clear. On the other hand, no link has been demonstrated

between cannabis use and anxiety disorders or amotivational syndrome (Hall & Solowij, 1998; Karila et al., 2014)).

While the toxicity of cannabis is estimated to be lower than alcohol, damage as a result of cannabis use increases nevertheless in line with the amount, frequency and duration of exposure (number of years a person uses) (Niesink and van Laar, 2016). The age at which a person begins to use cannabis also has a role to play: the younger the user, the greater the risk of damaging effects. Serious intoxication can lead to a depression of the central nervous system and potential coma (Niesink & van Laar, 2012). It would appear to be impossible nonetheless for human beings to die from an overdose of THC. This is supported by studies on laboratory animals (rats, mice, dogs, monkeys) where 5000 times the average dosage of a cannabis user had to be administered in order to induce death (Iversen, 2000). Moreover, no single fatality has been recorded as a result of an overdose of THC (Fisar, 2009), although cause-of-death statistics from 2002 note the case of a woman who died of brain edema resulting from cannabis dependence (www.zorg-en-gezondheid.be).

Tolerance develops after chronic or repeated use. It does not present for all of the effects of cannabis, however, and tends to occur at different speeds and levels of intensity (Fisar, 2009). The development of tolerance unfolds in different ways for different regions of the brain (Pertwee, 2008). A mild tolerance for the effects of THC can develop among regular users, implying that they need to ingest more to achieve the same effect. Irregular cannabis users or those who use only small amounts would appear to develop little or no tolerance. Heavy cannabis users, on the other hand, sometimes present a negative tolerance or sensitization whereby they become more responsive to the impact of THC (Van Wilgenburg, 1994).

People who use cannabis intensively over a long period of time run the risk of becoming dependent. This risk is not the same for every individual (Carpenter, 2001). When compared with a number of other substances (e.g. nicotine) that involve a high risk of dependence, the risk of cannabis dependence tends to be lower (Iversen, 2000). Nevertheless, roughly half of those who use cannabis on a daily basis develop a dependence disorder (van der Pol, 2011).

Cessation of cannabis use can lead to withdrawal symptoms, which can be subdivided into ‘frequent’ and ‘less frequent’ (Budney, 2007; Fisar, 2009; Vandrey & Haney, 2009). The most frequently occurring withdrawal symptoms are relatively mild and manifest themselves without serious medical complications. They are certainly not to be compared with the severe physical symptoms occasioned by the abrupt cessation of alcohol or opiates (Niesink & van Laar, 2012; Budney, 2007). It would appear, moreover, that it takes several days for the withdrawal symptoms to manifest themselves when heavy cannabis use is abruptly ended. As a result, users often no longer ascribe the said symptoms to the cessation of cannabis use (Cooper & Haney, 2008).

According to the DSM-IV criteria (Diagnostic and Statistical Manual of Mental Disorders), the fact that an individual continues to use a certain substance in spite of significant problems related to its use is a necessary precondition for diagnosing dependence. In 2013, however, a new and completely revised edition of DSM – DSM-V – appeared. This new edition no longer alludes to dependence, but speaks rather of problematic cannabis use with severity rates ranging from ‘mild’ to ‘moderate’ to ‘severe’ (Niesink and van Laar, 2016). Criteria for withdrawal and dependence tended to be defined traditionally from a medical perspective whereby physical criteria were employed. A great deal of recent research has demonstrated that the primary characteristics of withdrawal tend to be emotional and behavioural symptoms related to neurobiological changes in the limbic system rather than physical symptoms (Niessink and van Laar, 2016). These specific symptoms represent a good predictor of dependence and relapse and are common for withdrawal from more or less every psychoactive substance. DSM-V includes reference to the cannabis withdrawal syndrome, which is lacking in DSM-IV (Niesink & van Laar, 2012).

E. MEDICINAL APPLICATIONS OF CANNABIS

We observed above that cannabis is not only used for recreational purposes (as an intoxicant), but can also be used for medicinal purposes (for therapeutic ends). It became evident in our description of the chemical composition of cannabis products and the biochemical processes that take place when cannabinoids find their way into the human body that cannabis can have a therapeutic effect on certain levels. Extensive research exists on the effects of cannabis and derivatives (compared with placebo) on a variety of symptoms and conditions. These studies are difficult to interpret because detailed information on the cannabis preparations employed is not always available. Some focus, for example, on the mouth spray *Sativex* (GW Pharmaceuticals). Each atomization of 100 microliters of this product contains 2.7mg THC and 2.5mg CBD. Other studies focus on tablets containing THC or inhaled marihuana. In most instances, characterization is limited to the THC content. Nevertheless, there is evidence that medicinal cannabis can serve as an effective treatment for certain conditions.

It has been demonstrated, for example, that cannabinoids are safe and moderately effective in the case of neuropathic pain (nerve pain) associated with Multiple Sclerosis (MS) (Lynch & Campbell, 2011; Langford, Mares, Novotna, Vachova, Novakova, Notcutt, Ratcliffe, 2013; Wilsey, Marcotte, Deutsch, Gouaux, Sakai, & Donaghe, 2013; Grotenhermen & Müller-Vahl, 2012). One studied revealed that MS patients who reacted positively to *Sativex* in the first ten weeks continued to enjoy this effect for a period longer than a year without having to increase the dosage (Wade, Makela, House, Bateman, & Robson, 2006). Moreover, cannabis for MS patients can have a positive effect on dysfunctional and overactive bladder with related urge-incontinence (Freeman, Adekanmi, Waterfield M., Waterfield A., Wright, & Zajicek, 2006; Kavia, Ridder, Constantinescu, Stott, & Fowler, 2010). Further research is necessary here, however, to chart potential long-term effects.

Cannabis has also been studied in relation to pain associated with cancer. Dosages that generate minimal side-effects can alleviate such pain (Johnson, Burnell-Nugent, Lossignol, Ganae-Motan, Potts, & Fallon, 2010; Johnson, Lossignol, Burnell-Nugent, & Fallon, 2013). Where the World Health Organisation's 'Pain Ladder' is followed without sufficient result, the WHO considers medicinal cannabis to be an add-on therapy in relation to cancer pain.

Medicinal cannabis has also been extensively tested in relation to nausea and vomiting following chemotherapy. Given the wide range of therapeutic possibilities available via classical medication, tests with medicinal cannabis have tended to focus on therapy resistant patients. Some studies demonstrate a positive effect for cannabis (Grotenhermen & Müller-Vahl, 2012; Meiri, Jhangiani, Vredenburgh, Barbato, Carter, Yang & Baranowski, 2007; Amar, 2006), while others do not (Strasser, Luftner, Possinger, Ernst, Ruhstaller, Meissner, Ko, Schnelle, Reif & Cerny, 2006).

The effect of cannabis on dietary intake also has an influence on wasting syndrome among people with HIV and helps to control weight loss (Haney, Gunderson, Rabkin, Hart, Vosburg, Comer, & Foltin, 2007; Haney, Rabkin, Gunderson, & Foltin, 2005).

In addition, positive effects have been registered in relation to Gilles de la Tourette Syndrome (Curtis, Clarke, & Rickards, 2009), rheumatoid arthritis (Blake, Robson, Ho, Jubb, & McCabe, 2006) and glaucoma (Tomida, Azuara-Blanco, House, Flint, Pertwee, & Robson, 2006). The studies, however, are not conclusive. In spite of the large number of studies, no well-designed large-scale reviews have been available thus far. The results of the first Cochrane Review in this domain are thus eagerly awaited (Smith & Jess, 2011).

In spite of the wide therapeutic margin (Grinspoon & Bakalar, 1995), the medicinal use of cannabis can have considerable side effects and this urges caution (Grotenhermen & Müller-Vahl, 2012; Wang, Collet, Shapiro, & Ware, 2008). Acute psychoactive effects including anxiety, panic and depression can present themselves, and

the danger of developing schizophrenia in sensitive patients is a real one. For this reason, psychosis is an absolute contraindication. Addition, likewise, cannot be excluded. Potential physical side-effects include tiredness, dizziness, orthostatic hypotension, tachycardia, loss of muscle tone, dry mouth and voracious appetite (Grotenhermen & Müller-Vahl, 2012; Wang, Collet, Shapiro, & Ware, 2008). Cannabis intake via smoking joints is medically irresponsible because smoking cannabis is just as damaging as smoking tobacco. To avoid the damaging effects of smoking, cannabis can be inhaled using a vaporizer that nebulizes the active components. Vaporizers pass hot air at 185 degrees over the cannabis. The resulting mist can then be inhaled via a tube or collected in a bag for later inhalation (Bureau voor Medicinale Cannabis, s.d.).

F. CONCLUSION

In this chapter we have reviewed a wide range of relatively complex and technical matters, which readers without a background in chemistry, toxicology or medicine might find difficult to digest. Nevertheless, this is 'technical' background knowledge is exceptionally important. Social and political debate often employs arguments that have little if any validity when confronted with scientific insight into the composition, functioning and effects of cannabis. For this reason we have consciously opted for a detailed explanation.

The cannabis plant contains hundreds of chemical substance, a few of which – phytocannabinoids – are cannabis specific. THC (Δ-9-tetrahydrocannabinol) is the most active component of cannabis on account of its psychoactive characteristic. In addition to natural cannabis products (hemp, marihuana, hash and hash oil), there are also synthetic cannabis products such as Spice and K2, which are manufactured in illegal laboratories.

The way cannabis works is related to the endocannabinoid system. Our bodies contain specific proteins, the so-called cannabis receptors, on which endocannabinoid, phytocannabinoids and synthetic cannabinoids can act. When phytocannabinoids such as THC or synthetic cannabinoids find their way into the body they attach to these receptors to stimulate or inhibit reactions, or trigger negative reactions. The effect experienced by the cannabis user depends on the dose, mode of administration, experience with use, vulnerability and emotional state at the moment of intake.

The damage caused by cannabis use increases in line with the amount used, the frequency of use, and the duration of exposure. The age at which a person starts to use cannabis also has a role to play. Tolerance can evolve after chronic or regular use and people who engage in prolonged and intensive use run the risk of developing addiction. Cessation of chronic cannabis use, moreover, can trigger withdrawal symptoms. Most of the physical and psychic effects of cannabis present themselves after heavy, chronic or regular use and are dose-related. Puberty, however, represents a critical period in the development of the brain whereby young people are thus particularly vulnerable to the effects of cannabis.

The operating mechanism of cannabis has been thoroughly studied. Research reveals that medicinal cannabis can alleviate the symptoms of a number of conditions. This research still requires critical analysis within the framework of well-organized and systematic reviews. The use of medicinal cannabis is best seen as adjuvant or complementary therapy in the event that classical medications fail or elicit insufficient results. Because of the potential side-effects, medicinal cannabis is deployed by preference via a mouth spray or via inhalation after vaporization.

3. THE PREVALENCE OF CANNABIS USE IN BELGIUM FROM A EUROPEAN PERSPECTIVE

In the present chapter we will present some statistical information illustrating cannabis consumption in Belgium according to age group and how this compares to other European countries. Statistics on use are subdivided on the basis of the questions posed in questionnaires on the issue: have you 'ever' used cannabis? 'in the last year?' and 'in the last 30 days?' Our presentation of the resulting data per age group continues this subdivision. The statistics stem from the *Vereniging voor Alcohol en andere Drugproblemen* – Association for Alcohol and other Drug Problems (VAD), the *Wetenschappelijk Instituut Volksgezondheid* – Scientific Institute of Public Health (WIV) and the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

A. INCREASING EXPERIMENTATION BUT DECREASE IN RECENT USE

Responses to the question 'have you ever used cannabis?' reveal an increase from 10.6% to 14.1% among respondents in Flanders aged 15-64 between 2001 and 2013 (De Donder, 2014, p. 2; see Table 1). Use 'in the last year' and 'in the last 30 days', however, decreased in Flanders (e.g. from 2.3% in 2001 and 2.8% in 2008 to 1.7% for use in the last 30 days), in line with other countries. Use of cannabis by female respondents is consistently less than that of male respondents across the years.

In Belgium as a whole (and not only Flanders), 15% of the population aged 15-64 responded positively to the question 'have you ever used cannabis?', a percentage much lower than the European average of 21.7% in 2013 (De Donder, 2014; see Table 2).

Less than 1% of the Belgian population between 15 and 64 years of age used cannabis daily or almost daily in 2008 (EMCDDA, 2014). Among those who responded in 2008 that they had used cannabis 'in the last 30 days' (3.1% of the 15-64 year olds), almost half (48%) reported using only one to three times in the said period and a third (29,4%) very frequently: daily or almost daily of (EMCDDA, 2014).

Table 1 Prevalence of Cannabis Use According to Gender in the Flemish Population Aged 15-64

	2001	2004	2008	2013
'Ever'	10.6	12.2	13.4	14.1
Men	13.0	14.4	17.0	17.4
Women	8.2	10.0	9.9	10.9
'Last year'	-	4.6	4.6	3.5
Men	-	6.7	6.6	4.5
women	-	2.6	2.7	2.5
'Last 30 days'	2.3	2.6	2.8	1.7
Men	3.3	4.0	4.1	2.5
Women	1.2	1.2	1.5	0.9

Source: De Donder, 2014, p. 2

Table 2 Prevalence of Cannabis Use 'Ever' Among the Entire Population (aged 15-64) per Country*

	Country	Year	%
5 countries with the highest prevalence statistics	France	2014	40.9
	Denmark	2013	35.6
	Italy	2014	31.9
	Spain	2013	30.4
	UK**	2014	29.2
	Belgium	2013	15.0
5 countries with lowest prevalence statistics	Hungary	2007	8.5
	Bulgaria	2012	7.5
	Romania	2013	4,6
	Malta	2013	4.3
	Turkey	2011	0.7

* Limited to five countries with the highest prevalence, five with the lowest prevalence, and Belgium, according to the most recent statistics provided by the EMCDDA of countries with data not older than 2007.

** UK: data exclusive to England and Wales.

Source: EMCDDA, 2016a.

B. USE AMONG YOUNG ADULTS (15-34 YEARS OF AGE) HIGHER THAN AMONG OLDER ADULTS

Statistics on cannabis use reveal that more people from younger age categories are likely to use than among their older contemporaries. In 2013, for example, those who reported use 'in the last 30 days' among young adults between 15-34 years of age was higher (7%) than the general population (1.7%, see Table 1) (De Donder, 2014).

Age differences are also evident *within* the young adult group. In 2013, 11% of the younger segment (15-24 year olds) reported having used cannabis 'in the last year', almost twice the percentage of respondents aged 25-34 (6%) (De Donder, 2014).

In a European comparative study (see Table 3), the percentage use 'in the last year' among young adults (15-34) in Belgium was 10.1% for 2013, a little lower than the figure of 13.3% on the European level for 2015 2015 (EMCDDA, 2016a, p. 38, 75).

Table 3 Prevalence of cannabis use 'in the last year' among young adults (15-34) per country*

	Country	Year	%
5 countries with highest prevalence statistics	Czech Rep.	2014	23.9
	France	2014	22.1
	Italy	2014	19.0

	Denmark	2013	17.6
	Spain	2013	17,0
	Belgium	2013	10.1
5 countries with lowest prevalence statistics	Lithuania	2012	5.1
	Portugal	2012	5.1
	Cyprus	2012	4.2
	Romania	2013	3.3
	Turkey	2011	0,4

* Limited to five countries with the highest prevalence, five with the lowest prevalence, and Belgium, according to the most recent statistics provided by the EMCDDA of countries with data not older than 2007.

Source: EMCDDA, 2016a (p. 75).

According to the data for 2008, 2.2% of Belgian young adults use cannabis almost daily, more thus than the general population (EMCDDA, 2014). Statistics on problematic use of substances reveal that patients being treated for cannabis use are on average 26 years old (n=3550), and the average age at which patients commence treatment on account of cannabis use is 24 (n=2026), the lowest age when compared with other substances that cause many problems (Antoine, 2016: 35, 77).

C. ALARMING USE IN THE VULNERABLE 12-18 AGE RANGE

Cannabis is the most used illegal drug among young people in the Flemish educational system, among students, and among 'party-goers'/'clubbers' (De Donder & Van Damme, 2016, p. 6; Rosiers, 2017, p. 37). The VAD school student questionnaire of 2015-2016 reveals that 14.6% of pupils between 12-18 years of age have 'ever' used cannabis, and 10.8% have used it 'in the last year' (Rosiers, 2017, p. 37; see Table 4). Regular use (i.e. from 1x per week to daily) has remained relatively stable within this age group: 2.7% in 2005-2006 and 2.6% in 2015-2016 (Rosiers, 2017, p. 38).

Table 4 Prevalence of cannabis use 'ever' among Flemish school children 2015-2016 (12-18 years)

	Never	Ever	Last year years old	Last month m.	Occasional*	Regular**
Total	85.4%	14.6%	10.8%	5.2%	8.1%	2.6%
12-14	97.6%	2.4%	1.5%	0.7%	1.2%	0.3%
15-16	82.1%	17.9%	13.5%	6.3%	10.4%	3.0%
17-18	65.3%	34.7%	26.1%	12.8%	19.1%	6.9%

* Occasional: '1x per month or less' and 'more than 1x per month' (Rosiers, 2017, p. 9).

** Regular: '1x per week', 'more than 1x per week' and 'daily'.

Source: Rosiers, 2017, p. 37.

The prevalence statistics among Flemish school students remain strikingly high, however, when compared with other age groups, especially among the 17-18 year olds, roughly one quarter of whom indicate that they had

used cannabis in the last year (2015-2016) and almost one fifth of whom indicated 'occasional' use (see Table 3). Of primary concern here is the percentage of minors among the problematic users of cannabis. In 2015 this was 17% (n=3553) in Belgium, which is clearly higher than for other substances (Antoine, 2016: 44).

In 2013, 40% of students in Flemish higher education indicated that they had 'ever' used cannabis (De Donder, 2014, p. 2). Among the 'last year' users in Flemish higher education in 2013 (n=519), 20.7% indicate a minimum of 1x per week, and 1 in 20 students indicated daily use (Plettinckx, et al., 2014: 39). Use among 'party-go-ers'/'clubbers' is considerably higher than among the population in general: more than half of the former group (57%) indicated in 2015 that they had 'ever' used cannabis. One in three respondents had used cannabis in the last year (33%) and one in ten respondents indicated daily use (10.1%) (De Donder & Van Damme, 2016, p. 2; Rosiers, 2016, p. 11).[3]

When compared with the rest of Europe, 'ever' use among 15-16 year olds in Flanders (17.9% in 2015-2016; see Table 3) is lower than the European average of 24% in 2015 (EMCDDA, 2015a, p. 41; Rosiers, 2017, p. 9). Among the larger age group – 15-24 year old in Belgium – roughly one in four indicated in 2013 that they had 'ever' used cannabis (26.1%) (See Table 4). This is lower, however, than in many other European countries, given the European average of almost one in three of the 15-24 year old age group indicating they had 'ever' used cannabis (29.7%) according to the most recent statistics (EMCDDA, 2012).

Table 4 Prevalence of cannabis use 'ever' among 15-24 year olds per country*

	Country	Year	%
5 countries with highest prevalence statistics	France	2014	46.7
	Czech Rep.	2014	43.7
	Denmark	2013	41.5
	Spain	2013	38
	The Netherlands**	2014	31.2
	Belgium	2013	26.1
5 countries with lowest prevalence statistics	Portugal	2012	12.6
	Cyprus	2012	10.9
	Romania	2013	6.6
	Malta	2013	5.1
	Turkey	2011	0.8

* Limited to five countries with the highest prevalence, five with the lowest prevalence, and Belgium, according to the most recent statistics provided by the EMCDDA of countries with data not older than 2007.

Sources: EMCDDA, 2014, 2016b.

[3] By way of comparison, this is more than the percentage of respondents in 2015 who indicated daily alcohol use, namely 6.1%.

D. CONCLUSION

In the present chapter we presented a series of prevalence statistic related to the consumption of cannabis in Belgium. The most striking and concerning feature is the reported use among young people: in school year 2015-2016 'in the last year' use among 15-16 year olds was 13.5%. Among the 17-18 year olds this was more than a quarter (26.1%). Frequent use is also higher among young adults (15-34 year olds) when compared with the population as a whole. Research into problematic use reveals, moreover, that patients in treatment for cannabis use tend to be young (an average of 26 years of age) when compared with problematic users of other substances (Antoine, 2016: 35, 77). Many problematic users of cannabis (17% in 2015) are even minors (Antoine, 2016: 44).

While the 'ever' use of cannabis among the general Belgian population (15-64 year olds) increased between 2001 and 2013 – according to available VAD statistics (De Donder, 2014), reported use 'in the last year' and 'in the last 30 days' was lower in 2013 than in 2008. It would thus appear that more and more people have 'ever' used or tried cannabis, but this does not necessarily indicate monthly use.

When compared with the rest of Europe, Belgium cannot be included among the countries with the highest or lowest prevalence statistics. According to the available data, use of cannabis in Belgium is for the most part lower than the European average. Comparisons with other countries require careful interpretation, however, bearing in mind that the statistics made available per country by the EMCDDA have not always been compiled in the same way and are not always available for the same years.

4. BELGIUM'S CANNABIS POLICY TODAY: TO WHAT EXTENT HAS IT ACHIEVED ITS GOALS?

In this chapter we offer a concise description of the historical development of Belgian drugs policy. We then evaluate whether the most important goals of Belgian cannabis policy – rooted, partly, in the federal policy paper on drugs from January 19 2001 and based on the recommendations of the parliamentary working group on drugs (1997) – have been realized, and if so to what extent. Has there been an observable and concrete decrease in the number of addicted citizens? Has Belgium's cannabis policy contributed to a decrease in the physical and psychological damage that can be caused by cannabis use and to a decrease in the negative consequences of the cannabis 'phenomenon' in society (public disruption, criminality)?

A. THE EVOLUTION OF BELGIAN DRUGS LEGISLATION AND POLICY SINCE THE 1920S

I. BEGINNINGS

The first Belgian legislation on drugs dates back to 1921 when the use of drugs that are now illegal in Belgium was still very limited. It was in fact a marginal phenomenon that only occurred in certain circles (Fijnaut & De Ruyver, 2014). The law of February 24 1921 regarding trafficking in toxic substances, soporifics and sedatives, disinfectants and antiseptics came about as a result Belgium's ratification in 1914 of the Opium Convention of The Hague (with a law dated March 15th 1914, published in the Belgian National Gazette on July 16th 1919). The said law was a piece of framework legislation that granted the executive authorities further regulatory competence. This explains why drugs legislation and penal provisions in Belgium are to be found in a variety of laws, royal decrees and ministerial circulars (Mahieu, 2005). The first comprehensive changes to the law of 1921 were introduced with the law of July 9th 1975 (*Belgian National Gazette*, September 26th 1975). The changes aligned the law with the Single Convention of New York (1961) and the Vienna Convention on Psychotropic Substances (1971). These repressive changes to existing drugs legislation led to an enormous increase in the number of prison convictions and had a considerable impact on the number of convictions for drug related crimes within the prison population (Snacken, 2007). Then in line with international legislation, Belgian law did not distinguish at the time between cannabis and other drugs. Nevertheless, Belgium committed itself in a variety of conventions to make the cultivation and production of narcotic substances penalized by law (Fijnaut & De Ruyver, 2014).

II. PARLIAMENTARY WORKING GROUP ON DRUGS

In the 1990s, several policy initiatives focused themselves on an integrated (and thus not exclusively penal) approach to the drugs problem. This led in 1993 to a first circular from the Minister of Justice and the Public Prosecutors in which a distinction was made between different types of uses and suppliers (the General Guidelines of the College of Public Prosecutors under the chairmanship of the Minister of Justice dated May 5th 1993 concerning a common penal policy in matters of narcotic substances). These individual policy initiatives were not sufficient, however, and as a result the entire federal government was forced to address the issue in 1995. This gave rise to the Federal Action Plan on Toxicomania-Drugs, which consisted of a 10 point plan including, among other things, special attention to the provision of accessible professional assistance.

A Parliamentary Working Group on Drugs was established the following year in the Chamber of Deputies. The group presented its findings and policy proposals – which still serve as the basis of current Belgian drugs policy (Fijnaut & De Ruyver, 2014) – on June 5th 1997. In line with the findings of the working group, a new ministerial circular (COL 5/98 dated May 18th 1998) concerning prosecution policy in relation to the possession and marketing of illegal narcotics made a distinction for the first time between cannabis and other drugs and introduced

the concept 'lowest prosecution priority' for cannabis possession for personal use. The said guidelines, however, did not determine the amount of cannabis that considered eligible for 'personal use'.

III. FEDERAL DRUGS MEMORANDUM

The federal government likewise based its 2001 Federal Drugs Memorandum on the recommendations of the Working Group on Drugs. Dated January 19th 2001, this policy memorandum on the drugs problem treated drugs as a public health issue and gave priority to an integrated approach – within the various policy domains and European drugs policy – with achievable goals. The establishment of a deterrent effect took pride of place in terms of both demand and supply. The said policy was and continues to be focused in the first instance on prevention and professional assistance. According to the memorandum, punitive repression – and in particular the use of prison sentences – was to be considered an *ultimum remedium* in relation to individual users, while it was to continue to be the norm with respect to drug production and trafficking (Vander Laenen & Dhont, 2003).

IV. LEGISLATIVE REFORM IN 2003

In 2003, the legislator thoroughly revised the law of 1921 for a second time, bringing it into line with the content of the federal memorandum.[4] The distinction between cannabis and other drugs this acquired a legal anchor. This legal amendment also authorized the king to further regulate the brokerage and transit of drugs, thereby intensifying the struggle against drug production and trafficking (Vander Laenen & Dhont, 2003). The legal revision of 2003 together with a decision of the Court of Cassation in 2006 also created clarity with respect to the criminalization of cannabis cultivation (Arnou, 2006; Dangreau & Serlippens, 2007; Van Gaever, 2007).[5] Before the revision of 2003, it was not clear whether the cultivation of cannabis prior to its harvest also constituted possession, thereby making it an offence (Van Gaever, 2007). The criminalization of the use and possession of cannabis for personal use did not disappear from the law. Nevertheless, the new Article 11 of the Drugs Act determined that when the police encountered a situation of possession of an amount of cannabis for personal use by an adult individual without evidence of disruption or problematic use, they were to limit themselves to anonymous registration. In addition to the aforementioned legal reforms, a royal decree and a new set of ministerial guidelines also came into effect in 2003.[6] The multitude of legislative sources surrounding drugs and the references in the legislation do not promote the legibility of these texts nor their legal certainty (Michel, 2005).

[4] Law of April 4th 2003 revising the law of February 24th 1921 concerning trafficking in toxic substances, disinfectants and anticeptics and Article 137 of the Code of Criminal Procedures, *BNG* June 2nd 2003; law of May 3rd 2003 revising the law of February 24th 1921 concerning trafficking in toxic substances, soporifics and narcotics, disinfectants and anticeptics, *BNG* June 2nd 2003.

[5] The Court of Cassation determined that the cultivation of cannabis for sale and the cultivation of cannabis for the use of another were an offence based on articles 2*bis* Drugs Act and 26*bis*, 4 ° royal decree of December 31st 1930 concerning trafficking in soporifics and narcotics: "The sanction scale of articles 26bis, 2°, 3° and 4°, and 28 of the royal decree of December 31st 1930 does not detract from the criminal liability of crimes associated with cannabis. Article 26bis, 2° and Article 28, §2 nevertheless establish a less severe penalization for the import, production, transportation, acquisition and possession of soporifics and narcotics related to cannabis, in addition to the cultivation of cannabis plants for personal use. This excludes every other offence beyond that of personal use. The said legal provisions are so explicit, detailed and clear that no doubt whatsoever can be raised in their regard." Cass. January 10th 2006, AR P050812N.

[6] Royal decree of May 16th 2003 revising the royal decree of December 31st 1930 concerning trafficking in soporifics and narcotics, together with the royal decree of January 22nd 1998 regulating certain psychotropic substances, with a view to including provisions related to risk limitation and therapeutic advise, and the revision of the measures contained in royal decree of October 26th 1993 designed to prevent the abuse of certain substances for the illegal manufacture of narcotics and psychotropic substances, *BNG* June 2nd 2003.

Article 2.1 of the ministerial guidelines of May 16th 2003 concerning prosecution policy in relation to the possession and retail of illegal narcotics (*Belgian National Gazette, June 2nd* 2003) likewise gives pride of place to deterrence and the protection of society and defines the expression "possession for personal use" as "an amount of cannabis that can be used all at once or within a maximum period of 24 hours". The said guidelines did not establish a maximum weight, but suggested that one should consider an amount of cannabis not exceeding three grams to be for personal use.

V. INTERVENTION OF THE CONSTITUTIONAL COURT

In 2004, the Constitutional Court – then still referred to as the Court of Arbitration – annulled the abovementioned Article 11 of the Drugs Act, arguing that it infringed the principle of legality.[7] The Constitutional Court decided that if the law determines that the possession of an amount of cannabis for personal use, despite the criminal character thereof, need not under certain circumstances be referred for prosecution but only registered by the police, then the legislator is obliged to define the specific amount. Nevertheless, the Constitutional Court permitted the legislator to delegate this on the condition that the executive instance be obliged to define the specific amount. In the same ruling, the Constitutional Court noted that the concepts 'problematic use' and 'disruption' were ambiguous. As a result of this ruling, the police were no longer free to limit themselves to the registration of cannabis possession, but were obliged – as in the past – to write a police report. The possession of cannabis for personal use was once again subject to prosecution (Vandromme, 2004).

VI. RECENT REVISIONS

Since 2004, the Drugs Act has undergone a number of additional minor amendments (De Nauw, 2014). In 2006, the legislator added, among other things, Article 9*bis*, which grants authority to a local mayor to close, under certain circumstances, places accessible to the public in which illegal activities with drugs are taking place. The Common Declaration of the Inter-Ministerial Drugs Conference – *Gemeenschappelijke Verklaring van de Interministeriële Conferentie Drugs* published on January 25th 2010 represented a continuation of the federal drugs memorandum, but paid more attention to the interaction between Belgian drugs policy and that of its neighbours. Thus far, the last significant change to the Drugs Act dates back to 2014 and was a reaction to the increasing professionalization of illegal drugs production whereby the legislator criminalized preparatory activities. The legislator here was particularly focused on the so-called *growshops* that play a significant role in providing the facilities (buildings, apparatus) to cultivate cannabis.[8]

VII. CURRENT LEGAL SITUATION AND CRIMINAL PROSECUTION PRACTICE

Based on the Drugs Act, the possession of cannabis for personal use is penalized with a fine of 15 to 25 euros for the first offence, 26 to 60 euros in the case of a repeated offence within a year of the first conviction and a prison sentence of 8 days to 1 month plus a fine of 50 to 100 euros in the case of a repeated offence within a year of the second conviction (Article 2ter of the Drugs Act). The fines are to be increased by a surcharge of 70, which implies multiplication by a factor of 8. The period of limitation for such crimes is six months.[9] The cultivation of cannabis for other than personal use and the sale of cannabis are penalized with a prison sentence of 3 to 5

[7] Court of Arbitration October 20th 2004, nr. 158/2004, *NjW* 2004, 1314, note JD.
[8] Artciel 2*bis*, § 6 Drugs Act introduced by Article 3, law of February 7th 2017 revising the law of February 24th 1921 concerning trafficking in toxic substances, soporifics and narcotics, psychotropic substances, disinfectants and anticeptics, and substances that can be used of the illegal manufacture of narcotics and psychotropic substances, *BNG* March 10th 2014.
[9] Article 21 V.T.Sv. See, for example, Corr. Brussel (51e k.) April 19th 2004, *Journ.Proc.* 2004, 25, note C. Guillain.

months and an obligatory fine of 1000 to 100,000.[10] Since 2014, preparatory activities can occasion the same penalization (Article 2bis, §6, Drugs Act). The Drugs Act also envisages a number of additional penalties, such as the closure of a facility and the confiscation of assets (De Nauw, 2012). The latter is a far-reaching penalty that not only deals with the illegal drugs, but also the material gains arising from the drugs trafficking.[11]

Belgium's cannabis policy thus provides for the possibility of dealing with certain behaviours without imposing criminal liability (in the terminology of the EMCDDA [see appendix 1] 'depenalizing' without 'decriminalizing'), while the behaviour in question remains an offence. The criminalization of the possession of a small amount of cannabis, moreover, was not removed from criminal legislation. The Belgian version of the tolerance model consists in not giving priority to the possession of a small amount of cannabis for personal use in the prosecution policy of the Prosecution Office (granted the fulfilment of certain conditions). It should also be noted that the tolerance policy is related exclusively to the possession of (a small amount of) cannabis and not to the production and distribution thereof. To the present day, therefore, Belgian cannabis policy continues to be grounded in a repressive approach.

In compliance with the ruling of the Constitutional Court, a new Common Guidelines was published in the *Belgian National Gazette* by the Minister of Justice and the College of Public Prosecutors on January 25th 2005 (COL 2/2005) concerning the detection, legislation and prosecution of offences related to the possession of cannabis. The said guidelines state that the possession of an amount of cannabis for personal use by an adult should be given the lowest priority in terms of prosecution policy unless it goes hand in hand with a disruption of the public order or other aggravating circumstances summarized in the guidelines. The guidelines also stated that the possession of a maximum of 3 grams or one cultivated plant should be considered 'for personal use'. In such instances, the police should only draw up a simplified report and submit them monthly to the Public Prosecutor's Office. The guidelines also noted that drawing up a simplified police report should not occasion the confiscation of the cannabis. Should the person involved hand the cannabis over voluntarily then the police must destroy it.

A recent circular (COL 15/2015) dated December 21st 2015 concerning the detection, registration and prosecution policy in relation to the possession of a retail of illegal narcotics changed the approach to personal cannabis use on one point only. Possession for personal use by adults continues to have the lowest priority in terms of prosecution policy, but the cannabis must always be confiscated, even when a simplified police report is drawn up (Van Espen & Van Thienen, 2016).

VIII. SOME STATISTICS ON THE RESULTS OF CRIMINAL PROSECUTION

In 2013, 52% of the total number of registered narcotics offences was related to cannabis. Of the 14,055 offences, 9,614 had to do with cannabis possession, 179 use, 2,498 trafficking, 1,140 import and export, and 624 manufacture (De Donder, 2014; see also De Donder and Van Damme, 2016).

Recent statistics published by the College of Public Prosecutors indicate that on January 1st 2014, 12,640 drugs and doping cases were pending before Belgium's criminal course, representing 5.7% of all criminal proceedings. It would appear from the same statistic, moreover, that the percentage varies from one jurisdiction to the other. By way of example, Antwerp accounted for 9.0% of the said cases while the number for Liege was less than half (4.4%). In absolute figures, this amounted to 3,301 cases in Antwerp and 1,925 in Liege. Nevertheless, these figures do not allow us to draw decisive conclusions with respect to prosecution policy per judicial district.

[10] Presuming the said cultivation is not associated with aggravating circumstances. Article 2*bis*, § 1 Sw.; Cass. January 10th 2006, AR P050812N; L. Arnou, "Cannabis: oogsten mag niet… kweken evenmin", *NC* 2006, 341; J. Dangreau and A. Serlippens, "Drugwetgeving", *NjW* 2007, (482) 485.

[11] The Court of Cassation already stated that a judge is not required to take costs into account when calculating the said material gains and is thus at liberty to confiscate the gross income. Cass. September 27th 2006, AR P060739F.

From a study published in 2009 it would appear that the most frequently deployed sanction for drugs offences was a prison sentence accompanied in some instances by a fine. Those responsible for the study examined sentencing trends in relation to drugs offences heard in criminal courts in Brussels between 1976 and 2003, but no distinction was made between cannabis and other drugs (De Pauw, 2009). The average sanction in 1976 consisted of a prison sentence of 5 months for possession, while the average for 1993 was 14 months and for 2003 only 9 months. A similar trend is evident with respect to other drugs offences such as trafficking and import, although the average number of months was higher with respect to such offences (De Pauw, 2009). In 1976, 18.7% of prison sentences were deferred (both simple deferment and probational deferment). In 1993 this was 41.6% and in 2003 35.7%. The same study also demonstrated that a general tendency was observable in this period towards a reduction in the number of convictions for drugs possession and use (59.9% in 1976 in contrast to 40.9% in 2003), but that there was also evidence of an increase in the number of convictions for the sale of drugs (2.3% in 1976 in contrast to 37.9% in 2003).

No recent studies are available on sentencing in relation to cannabis offences. Discussions with members of the Prosecutor's Office and the judiciary suggest that a prison sentence continues to be the most deployed sanction for cannabis trafficking. Since the 2003 addition of Article 11 to the law of 1921, however, cannabis users have rarely been sanctioned with a prison sentence for the possession of an amount of cannabis for personal use. In spite of the dismissal of the said article but the Court of Arbitration in 2004, the police continue to limit themselves to a simplified report – based on circular COL 2/2005 – when they detect possession by an adult of no more than 3 grams of cannabis or one cannabis plant intended for personal use and in the absence of disruption of the public order or other aggravating circumstances. While criminal policy in Belgium continues to be more repressive than in neighbouring countries, there is evidence of increasing differentiation in penal sanctions in response to cannabis related offences (see chapter 5).

B. TO WHAT EXTENT HAS BELGIAN CANNABIS POLICY ACHIEVED ITS GOALS?

The most important goals of Belgian cannabis policy – rooted, among other things, in the Federal Policy Memorandum of January 19th 2001 and based on the recommendations of the Parliamentary Working Group Drugs (1997) – are the following:

1) A reduction in the number of addicted citizens;
2) A reduction in the physical and psychosocial damage that cannabis abuse can cause;
3) A reduction in the negative consequences of the cannabis phenomenon for society (disruption and criminality).

The authorities opted for an integrated approach in which prevention was to be given the highest priority, followed by care/support and last of all repression. In terms of cannabis availability, the goal was to work on a reinforced repressive policy towards the criminal organizations involved in the cannabis trade. In contrast to the perception that cannabis in Belgium was more or less been 'legalized', penal law and enforcement activities continue to be the spearhead of the police and justice system, as was clearly evident in the number of registered cannabis-related offences outlined above.

Twenty years after the recommendations of the Parliamentary Working Group (1997) and more than fifteen years after the Federal Policy Memorandum (2001), and in light of social developments, the time is ripe for a critical evaluation of the results of the implemented measures.

I. TRENDS IN THE PROBLEMATIC USE OF CANNABIS

Cannabis policy is often defended on the basis of statistics that reflect police activities, such as the number of arrests, official police reports and (municipality) fines, the number of plantations discovered, the amount of cannabis confiscated, and the penalties imposed. While such indicators tell us how much energy and effort is being employed to confront the issue and the severity of police interventions, they do not illustrate the successes that have been achieved in promoting the health of the population. While the general consumption of cannabis appears to be stabilizing in Belgium (see chapter 3), statistics associated with cannabis-related health problems remain a primary concern: between 2003 and 2011, the number of admissions for cannabis-related problems in mental health centres and general hospitals increased. In the period 2000-2010, the number of psychiatric admissions for cannabis abuse almost doubled and for cannabis dependence almost tripled. The number of new admissions to specialized centres for drug addiction more than doubled between 2003 and 2010.

The use of cannabis and the number of people struggling with cannabis-related problems has clearly increased, *in spite of* the cannabis prohibition. Healthcare professionals point out that people with drug-related psychiatric problems sometimes find themselves in prison instead of psychiatric care as a result of this one sided approach, while detention centres are not the most appropriate place to offer them the help they need. The incarceration of significant numbers of drugs users leads to an increase in the acceptability of drugs use in prisons and only serves to aggravate existing health issues (Decorte, De Grauwe & Tytgat, 2014).

II.THE PARADOX OF THE REPRESSIVE APPROACH AND ITS CONSEQUENCES

A policy that endeavours to limit the supply of cannabis by repression has to face a fundamental paradox. The more intense the repression, and the more successful it is in limiting supply and creating scarcity, the higher the price for the consumer which ultimately leads to greater profitability for the producers and distributors of cannabis (Decorte, De Grauwe & Tutgat, 2016). High profit margins are enormously attractive to (millions of) people who are willing to take risks, to 'have-nots' who have nothing to lose, and to people who have no fear of crime and violence. The more intense the repressive approach, the more people are inclined to seize the opportunity to produce and distribute drugs (Decorte, 2014). This paradox has a number of important effects.

In the first instance, the repressive approach is quickly confronted with its limitations (see, for example, Greenfield & Paoli, 2017). Its effectiveness is limited by definition on account of the unstoppable growth of greedy producers and dealers. As a result, governments are faced with the emergence of countless illegal supply channels which are beyond their control. Given the fact that supplying drugs is exception –ally profitable on account of their illegality, drugs suppliers have vast financial resources at their disposal and this helps them to conceal their activities in ever more sophisticated ways or to avoid repression via bribery and corruption (Behr, 1996; Hall, 2001).

Belgium's cannabis policy cannot exercise significant influence on the supply of cannabis or access thereto, let alone reduce it. This was already more or less impossible when cannabis was primarily imported from Morocco and it now seems to have become completely impossible since the cannabis in question is presently produced in Belgium and the Netherlands by a large number of both large and small suppliers (Decorte et al., 2014). This has only led to a number of geographical shifts and transformations (Rasmussen & Benson, 1994). In practical terms, moreover, an intensified repressive approach to everyone involved wherever they are cannot be sustained on account of budgetary limitations and the need to combat other criminal phenomena. The result here is often a form of selectivity in the approach to disruption and to tracing and sanctioning (Contreras, 2013; Gray, 2001).

The most important consequence of the paradox is its criminogenic effect. Supply is created in illegal circumstances and attracts large numbers of suppliers who engage in intense competition with one another. The illegal circumstances inevitably become criminal circumstance. The more rigorous the interventions on the part of the authorities, the more the illegal market is characterized by systemic violence (rip-offs, shooting incidents, score-settling etc.), and the more 'criminal' it becomes (Behr, 1996; Miron, 2004; Werb et al., 2011; Potter et al., 2011). Small scale hobby producers tend to be afraid of the increased chances of detection and are unwilling to take the risk, whereby only the professional criminal merchants are left. The prohibition against cannabis leads indirectly to corruption, money-laundering, damage to other economic sectors (see, for example, Spapens et al., 2007) and on the international level to drugs money that is used to finance weapons trade, terrorism and war, threatening democratic institutions and causing ecological damage (e.g. Chouvy, 2016).

A further consequence is the lack of control over the composition, purity, strength and general quality of illegal cannabis. Present day 'nederweed' and 'belgoweed' contains much higher concentrations of THC than thirty or forty years ago, but that is in fact a result of the repressive approach. The risks of being caught have lead growers to cultivate the most powerful cannabis they can (Decorte et al., 2014).

Furthermore, cannabis is presently cultivated under circumstances that are unverifiable thereby exposing it to contamination by toxic fungi, bacteria, pesticides and other pollutants (heavy metals, glass particles etc.). In this context all we can do is try to warn the population where risks are known to be acute, but we cannot intervene. In addition, the government is unable to influence or curtail the marketing strategies of the cannabis producers, which they *can* do with respect to legal intoxicants and the industry that produces them. When compared with alcohol and tobacco, a consistent approach on the part of the authorities in determining the quality, quantity and labelling of cannabis is – to say the least – warranted.

In 2004, Belgium's 'security' expenditure on illegal drugs (including expenditure on the approach to and processing of violations against the drugs legislation by the police and the justice system amounted to 186,038,337€, in other words 56.2% of the total government expenditure (on federal, communal, regional, provincial and local levels) associated with the approach to the illegal drugs problem. In 2008, this percentage had risen to 62% of the total government expenditure related to illegal drugs (or 243,000,490€ of a total of 392,191,170€) (Vander Laenen et al., 2011). Such exuberant expenditures in combination with a policy of incarceration and ineffective strategies to reduce supply, tend to supplant more cost-effective and scientifically grounded investments in effective prevention, in the reduction of demand and in damage limitation. Government expenditure should be geared towards activities that clearly contribute to the realization of the government's most important policy goals. In economically turbulent times, it is no longer possible to maintain symbolic investments (Decorte, De Grauwe en Tytgat, 2014).

C. CONCLUSION

The earliest drugs legislation in Belgium dates back to 1921, when the use of illegal drugs in the country was still very limited. In the wake of the important international agreements (the Single Convention of New York [1961] and the Vienna Convention on Psychotropic Substances [1998]), Belgium's legislation also became more repressive, with a clear increase in the number of drugs-related convictions as a result. New initiatives in the 1990s focused on an integrated approach to the problem of drugs. A new Federal Drugs Memorandum was published in 2001, and in 2003 the authorities reformed the legislation of 1921, whereby the distinction between cannabis and other drugs was given a legal foundation. The criminalization of the use and possession of cannabis for personal use did not disappear from the legislation. Since then, however, there is evidence of a *de facto* decriminalization of the possession of an amount of cannabis for personal use by an adult, because such use has been treated with the lowest priority in prosecution terms. Nevertheless, there has been no decriminalization *de iure*:

the criminalization of the possession of a small amount of cannabis has not been removed from Belgian legislation. Belgium's cannabis policy thus continues to the present day to be based on a repressive approach.

Any endeavour to critically evaluate Belgium's cannabis policy in terms of the results it has achieved will be forced to observe that it has not realized its most important goals. There is no evidence that the use of cannabis has structurally decreased and the increase in the number of people with cannabis-related problems presenting themselves within the healthcare services in concerning. The repressive approach to the illegal cannabis market has also had to face its limitations: it only leads to geographical shifts and transformations, selectivity in the approach to disruption, detection and penalization, and has criminogenic effects. Furthermore, verification of the quality and strength of illegal cannabis is impossible and the consequences of this reality for the public health are evident.

5. THE EVOLUTION OF INTERNATIONAL CANNABIS POLICY

Belgium's restrictive cannabis policy finds its inspiration and formal justification in the international drug control procedures that have evolved since the beginning of the 20th century. At the present time, these procedures forbid any interaction with cannabis, including possession for personal use, except in cases of 'medical and scientific research'. In the present chapter we offer a sketch of the historical development of this international legal framework and discuss the content and potential interpretations of the various international drugs agreements that are currently functioning. We will also discuss the European legislative framework.

A. INITIAL ATTEMPTS TO CONTROL CANNABIS

Reflecting an increasing apprehension concerning psychoactive drugs, which were often associated with 'dangerous' social groups, a number of countries already introduced restrictive measures against cannabis in the 19th century, among them Egypt, a number of other Arab nations, Brazil and South Africa (Bewley-Taylor, Jelsma & Blickman, 2014).

I. THE FIRST OPIUM CONVENTION OF THE HAGUE, 1912

The International Opium Convention was concluded on January 23rd 1912 under the auspices of the League of Nations with a view to countering abuse of opium, morphine, cocaine and their derivatives. It was the first convention to endeavour to set restrictions on the narcotics trade. The convention was occasioned by the resolutions stemming from the International Opium Commission set up in Shanghai on February 1st 1909. The United States of America was determined to establish an international convention on the basis of the said resolutions. As a result, an international conference was organized in The Hague on December 1st 1911 that lead to the realization of the first International Opium Convention.

On Italian initiative, supported at the time by the United States, concerns were then expressed about 'Indian Hemp' in an addendum to the first international convention on drugs control (see, for example, Bruun, Pan & Rexed, 1975). While cannabis use was not considered a problem at that juncture in most western countries, Italy was concerned about the hash trade in its North African colonies (present day Libya), which it had won from Turkey during a war in 1911.

This first convention focused on supply, which still characterizes international drug control regimes. In contrast to later conventions, however, it emphasized regulation rather than prohibition and its measures were somewhat weak (Paoli, Greenfield & Reuter, 2012). The convention specially addressed the opium trade, but it did not limit the production of raw opium and only called for national instead of international regulations concerning the production and distribution of refined opium (see, for example, McAllister, 2000). The conditions it proposed for other opiates and cocaine were even weaker. Nonetheless, the convention concluded at The Hague was crucial when it stated that the use of morphine, cocaine and opium were to be restricted 'to medicinal and legitimate goals'. Thanks to manoeuvring on the part of the British and the Germans, the initial focus on China – a leftover of the Shanghai Conference of 1909 – was expanded in the first International Opium Convention to include the entire international playing field (Berridge, 1984). On the insistence of Germany, which wanted to postpone inspections, the decision was made that the convention required unanimity before it could be implemented. Given this irregular procedure, the convention would probably not have been ratified were it not for the fact that the British government made it a condition for the Treaty of Versailles, which ended the First World War in 1919 (McAllister, 2000; Paoli, Greenfield & Reuter, 2012).

II. THE DRUGS CONVENTIONS OF THE LEAGUE OF NATIONS AND THE FIRST NATIONAL LEGISLATIONS

The establishment of the League of Nations in 1919 offered the international community a central administrative organ for the control of drugs, namely the Advisory Commission on Traffic in Opium and Other Damaging Drugs. In the early 1920s, the Commission focused for the most part on opium, morphine and cocaine. A letter from the South African government to the Advisory Commission put cannabis back on the agenda in 1923. A year later, during the Second Opium Conference, the Egyptian delegate suggested that cannabis should be included in the conference's deliberations. The same delegate also tried to have cannabis included within the framework of the convention by claiming that hash "is at least as damaging as opium, if not more so" (Bewley-Taylor, Jelsma & Blickman, 2014). In spite of the lack of evidence and the reservations expressed by Great Britain, India and The Netherlands, the Conference decided formally – on the insistence of the US – that 'Indian Hemp' was addictive, was just as dangerous as opium, and should thus be treated as such. As a result, cannabis was incorporated into the International Opium Convention of 1925, under a limited regime of international control. A ban was introduced on the export of cannabis to countries in which it was illegal, and an import certificate was required for countries that permitted its use (see, for example, Bewley-Taylor et al., 2014).

As a consequence of the ratification of this Second International Opium Convention, many European countries gradually introduced a prohibition on the possession of cannabis and often also on its use. In addition to Belgium, the United Kingdom fell in line with the introduction of the Dangerous Drugs Act of 1928 (Berridge, 1989), with The Netherlands regulating matters via a revision of the Dutch Opium Law in 1928 (Korf, 2002; Fijnaut & De Ruyver, 2014) and Germany bringing up the rear with a second Opium Law in 1929 (Ballotta, Bergeron & Hughes, 2009). These laws went further than the obligations imposed by the Convention, in spite of the absence of problems related to cannabis in the countries in question. In 1937, the federal government of the US approved the *Marihuana Tax Act*, with which they endeavoured to banish cannabis from the country. Prior to WWII, moreover, the US increased its efforts to reinforce the international drug control regime. Furthermore, it provided a subcommittee of the Advice Commission of the League of Nations with extensive documentation in which it highlighted the harmful aspects of cannabis and its links with criminality in an exaggerated fashion (Bewley-Taylor et al., 2014).

B. THE CURRENT DRUG CONTROL SYSTEM AND THE PRESENT DEBATE

After World War II, the agencies for drug control and other functions of the League of Nations were transferred to the (newly founded) United Nations. The Economic and Social Council of the UN took over the final responsibility through its Commission on Narcotic Drugs (hereafter: CND). Within this context, the US benefited from its newly acquired status of superpower by successfully imposing its opinions about cannabis. Based on the highly limited and coloured documentation presented by Pablo Osvaldo Wolff, a protégé of the US who at that time was chairman of the *Addiction Producing Drugs Section* of the World Health Organization (WHO), the CND concluded in 1955 that cannabis had no medicinal value. This opinion then inspired the negotiations of a Single Convention on Narcotic Drugs, passed at the suggestion of the United Nations, which replaced all preceding treaties (Bruun et al., 1975; Bewley-Taylor et al., 2014). The Single Convention on Narcotic Drugs was established on 13th December 1964 under the auspices of the United Nations. It is the first of three UN conventions which regulates the trade in, and the supervision of, narcotic drugs, later completed by the Convention on psychotropic substances of 1971 and the Convention against the illicit traffic of narcotic drugs and psychotropic substances of 1988. We will discuss the three conventions successively.

I. THE SINGLE CONVENTION OF 1961

In the Single Convention of 1961, cannabis, along with heroin and a few other selected drugs, was included in Schedule I (containing those substances considered most addictive and most harmful) and in the most stringent Schedule IV (containing those substances to be the most dangerous and regarded as exceptionally addictive and producing severe ill effects). Thus, it became classified among the most dangerous psychoactive substances under international control with no or very limited therapeutic value. It never passed, though, the test of a scientific review by WHO experts against the criteria required for inclusion of any psychoactive substance in the UN schedules of controlled drugs. This was admitted in 2014 by the World Health Organization's (WHO) Expert Committee on Drug Dependence (ECDD, 2014), the body charged by the 1961 and 1971 Conventions with the scientific and medical review of scheduling proposals: "Cannabis and cannabis resin has not been scientifically reviewed by the Expert Committee since the review by the Health Committee of the League of Nations in 1935" (ECDD, 2014, cited in Bewley-Taylor et al., 2016).

With regard to Schedule IV, article 2, 5(b) of the Convention stipulates that any signatory "shall, if in its opinion the prevailing conditions in its country render it the most appropriate means of protecting the public health and welfare, prohibit the production, manufacture, export and import of, trade in, possession or use of any such drug except for amounts which may be necessary for medical and scientific research only (UNODC, 2013)." Due to its inclusion in Schedule IV, the Convention hereby suggests that parties should consider prohibiting cannabis for medical purposes and only allow limited quantities for medical research.

Within the Convention, according to article 1, 1(b), 'cannabis' is understood as "the flowering or fruiting tops of the cannabis plant" (UNODC, 2013), which instantly implies that the leaves and seeds are not included. This exclusion keeps the traditional use of *bhang* in India outside the scope of the Convention. It foresaw instead the abolishment of all other traditional and widely socially accepted uses of cannabis in many Asian and African countries. Article 49 (UNODC 2013) required the abolition of the nonmedical and non-scientific use of cannabis, cannabis resin, extracts and tinctures of cannabis as soon as possible, with a maximum delay of 25 years. The required number of 40 ratifications of the treaty to enter into force was reached in December 1964, hence the 25-year phase-out scheme for cannabis ended in 1989.

II. THE CONVENTION ON PSYCHOTROPIC SUBSTANCES OF 1971

The psychoactive compounds of cannabis, and specifically its main active ingredient, delta-9-tetrahydrocannabinol (THC), were identified two years after the adoption of the Single Convention, in 1963. Whereas opium, coca and their active ingredients are controlled under the same schedules of the Single Convention, a different path was chosen for THC. Following requests of the pharmaceutical industry, dronabinol, a pharmaceutical formulation of THC, was included in the most stringent Schedule I of the Convention on Psychotropic Substances, which was adopted in 1971 (UNODC, 2013). This decision allowed the use of dronabinol in medical research, but posed obstacles for the development and marketing of pharmaceutical preparations for medical uses. Successful lobbying of the pharmaceutical industry, based on a slowly increasing body of evidence regarding medicinal efficacy of cannabis and its cannabinols, led to a 1982 U.S. government request to transfer dronabinol from Schedule I to II. After a positive recommendation of the WHO, the CND followed upon the U.S. request and rescheduled dronabinol and all its stereoisomers to the less stringent Schedule II of the 1971 Convention in 1991 (WHO, 2006: 2-3 and Bewley-Taylor et al. 2014: 25-27).

III. CONVENTION AGAINST ILLICIT TRAFFICKING OF 1988

The third pillar of the contemporary international drug control regime is constituted by the 1988 United Nations Convention against Illicit Trafficking in Narcotic Drugs and Psychotropic Substances (UNODC, 2013). This convention was also inspired by the traditional focus on offer and was, as aptly put by the *Special Committee on Illegal Drugs* (Senate Special Committee on Illegal Drugs, 2002) by the Senate of Canada, "essentially an instrument of international criminal law". Its aim is to harmonize criminal legislation and enforcement activities worldwide with a view to curbing illicit drug trafficking and consumption through criminalization and penalization. Even more explicitly than the Single Convention, the 1988 Convention requires the criminalization and penalization of "the possession, purchase or cultivation of narcotic drugs or psychotropic substances for personal consumption" (Art. 3 §2, in UNODC, 2013: 129). Nonetheless, this paragraph begins with a clause that a number of experts and countries have interpreted as an "escape clause" (Bewley-Taylor et al., 2014), namely "Subject to its constitutional principles and the basic concepts of its legal system" (Art. 3 §2, in UNODC, 2013: 129). This clause implies that "any latitude existing under this Convention does not result exclusively from the Convention but also from the constitutional and other legal principles of each country" (Boister, 2001). Therefore, countries are not obliged to establish possession for personal use to be a criminal offence, if they deem it as unconstitutional (Boister, 2001). Bewley-Taylor et al. (2014) also argue that a party need not make cultivation for personal use a criminal offense either. Further, according to, article 3 §4(c) (in UNODC, 2013) allows for alternatives to conviction or penalization for offences related to personal use and other offences "of a minor nature", albeit restricting and strongly discouraging national discretionary powers related to illicit trafficking offences of a more serious nature (article 3 §4(a) in UNODC, 2013).

IV. THE 'VIENNA CONSENSUS' AND ITS CRITICS

The drug controlling regime of the United Nations, guided from Vienna, is based on three laboriously negotiated UN conventions and up until a few years ago, not a single country dared to debate this fragile consensus, the so-called 'Vienna consensus'. Today, Uruguay, Canada and several states in the United States are on a collision course with this 'Vienna consensus' because of political decisions to regulate the cannabis market legally. In doing so, they violate the UN conventions and seem to enforce the reformation of the global drug policy. Bolivia was the first country to withdraw in 2012 from the Single Convention on Narcotic Drugs of 1961, to then accede once more in February 2013, with a reservation concerning the coca leaf.

Even the UNODC, the UN agency which monitors drug markets and assists countries in developing programs against drugs, recognized in 2006 that the thoroughly prohibitionist approach of the three UN Drug conventions was not justified in the case of cannabis. In fact, in its *2006 World Drug Report*, the UNODC stated: "Much of the early material on cannabis is now considered inaccurate, and … a series of studies in a range of countries have exonerated cannabis of many of the charges levelled against it." (UNODC, 2006); "[M]edical use of the active ingredients, if not the plant itself, is championed by respected professionals." (UNODC, 2006). "The world has failed to come to terms with cannabis as a drug. (...)This incongruity undermines the credibility of the international system, and the time for resolving global ambivalence on the issue is long overdue. Either the gap between the letter and spirit of the Single Convention, so manifest with cannabis, needs to be bridged, or parties to the Convention need to discuss redefining the status of cannabis" (UNODC, 2006). Two years later, the then head of the *UN Office on Drugs and Crime* stated: "Cannabis is the most vulnerable point in the whole multilateral edifice. In the Single Convention, it is supposed to be controlled with the same degree of severity as cocaine and the opiates. In practice, this is seldom the case, and many countries vacillate in the degree of control they exercise over cannabis."

The so-called 'Vienna consensus' on cannabis prohibition has been even more radically questioned by numerous national and international organizations. Among these organizations, the most prominent is the *Global Commission on Drug Policy*, which is composed of several former heads of government and states and other world leaders, such as Kofi Annan (former Secretary General of the United Nations) and the former presidents Cardoso (Brazil), Gaviria (Colombia), Zedillo (Mexico) and Dreifuss (Switzerland). The first report by the Global Commission (2011), published in 2011, made news stories around the world when it diagnosed the current drug control system as having failed. The Commissioners came out in support of decriminalization, and it was the first time that such high-level political figures, intellectuals and business leaders had positioned themselves in favour of comprehensive drug policy reform. The Global Commission (2014) continued breaking the taboo when in 2014, it released a ground-breaking report that highlighted five pathways to drug policies that work, including: putting the health and community safety first, ensuring equitable access to controlled medicines, ending the criminalization of people who use or possess drugs, promoting alternatives to incarceration for low-level participants in illicit drug markets, including cultivators and encouraging diverse experiments in legally regulated markets, beginning with cannabis, coca leaf and certain other psychoactive substances.

Several Latin American countries have also become increasingly vocal in expressing their dissatisfaction with the current international drug control regimes, albeit particularly with reference to cocaine rather than cannabis. In 2013 the Organization of American States (2013a; 2013b) published a critical report in which it discussed openly for the first time the unintended consequences of the current system and explored alternative drug control regimes.

V. THE UN GENERAL ASSEMBLY SPECIAL SESSION OF 2016 AND THE 'FLEXIBILITY' OF THE THREE UN CONVENTIONS

Despite these developments and the policy changes in a number of jurisdictions (see infra), the current regime was uncritically reconfirmed at the United Nations General Assembly Special Session (UNGASS) that was held in New York in April 2016, three years earlier than originally planned.[12] Although there was a growing consensus that measures such as investing in health care, treating addicts and providing alternatives for incarceration could offer a better solution for the drug trade than the singular focus on prohibition and criminalization (*New York Times*, 25.04.2016; IDCP, 2016). In spite of the fact that the original intention was to scrutinize all policy options, the three conventions were mainly re-confirmed (Bewley-Taylor & Jelsma, 2016; Metaal, 2016). After all, the final resolution presented the three conventions as corner stones of the international drug policy (Bewley-Taylor & Jelsma, 2016; IDCP, 2016). As far as the reformation of the cannabis policy was concerned, a specific passage from the hence obtained resolution remains debatable – more particularly the following with respect to the concept 'sufficient flexibility':

> … there are persistent, new and evolving challenges that should be addressed in conformity with the three international drug control conventions, which allow for sufficient flexibility for State parties to design and implement national drug policies according to their priorities and needs, consistent with the principle of common and shared responsibility and applicable international law (UN General Assembly, 2016, p. 3).

Unclear is the amount of flexibility that the member states can evince in their way of handling the international conventions. Different interpretations are possible (Bewley-Taylor & Jelsma, 2016; Transnational Institute, 2016). According to the EU, 'sufficient flexibility' also implies the possibility for the UN member states to experiment with initiatives such as harm reduction or the decriminalization of possession for personal use, but not the legalization of cannabis production and trade (Bewley-Taylor & Jelsma, 2016). Bewley-Taylor & Jelsma (2016)

[12] Resolution 67/193 of the General Assembly of the United Nations (20th December 2012), UN Doc. A/RES/67/193 (2012).

state that the idea of 'sufficient flexibility' was interpreted initially by the US as the regulation of cannabis. Still, the dominant vision is that the flexibility of the convention does not stretch as far as the regulation of cannabis (see Van Kempen & Fedorova, 2014). This point of view was also confirmed by Werner Sipp (in Bewley-Taylor & Jelsma, 2016), current chairman of the *International Narcotics Control Board*. In his vision, there is "no obligation resulting from the Conventions to incarcerate drug users for minor misdemeanours" and the treaties foresee "flexibility in the determination of adapted sanctions". Still, he also states that there is no flexibility "in the treaties to allow or regulate any form of non-medicinal use" (Sipp, in Bewley-Taylor & Jelsma, 2016). This statement continues on Sipp's preface in the report of the INCB (2016) in 2015. Here he wrote: "State parties to the treaties have certain flexibility in their interpretation and implementation of the treaties, within the boundaries that they themselves set out and agreed upon during treaty negotiations" (also see Van Kempen & Fedorova, 2014).

VI. THE POTENTIAL REFORM OF THE INTERNATIONAL DRUG CONTROL SYSTEM

The question here is in which way the drug control system can be modernized in line with the emerging trend (Jelsma & Armenta, 2015; see infra). In its report, the Transnational Institute (2016) sums up different possible reforms. However, the different options should be placed in context, where some nuances might be in order:

- First of all, the possibility to amend a treaty (Transnational Institute, 2016). Drawback is that the amendment is only valid for the approving parties. In other words, other parties cannot be compelled. Besides, all three basic treaties would need to be amended to actually result in a difference in drug policy.
- Secondly, there is the option to move or remove a specific drug from a treaty (Transnational Institute, 2016). In spite of the fact that the WHO has published this request in the case of dronabinol on various accounts, a similar reform has not yet been achieved (Hallam, Bewley-Taylor & Jelsma, 2014). A recently published report by the WHO (2017) concerning 'The Health and Social Effects of Nonmedical Cannabis Use' could brisk up the discussion anew. However, it is unlikely that this will lead to a period of reform.
- Finally, the possibility exists for a member state to denounce and then again adopt a treaty, but with one or several reserves (Transnational Institute, 2016). Since the treaties also cover the trade of legal drugs for medicinal reasons, a complete repeal could imply serious economic and political consequences. By re-adhering, the member state then has the possibility to formulate a reserve and to hence withdraw from certain formulations in the treaty. In the case of the drug treaties, a recent precedent is worth mentioning: in 2011, Bolivia informed the Secretariat-General of its decision to exit the Single Convention as of January 2012. Early 2013 however, Bolivia joined the treaty again, with new reserves, preserving the right on its territory of the traditional chewing of coca leaves, the use of coca leaves in their natural state, cultivating, trading and possessing coca leaves (whenever necessary for legal purposes).
- Question remains whether a reserve whilst envisioning legalization of cannabis, is one of the options. After all, article 19 of the Vienna Convention on the Law of the Treaties (1969; VCLT) claims that a reserve should not be 'incompatible with the object and purpose of the treaty' (1969; see also Jelsma, 2016).

In spite of these restrictions, both the United States, Canada and Uruguay – the countries which so far have allowed official markets for non-medicinal cannabis (we will cover these reforms once more in the next chapter) – declared that their altered policy is not a violation of the UN conventions on drug control. Uruguay reasons that its policy fully complies with the original objectives as emphasized in the drug control conventions. The United States adopted a formalistic position by stating that the federal government of the US as a treaty contracting party does not violate the conventions since cultivating, trading and possessing cannabis are still regarded as criminal offences according to federal law (Bewley-Taylor & Jelsma, 2016).

C. THE EUROPEAN CONTEXT

Until the eighties, the European drug policy remained a domain with exclusive authority for the national states. The first European policy initiative in the field of drugs was the installation of *Cooperation Group to Combat Drug Abuse and Illicit Trafficking in Drugs* in 1980 within the Council of Europe, with as goal to execute analyses and exchange experiences. This group was founded at the initiative of then French president Pompidou and is therefore known as the Pompidou Group.

On the level of the European Community, the predecessor of the European Union, the first drug policy initiative was emitted by the European Parliament. A temporary commission was founded in 1985, which published a report on 'drugs problems in the Member states of the Community' (European Parliament, 1985; for a summary, see: De Ruyver & Fijnaut, 2014). In 1990, a second commission was installed within the European Parliament to discuss this theme further.

I. THE SCHENGEN AGREEMENT OF 2000

Drug policy became a significant topic in the negotiations about the Schengen Agreement (2000), which was formed initially between Belgium, Germany, France, Luxemburg and the Netherlands. This agreement included the gradual abolishment of controls at the shared internal borders of the treaty contracting parties, as well as an array of measures to stop the negative results of this abolishment. Some of these measures related to drug policy. Article 6 of the Schengen Agreement for instance stated that the member states were held to "combat the illicit trafficking in drugs on their territory and to coordinate their actions in this context efficiently" (Schengen Convention, 2000). In article 9 it was stipulated that they should enforce the mutual police and customs collaboration in the short run. In article 19 it is stated that, in the long run, harmonization of legislation and legal directives is the goal, especially in the field of drugs. Hence, the Agreement spans a wide and general context where, with respect to drugs, the fight against local illicit trafficking through inter-state cooperation forms the core. However, the Agreement contains neither a definition of 'drugs' nor a reference to cultivating or other actions concerning cannabis – cultivating cannabis was not at that time a wide-spread phenomenon in Europe (Van Kempen & Fedorova, 2014).

The Convention Implementing the Schengen Agreement of 14th June 1985 (Schengen Convention or SC, 2000) pays specific attention in chapter six to the drugs, including cannabis. The UN drug control system played a determining role here. This is expressed in article 71, paragraph 1 SC. In this stipulation, it says that the member states are bound to "comply with the existing United Nation Conventions, to take all measures necessary for the prevention of trafficking narcotic drugs and psychotropic substances". For the definition and legal status of cannabis, one is referred back to the UN drug conventions. According to article 71, paragraph 2 SC, the Schengen member states are obliged to 'use administrative and penal measures to stop illegal export […] as well as the sale, supply and handling' of cannabis'. This implies that the member states are compelled to make these actions criminal. According to Van Kempen and Fedorova (2014), this article does not imply "actual prosecution in each concrete case', but that 'it is difficult to maintain that a member state which does not respond with legal action – through tracking, persecuting and criminal prosecution – complies with this stipulation". However, the Schengen Convention does not refer anywhere to cultivating or other production treatments of cannabis. Article 71 paragraph 2 does not compel the member states to make the possession of cannabis as such criminal, but to do so for cannabis possession *in fine* of supply (art. 71 paragraph 1 SC). Hence, member states should make the cultivation of cannabis criminal when this occurs in view of supply or export. The context of the UN conventions continues to be fully determinative for all other forms (Van Kempen & Fedorova, 2014; De Ruyver & Fijnaut, 2014).

In view of the more liberal coffee shop policy in the Netherlands (infra), the Schengen countries decided to leave some leverage to divert from the stipulations in article 71 paragraph 2 SC. In this context, the final declaration included in the Schengen Convention (article 71, paragraph 2 SC), states that:

> All convention contracting parties [will take] the penal and administrative measures to prevent the illegal import and export of those drugs and substances in particular to the territory of the other convention contracting parties.

The Schengen area has expanded gradually and now consists of 22 EU member states, as well as Iceland, Norway, Switzerland and Liechtenstein. The agreement has been an integral part of the EU conventions since the coming into force of the Amsterdam Treaty.

II. THE 2009 CONVENTION ON THE FUNCTIONING OF THE EUROPEAN UNION AND FRAME DECISION 2004/757/JBZ

Since the establishment of the European Union, the legal foundation for actions by the Union in the context of penalizing and sanctioning illegal drug trafficking can be found in article 83 of the Treaty on the functioning of the European Union (TFEU), which became effective in December 2009. This article determines that in the context of judicial cooperation in criminal cases (chapter 4 TFEU), the European Parliament and the Council "[can] establish minimum rules concerning the definition of criminal offences and sanctions in the areas of particularly serious crime with a cross-border dimension resulting from the nature or impact of such offences or from a special need to combat them on a common basis" (art. 83 paragraph 1 TFEU).

In this light, the Framework Decision 2004/757/JBZ by the Council of 25th October 2004 concerning the determination of minimum rules concerning the parts of criminal offences and sanctions for combatting drugs trafficking also matters (hereafter: Framework Decision). This is the most important tool in the context of harmonizing legislation and practice of the EU member states with respect to drugs trafficking. The Framework Decision also continues on the UN drug conventions. Goal is to further develop the Schengen acquis legally. The Framework Decision states that not only export, but also production should be penalized. Article 2 states that:

> 'Crimes linked to trafficking in drugs and precursors':
> Every member state will take the necessary measures to ensure the penalization of following acts when no justifiable foundation is present:
> a) producing, manufacturing, extracting, preparing, offering, selling, distributing, merchandising, delivering, regardless of the conditions, trading, passing, transporting, importing or exporting drugs;
> b) cultivating poppies, coca plants or cannabis plants (…) (Council of the European Union, 2004; also see Van Kempen and Fedorova, 2014).

This also states that the cultivation of cannabis plants, not containing any flowering and fruit-bearing tops and resin, is already a committed crime. Hence, Van Kempen and Fedorova (2014: 121) conclude,

> Also the Framework Decision confirms the criminalization obligations which result from the UN Illicit trade convention also apply to cannabis cultivation. What is more, it also adds the harmonization of sanctions. The criminalization obligations in the Framework Decision imply that legalization or decriminalization of cannabis cultivation, supply and trade for recreational use is not possible (also see De Ruyver and Fijnaut, 2014: 79-80).

III. THE EUROPEAN DRUGS STRATEGY FOR 2013-20

For the current drugs policy, the *EU Drugs Strategy 2013-2020* is the most important document on a European level (Council of the European Union, 2012). This 'strategy' comprises the overarching political framework and the priorities for the European drug policy for the period 2013-2020. It was launched alongside the Action plan on drugs for the Years 2013-16, which specifies and operationalizes the objectives of the strategy. In concurrence with earlier documents, these two documents emphasize the push back of the demand for drugs and the reduction of supply as two important action points. As far as the reduction of supply is concerned, more specific attention is paid to establishing a measurable decrease of the availability of illicit drugs by disrupting illicit drug trade, dismantling the criminal groups involved in drug production and/or trade, an efficient use of the legal system, an effective, information-driven judicial maintenance and an increase in the exchange of information (Council of the European Union, 2012). This supply-related objective is specified in eleven priorities, of which three are of significant importance for this text. The first priority relates to the 'reduction of border-crossing and intra EU production of illicit narcotic substances, the smuggle and trade, and the distribution and selling, facilitating activities envisioning this, and forcing back the illicit trade in drug precursors, pre-precursors and other essential chemical substances used for the manufacturing of illicit narcotic substances.' (Council of the European Union, 2012: 6).

This priority is completely in line with the restrictive approach of the UN. The two other priorities however enable a certain amount of interpretation margin for the member states by stating that the drug policy should be made more efficient by paying more attention to policy evaluation and analysis and by promoting alternative policy initiatives for users:

> The Union strives for a more adept policy regarding the reduction of the drugs supply, by fine-tuning the evaluation and analysis of the policy and hence obtaining better insights in drug markets, drug-related crimes and the efficiency of drug-related judicial reactions.
> (...) To prevent criminality and recidivism and to improve the efficiency and efficacy of the legal system, whilst respecting analogy, the Union stimulates, wherever needed, the monitoring and the effective execution of drug measures and programs, including referral after arrest and suitable alternatives for sanctions (such as education, treatment, rehabilitation, after-care and re-integration in society) for drug-using delinquents (Council of the European Union, 2012: 6).

Chatwin (2014) and De Ruyver and Fijnaut (2014) all too rightly emphasize that the European drug policy is established in close collaboration between the European institutions and the member states. This also implies that no member state can disregard the policy without losing credibility.

IV. THE STUDIES OF VAN KEMPEN AND FEDOROVA

In 2014 and 2016, at the request of the Dutch Department for Safety and Justice, Van Kempen and Fedorova have published two thorough analyses on the admissibility of cannabis cultivation for recreational use in the light of the UN drug conventions and EU regulations on drugs (2014) and positive human right obligations (2016).

In the first study they analysed, besides the previously discussed conventions and decisions, the jurisprudence of the European Court of Justice, which obtained full authority at the end of December 2014 to apply criminal law and police and judicial collaboration. Although the Court has not passed judgment so far concerning this collaboration, Van Kempen and Fedorova (2014) conclude that the Framework Decision of 2004 also contains a prosecution obligation for illicit drug trade whenever analogue or effective maintenance requires this. Considering the current jurisprudence of the European Court of Justice and the severity it attributes to drugs trade,

drugs facts, which according to EU law have to be made criminal by obligation (cf. supra) are submitted in principle to an even more absolute prosecution obligation when serious facts are concerned. By means of this legal analysis they conclude, like De Ruyver and Fijnaut (2014), that the current European policy does not leave room for the complete legalization of cannabis.

However, in the second study, Van Kempen and Fedorova (2016b) state that, in line with several advocates of a reform of the drug policy, the assessment can and even should change, when the matter is not only approached from the internal legal perspective, but also from the external perspective of human rights conventions. They refer to the Convention on economic, social and cultural rights, the Convention on civil rights and political rights, the European Social Charter and the European Convention on Human Rights. From this external perspective, there appears to be room for a (regulated) legalization of cannabis cultivation and trade for the purpose of the recreational user market. Van Kempen and Fedorova (2016b) reason that the right to health, the right to life, the right to humane treatment and the right to private life, entail positive obligations for states. When the states can prove that the regulated admission of cannabis cultivation and trade for recreational use is more in keeping with those positive human rights obligations than the current policy, then these positive obligations resulting from international law take precedence over the obligations from the UN drugs conventions. Van Kempen and Fedorova (2016b) do emphasize however that the legalization and regulation of cannabis cultivation and trade is only justified when the following conditions are met:

> The decision for a similar regulation will have to be supported publicly and it should be supported by a national democratic decision.
> (…) It should concern a closed system, ensuring that other countries are not disadvantaged by the regulation.
> (…) The state is obliged to support an active discouragement policy of cannabis use (Van Kempen and Fedorova, 2016a).

When all these conditions are met, states also have sufficient room on an international legal level to proceed to legalization, notwithstanding the obligations covered by the drug conventions. Van Kempen and Fedorova's (2016b) second study hence offers a new perspective, based on human rights.

D. CONCLUSION

The restrictive Belgian cannabis policy finds its inspiration and formal justification in the international drug control regime which has been shaped since the beginning of the 20th century. Three UN Conventions – which were drawn up for signature in respectively 1961, 1971 and 1988 – still form the pillars on which the policy in question is based. None of these three however offer room for even a partial regulation of the cannabis market. Even more: according to these conventions, each contact with the product should be prosecuted, including for instance possession in view of personal use. The sole exception is the situation which covers 'medical and scientific research'.

However, Art. 3, §2 of the Convention of 1988 does offer an 'escape clause'. In that article, it is stated that the sanction by the state of the 'possession, purchase or cultivation of narcotic drugs or psychotropic substances for personal use' should occur 'whilst respecting the constitutional principles and foundations of its legal system'. According to some scientists and certain countries (such as the Netherlands), this clause implies that countries are not obliged to issue sanctions for the possession, purchase and cultivation for personal consumption, as far as they view this to be unconstitutional. Hence, this 'escape clause' could offer perspectives to enable users to cultivate cannabis for personal use within small, closed communities (so-called cannabis social clubs).

In the light of a possible reform of the cannabis policy, account should be taken of the current European context. To this day, this context mainly consists of the following components:

- The Schengen Agreement and the Acquis of this agreement, which have been an integral part of the EU conventions since the Amsterdam Treaty became effective in 1999;
- The Framework decision of the Council of 25th October 2004 concerning the determination of minimal regulations regarding the components of legal offenses and sanctions which are significant for the combat against illicit drug trade;
- The EU Drugs Strategy 2013-2020.

These texts all continue in line of above-cited UN conventions on drugs. These documents hence also adhere the idea that the legalization of cannabis cultivation, as well as the supply and trade aimed at recreational use is not possible.

In spite of this strict legislative context, various jurisdictions outside of Europe have radically reformed their cannabis policy since the last decade. Since the seventies, the Netherlands have also given the go-ahead for the sale of cannabis in coffee shops and several EU states have taken steps to decriminalize all use-related drug facts (infra).

According to some scientists and advocates of a reform of the drug policy, countries can be exonerated from the obligations which were called to life by the UN and the European conventions, and this from the perspective of human rights conventions. The rights acknowledged by these conventions – such as the right to health, the right to life, the right to humane treatment and the right to a private life - entail some positive obligations in the field of human rights. When states can indicate that the regulated permission of cannabis cultivation and trade for recreational use could merge better with these obligations than the current policy, these positive obligations resulting from international law take precedence over the obligations from the UN conventions on drugs.

6. THE REFORM OF CANNABIS POLICY IN VARIOUS LEGAL DOMAINS

It is almost ironic that the approval of the Single Convention was swiftly followed by an increasing popularity and use of illegal drugs – especially cannabis – among western youth. First in the United States and then in Europe, cannabis became the most frequent drug of preference for those who participated in the upcoming counter-cultural movements. In spite of the fact that drug enforcement activities had been focused especially on this since the 1960's, which resulted in criminal convictions, fines and even incarceration for many especially young people, cannabis continues to be the most frequently used illegal drug until this day.

As indicated above: the insight that the war on drugs is definitely lost will not seep through via the large, trans-national organizations and bureaucracies (Cohen, 2003). It is through changes of course in the local and national policy that the points of departures of the 'war on drugs' will be enfeebled, and many countries have understood this clearly by now (Levine, 2003; Teurlings & Cohen, 2005; Chatwin, 2007). The same problems are encountered all over the world, and in numerous countries ways to leave the path of 'the war on drugs' are sought actively. In various countries, a debate has risen on the goals, the (in)efficiency and the unintended effects of the applied cannabis policy. In various places, experiments have been carried out with more or less explicit deviations from the letter and the spirit of the three UN conventions.[13] More and more countries, regions and cities test the pliability of the international conventions, because they gain more insight into the complex nature of the drugs phenomenon and the possible strategies to handle (Bewley-Taylor, 2003; Roberts et al., 2005). They no longer want to wait when and how the international conventions and agreements will be reviewed; as quickly as possible, they want to develop a policy that enables them to get a grip on the phenomenon and its problematic aspects (Bewley-Taylor, 2003). In this paragraph we will describe consecutively the 'silent revolution' of decriminalization and depenalization of cannabis in many countries, the Dutch coffee shop model, the medicinal marihuana models, the rise of the cannabis social clubs, the legalization projects in various American states and the Uruguayan cannabis model.

A. DECRIMINALIZATION AND DEPENALIZATION OF CANNABIS USE

Since the seventies, various jurisdictions have scaled down the criminal sanctions for the possession of small amounts of cannabis. Pushing back these sanctions is called depenalization. Decriminalization rather implies the complete abolition of the criminal status of cannabis use, which happens rarely, at least *de jure*. In the Dutch-speaking debate, the two terms 'depenalization' and decriminalization are used mixed. For the legalization of cannabis in Uruguay and in some US states in 2012-13, both terms related to a whole array of policy measures with respect to cannabis use in countries where the supply of cannabis for recreational purposes remains illegal. The original decriminalizing policy measures hence do not refer to the approach of the suppliers of cannabis in specific countries, they only make a distinction of those who are found in the possession of cannabis (with the intention to use).

[13] As early as the end of the 1960's and 1970's, various countries have installed ad-hoc-commissions to research illicit drug use and the related policy: the UK (*Advisory Committee on Drugs Dependence*, the so-called *Wootton Report*, 1969), the Netherlands (Commissie Baan, 1970 and Commissie Hulsman, 1971), the US (*The Shafer Commission*, 1972), Canada (*The Commission of Inquiry into the Nonmedical Use of Drugs*, generally known as the *Le Dain Commission*, 1973) and Australia (*Senate Social Committee on Social Welfare*, 1977). According to Bewley-Taylor et al. (2014, pp. 27-28), these commission reports "often drew the same conclusions. Cannabis was no harmless psychoactive substance, but compared to other drugs, the risks were exaggerated." Besides, many observers indicated that a general consensus existed that "the effects of the criminalization of cannabis have possibly been excessive and the means even counterproductive" (Room et al., 2008, p. 96; Ballotta et al., 2009, p. 106-109). The reports carried merely limited influence on the international debates on drugs control, but still resulted in a number of slight deviations from the zero tolerance approach of the conventions.

In the seventies, twelve states of the US have abolished or substantially diminished the criminal sanctions for the possessions of small amounts of cannabis. This liberation movement ended abruptly in 1978 and not a single state initiated decriminalization in the following 20 years. In the past years, a handful of states of the US – including California in 2011 and Vermont in 2013 – have decriminalized the possession of small amounts of marihuana completely (Caulkins et al., 2015).

In Europe, Italy (since 1995, although re-criminalization took place between 1990 and 1993), Spain (since 1983) and Portugal (since 2001) are examples of countries which preferred complete decriminalization as policy option (EMCDDA, 2012).[14] In other countries, the situation is less conclusive. In the Netherlands and Germany for instance, the possession for personal use continues to be a criminal fact legally, but the factual directives for police and justice are aimed at avoiding penalization, which also applies for fines and other administrative sanctions when the amount is insignificant or for personal use (e.g., Schäfer & Paoli, 2006). In spite of the differences in legal approaches of cannabis within Europe, the *European Monitoring Centre for Drugs and Drug Addiction (*EMCDDA, 2012) concludes, after considering EU policy choices on cannabis, that there is a common trend among the member states in the development of alternative measures for prosecution in case of use and possession of small amounts of cannabis for personal use, and that this trend did not have any negative impact on cannabis consumption and the related harms. Fines, cautions, probation, exemption from penalization and counselling were preferred by most European legal systems. An interesting point is that, in these cases, cannabis in particular was discerned frequently from other drugs and it received special treatment: either from the law, from the directives of the prosecuting institutions, or from the judicature.

However, caution necessitated the EMCCDA (2012) to also emphasize that 'police arrests for drug offences, mainly those involving cannabis and mainly use-related offences, are increasing in most European countries'. Depenalization or full decriminalization of cannabis possession offences also occurred on other continents, particularly in several Australian states and territories and in Latin America. In some cases, these soft defections from the UN conventions include the cultivation of a limited amount of plants for personal use (Bewley-Taylor, 2012; Rosmarin & Eastwood, 2012).

In a very recent report ('A quiet revolution: drug decriminalization across the globe') Eastwood, Fox & Rosmarin (2016) describe the models of decriminalization (in the most ample sense of the word, including depenalization) as implemented in 25 different countries: Argentina, Armenia, Australia, Belgium, Chili, Colombia, Costa Rica, Croatia, Czech Republic, Ecuador, Estonia, Germany, Italy, Jamaica, Mexico, the Netherlands, Paraguay, Peru, Poland, Portugal, Russia, Spain, Switzerland, American states such as California, and Uruguay.

The proliferation of these initiatives all over the world indicates that depenalization and decriminalization is a feasible and successful policy option for many countries. Decriminalization did not lead to catastrophic situations, as many have predicted and continue to predict. The report by Eastwood et al. (2016) indicates that the drug enforcement policy of a country displays little correlation with the scope of the drug use and abuse in a jurisdiction. Countries with strict criminalization systems in some cases display the highest prevalence numbers in terms of drug use in the world, as opposed to countries which applied a decriminalization policy and have the lowest prevalence numbers. More than 50 years ago, the structure of the current drug prohibition was installed, but we should not forget that some countries now have over 40 years' experience with a form of decriminalization of drugs. We can learn as much from these countries about the enforcement of a drug policy as from countries with a regime of aggressive drugs prohibition. It is important to thoroughly study and listen to the experience of these countries.

[14] These three countries have decriminalized all pschyoactive substances, not only cannabis.

B. THE DUTCH COFFEE SHOP SYSTEM

I. THE EVOLUTION OF THE DUTCH POLICY OF TOLERANCE

After a revision of the Opium Convention in 1976 and the Provisions for the research and prosecution in 1979, the Netherlands have allowed limited retail trade of cannabis for recreational use, a resolution which in the end resulted in the institutionalization of the so-called 'coffee shops' (Blickman & Jelsma, 2009; Chatwin, 2003; Decorte & Solinge, 2006; Korf, 2002; 2008; 2011; Ooyen-Houben, 2006). According to this regulation, the possession of cannabis continues to be a crime, but the government applies a policy of tolerance and has drawn up guidelines for the use of discretionary authorities. These prescribe that the lowest juridical priority should be given to detecting and prosecuting cases with respect to cannabis for personal use. As a result, adults can buy (and use) cannabis in authorized coffee shops, without running the risk of being arrested.

In the directives, the conditions for the sale of cannabis in coffee shops is specified further. The threshold for the allowed amount which can be bought per transaction, was 30 grams back then. However, in 1996 this threshold was lowered to five grams, in view of the problems with drug tourism (Ooyen-Houben, Bieleman, & Korf, 2014; McCoun & Reuter, 2001). The activities of the coffee shops have been regulated since 1991 by means of the AHOJ-G rules (Fijnaut & De Ruyver, 2014; Korf, 2002). Analogous with the letters in this acronym, it concerns the rules on the prohibition to advertise (*'Affichering'*); the prohibition to sell hard drugs (*'Harddrugs'*); to avoid disruption (*'Overlast'*); the prohibition to sell to youngsters (*'Jongeren'*) and the prohibition to surpass the maximum delivery amount of 5 grams per transaction (*'Grote hoeveelheden'*) (Korf, 2002, 2008; MacCoun, 2013; Monshouwer et al., 2011; Ours, 2011). In addition and at this moment, coffee shops are allowed to have maximum 500 grams of cannabis in stock.

The Dutch authorities and most scientists claim that the Dutch model complies with the international drugs conventions, although these conventions prescribe the criminalization of cultivating cannabis, possessing and trading it for non-medicinal purposes. Observers therefore believe that both conventions are respected in the Dutch legislation. Both the Dutch authorities and many scientists refer to the escape clause of the UN convention 1988 to consider the constitutional principles of their legal system in terms of the possession, the purchase and the cultivation for personal consumption (also see chapter 5 on this) – which was also emphasized in a reservation made by the Netherlands upon signing (Van Laar, Cruts, van Ooyen-Houben, Croes, van der Pol, Meijer, & Ketelaars, 2014).

In spite of the reservations of, among others, the powerful International Narcotics Control Board, an independent service of the UN which controls the implementation of the three UN conventions, it is debatable whether the escape clause can actually be stretched to the sale and possession of amounts for commercial purposes, which is allowed de facto in the coffee shop system (Fijnaut & De Ruyver, 2014; Bewley-Taylor et al., 2014). Even more so, the UN convention of 1988 (in Art. 3 §4, a) explicitly restricts the applicability of discretionary authorities within national legislation with respect to crimes connected to illicit drug trade.

The Dutch system receives a lot of praise in the academic and legal literature for attaining its original policy objective, more particularly, separating the market for soft drugs from the one for hard drugs (McCoun & Reuter, 2001; 2011). As such, it was attempted to avoid the *gateway effect*, where soft drugs users seek their refuge in the 'black' market with all dire consequences (MacCoun & Reuter, 2001b; MacCoun, 2011; Ooyen-Houben, 2006; Reinarman, 2009).

Besides the advantages which a separation of the market for soft drugs and hard drugs entails, the presence of coffee shops does not seem to have any significant impact on consumption habits. Korf (2008) concludes in this

context that the trends for cannabis use in the Netherlands are parallel to the ones in other European countries. The cannabis use has been growing in the Netherlands since 1976, but this growth seems to be in concordance with more general European trends. Finally, it can also be indicated that the prices of cannabis have remained relatively high after the introduction of the model. This is related to the unusual hybrid model where, on a national level, the use of cannabis is legalized de facto, but where in the Netherlands and the rest of Europe the cultivation and wholesale trade of cannabis are still prohibited (MacCoun, 2011). This system leads to the fact that the coffee shop managers are in a somewhat grey zone.

In spite of all this, the drug systems has been criticized for two reasons in the past twenty years. First of all, the coffee shops have stimulated drug tourism unintentionally – especially from neighbouring countries-resulting in quite a bit of public disruption in a number of Belgian and Dutch border municipalities. The second point of criticism has a more fundamental nature and relates to the so-called 'backdoor problem'. The original idea that coffee shops would be provisioned via the infamous backdoor by idealistically inspired hobby growers, has proven to be indefensible these past decades. This is related, for example, to the increased demand for cannabis, but also to the repressive approach of cannabis cultivation, which led to a 'more criminal' cannabis industry. Although selling cannabis to consumers in coffee shops is tolerated, supplying coffee shops continues to be illegal, and this is ensured by criminal networks and organizations which appear to become ever more powerful (Fijnaut & De Ruyver, 2014). What is more, the demand of coffee shops (and their clientele) necessarily stimulates the cannabis cultivation in the Netherlands and in some of its neighbouring countries. Part of the production of cannabis intended for the Dutch market has expanded to Belgium and Germany, and it possibly has been moved due to increased efforts by the Dutch law enforcement institutions (see, for example, Paoli, Decorte & Kersten, 2015). An additional weakness in the Dutch system is that it does not enable any quality control or labelling norms with respect to the sold cannabis (Caulkins et al., 2015; Depla, Everhardt & van Gijzel, 2014).

Also in the light of tackling these problems, the number of coffee shops has fallen strongly (Van Dijk, 1997; Korf, 2002; Blom, 2006; van der Veen, 2009). Before, more than 1.000 coffee shops were present, whereas a few hundred now remain (Ooyen-Houben, Bieleman & Korf, 2014). Considering the increasing demand for cannabis and the decreasing amount of coffee shops, it should not be surprising that the pressure on the remaining coffee shops simply had to augment: after all, a larger clientele forces the coffee shop managers to have larger stocks. The result: tighter fitting relations with large-scale producers, more disruption around coffee shops and more mere presence effects on people who want to palm off other drugs in the vicinity of coffee shops. And also: the fewer coffee shops around, the more unlicensed, illegal sales outlets of cannabis (Wouters & Korf, 2009). As of 1st January 2012, two other restrictive alterations where therefore implemented in the tolerance policy with respect to Dutch coffee shops. Since then, coffee shops have been compelled to respect two additional criteria: the private club criterion and the residents criterion. Accordingly, coffee shops were only allowed to admit registered members and to sell cannabis to them. They have to keep up a controllable membership file and only Dutch residents were allowed to become a member and hence entering the Dutch coffee shops. However, the private club criterion was abolished after only a few months in November 2012. The resident's criterion was still valid, but the decision to either or not implement it, is left at the discretion of local authorities. The first evaluations indicate that municipalities differ significantly in the enforcement of this criterion (van Ooyen et al., 2014).

II. THE CURRENT DEBATE

In spite of recent policy changes, the coffee shops have been targeted from both sides of the debate on drug policy.

Since the nineties, a number of criminologists have pointed out that the government has personally shielded and stimulated an illicit market by tolerating the retail trade for a long time. The study group Fijnaut, assigned by the parliamentary committee of Inquiry into Detection Methods (1995), researched organized crime in the

Netherlands and concluded as early as 1995 that the autochthonous perpetrators of organized crimes have been able to develop into successful illicit entrepreneurs in the lee of the tolerance policy. 'Dutch networks' were even then not only active with the import of hash, but also with the production and export of nederweed, ecstasy and other synthetic drugs. At the end of an extensive research, Bovenkerk and Hogewind also concluded in 2003 that the coffee shops were no longer provisioned by the "friendly home growers who sell their surplus at the backdoor of the local coffee shop", but by a branch which had been infiltrated by an "unambiguous criminal element" (Bovenkerk en Hogewind, 2003, p. 143).

Since then it has become clear that a very successful cannabis industry has risen in the Netherlands and that this industry also entailed eliminations and other forms of violent crimes, corruption and substantial damage for society and environment. With concern, the Advisory Committee Drug Policy – which was established by the Dutch government in 2009, chaired by Van De Donk – had it noted that:

> The production of cannabis [has] developed strongly by means of modern cultivation techniques, with which a large-scale, high quality availability could be created for national consumption and for export. By now, cannabis production is no longer concentrated in our country but often led by organizations equally enterprising and criminal, it has been transferred to other European countries also" (Advisory committee, 2009, p. 19).

Based on these developments, Henk van de Bunt concluded in 2006 that "the line of reasoning that the cannabis market could be drawn away from marginality and criminality by the policy of tolerance, has proven to be incorrect", followed by the remark that "the policy of tolerance is cracking at the seams and grating at all ends" (Van der Bunt, 2006, p. 20).

A number of scientists go even further and emphasize that "the coffee shops do not only form a problem at the 'front door' and the 'backdoor', but that the whole interior construction is no good" (Fijnaut & De Ruyver, 2014, p. 270). Several study and governmental projects indicate that a substantial number of coffee shop owners have criminal antecedents (see Snippe et al., 2004). The best proof for this is delivered by the project 'National Screening Coffee shops'. This project was conducted during the period 2011-14 by the National Agency of the Dutch Ministry of Safety and Justice which also ensured the granting of advice in the context of executing the Law for the stimulation of integrity assessments by the public administration (Bibob law – national public administration probity screening agency). For the years 2012 and 2013, a total of 110 coffee shops were screened. In 54 cases, advice was delivered to the involved local authority. In three of these cases it was concluded that it concerned 'a lesser form of risk' and in 38 cases 'serious risk' of abuse of delivered licenses; only in thirteen cases 'no risk' was reported (National Bibob agency, 2014, as summarized in Fijnaut and De Ruyver, 2014, p. 270).

Because of these arguments and considering the increasing commercialization of the coffee shops, Fijnaut and De Ruyver conclude that the coffee shops "have created major problems in Dutch society" and they plead for "the general abolition of coffee shops" (Fijnaut & De Ruyver, 2014, p. 269 and 271). The recommendations of the Advisory Committee Van de Donk also headed in this direction, although this committee did not defend a prohibition on coffee shops. Whereas the committee came up with several policy scenarios, its preference was expressed for a form of closed coffee shop system with a regulated backdoor, where coffee shops are altered into clubs "with a clearly defined fairly stable membership file" and hence "become local service outlets for the local or regional consumer" (Advisory Committee, 2009, p. 46 and 49).

Various other scientists and representatives of the government however advocate complete legalization, although they largely agree with the previous analysis and although they are also driven by an increasing discomfort with the current situation. In this light, the mayors of 35 Dutch cities (including Utrecht, Groningen, Amsterdam and Rotterdam) in 2014 signed a manifest calling for the legalization and regulation of cannabis cultivation, in

open breach of the UN conventions (Depla et al., 2014). The number of mayors which signed the manifest, amounted to sixty in October 2015 (VOC, 2016b). The territory which is governed by these mayors covers 79.89% of the total number of coffee shops in the Netherlands (VOC, 2016b). Their request is motivated by problematic side effects resulting from the current policy, which cities experience in the field of health of the cannabis user, safety of the neighbourhoods and organized crime (Fijnaut & De Ruyver, 2014). As far as the health of the cannabis users is concerned, the mayors noticed a great deal of harmful consequences (Fijnaut & De Ruyver, 2014). After all, the production process is not supervised, which does not improve the quality of the cannabis. For this reason, they plead for more control, for instance through a collaboration with certified cultivators or through the elaboration of certain quality demands (Depla et al., 2014). The safety of the neighbourhoods is threatened by the abundance of illicit plantations. These problems could also be eradicated when cultivation would be regulated (Depla et al., 2014). Finally, as far as organized crime is concerned, above-mentioned illicit plantations should disappear to dismantle criminal collaboration (Depla et al., 2014). A combination of a more transparent and regulated market on the one hand and a stricter approach of illicit cultivators on the other hand, seems to be the best option to them. The mayors also asked the minister of Safety and Justice for permission to experiment with various forms of authorized cannabis production and wholesale trade (De Graaf, 2013).

In May 2016, a study entitled 'International Law and Cannabis II' was published by Van Kempen and Fedorova, two jurists of the Radboud University Nijmegen. This study has been described in detail higher up (see chapter 5, C, IV). These two jurists reason that, from the perspective of human rights (the right to health, the right to life, the right against inhumane treatment and the right to private life) there most definitely is legal room for regulated cannabis cultivation and trade (Van Kempen & Fedorova, 2016b). Human rights should be respected, even more so: they are entwined with positive obligations (Van Kempen & Fedorova, 2016b). An important reference in this report to the Committee Van De Donk concerns the preference for a closed system. After all, the report formulates that the regulated market should not have any negative results for other countries, which would like to adhere to a repressive approach (Van Kempen & Fedorova, 2016b). For the Union for the Abolition of the Cannabis prohibition (VOC) this legal analysis opens the door for the regulation of cannabis cultivation (VOC, 2016a).

Judges also seem to have wanted to make a statement recently: both in Den Bosch and in The Hague, judges did not impose sanctions for a few suppliers of coffee shops, although they had much more than the tolerated commercial stock of cannabis. For some, these arrests are a signal that also the judicial authorities have had enough with the expensive, time-consuming consequences of the randomly imposed Dutch soft drugs approach (Derkzen & Lensink, 2013).

It should be remarked that the Netherlands have been on the brink of legalization or at least toleration of the 'backdoor' before. In the article 'Regulating weed is not a problem internationally' in *Vrij Nederland* (left-wing weekly magazine, 30th November 2013) criminologist Jan van Dijk states that within the Ministry of Justice, plans arose in the middle of the nineties to place the cannabis cultivation under governmental authority (Derkzen & Lensink, 2013: 10-12). D66 (liberal) politicians such as Winnie Sorgdrager (Justice), Els Borst (Health, Wellbeing, Sports) and Jacob Kohnstamm (Home Office) already favoured the regulation back then. Criminologist Jan van Dijk was strategy director at the Ministry of Justice and the College of attorney-generals agreed 'in giggles'. Government advisors even had contact with potential 'state cultivators' and a think tank was constructed with the adherence of lawyers, accountants and drug lords. However: when the ideas were leaked, strong protest came from the French president Jacques Chirac, after which the then prime minister Wim Kok, D66-minister of Foreign Affairs Hans van Mierlo and top official Joris Demmink (the then ruling influential director-general) wiped them off the table.

In spite of the number of mayors which signed the manifest, the Dutch cabinet Rutte II (2012-17) still felt that legalization was not the best solution for the aforementioned problems. Preference was expressed for "a continuation of a strong approach" of cannabis production and trade.[15] In September 2016, opposing political party D66 however reported that Parliament seemed to have gained a majority of people who were in favour of a regulated weed cultivation under auspices of the government. The party elaborated an initiating bill which has to enable this. Plan is that the production continues to be criminal, but that the cultivation by controlled cultivators will no longer be prosecuted. A similar tolerance construction is currently applied to the sale of cannabis in coffee shops. In the bill, it says that coffee shop owners purchase weed from 'licensed suppliers' who cultivate in a closed system. Cultivators will therefore have to pay taxes. In addition, the quality of cannabis will be controlled, which should also limit health risks. The initiative bill by D66 obtained a majority in February 2017 in the House of Representatives (PvdA, SP, GroenLinks, Partij voor de Dieren, 50Plus, VNL, Denk and member of parliament Monasch- green/liberal and left parties- voted for the initiative bill by D66), but in the Senate, a majority of CDA, ChristenUnie, SGP, PVV and VVD (Christian and liberal parties) were opposed to the bill.

In October 2017, a remarkable breakthrough took place: the brand new Dutch government (composed of D66, VVD, CDA en ChristenUnie/green/liberal, liberal and Christian parties) will allow the distribution of legal weed in a number of municipalities. The government weed will be cultivated nationally: one organization will receive a license from the government to cultivate government weed. The ministry in charge will continue to elaborate how and who will regulate everything. The cannabis will then be dispersed among six to ten municipalities. It is a test to see whether criminality will decrease with legal cultivation and whether the weed will contain fewer harmful substances. Municipalities can apply for the experiment. Objective is that mainly medium-sized and big cities will join. This experiment with legal cultivation is a remarkable breakthrough after years of fierce political discussions.

C. MEDICINAL MARIHUANA PROGRAMMES

A very varied range of models for offering cannabis for medical reasons has been implemented (Kilmer et al., 2013). These models, although developed in view of the distribution of cannabis for medical purposes, do display some overlap with models for the distribution of cannabis for recreational use, more particularly in the way in which supply is organized. In some cases, certain jurisdictions (some American states, and also Canada) for instance have developed models for home cultivation, where the product is also suitable for medicinal use (Clarke & Mentkowski, 2015; Pacula, Powell, Heato, & Sevigny, 2015; Penn, 2014). Recently, cannabis social clubs (see further) have risen in Belgium, offering cannabis for medical users and for non-medicinal or recreational users. Some cannabis social clubs focus exclusively on offering cannabis for medicinal purposes (Decorte, 2015). In other cases, cannabis is also supplied to dispensaries for medicinal cannabis, to so-called 'compassion clubs' (these are non-profit organizations that provide patients with medicinal cannabis; they exist, for example, in the US and Canada) or to pharmacies (e.g. in Canada, the Czech Republic, Israel, the Netherlands and in various American states) (Clarke & Mentkowski, 2015; Kilmer et al., 2013; Pacula et al, 2015; Penn, 2014). In some cases, the access to the cannabis offered is more limited than for non-medicinal models, because a valid prescription of a general practitioner might be required and sometimes, cannabis is only provided for previously determined medical afflictions (e.g. in the context of a cancer or HIV treatment). In other jurisdictions, the access to cannabis for medicinal use is controlled less strictly. In some countries, the supply of cannabis is also restricted to a specific product or remedy based on cannabis, such as for Sativex (which for example is the case in Belgium).

Some of these available models have been the subject of evaluation studies, in particular in the US (Cerdá, Wall, Keyes, Galea, & Hasin, 2012; Harper, Strumpf, & Kaufman, 2012), but because there are significantly large differences mutually and since these American models mainly address medicinal use (which does not form the

[15] House of Representatives, 2013-2014, 24077, nr. 315

central focus of this report), we will not fathom this evaluation study.[16] However, in chapter 8, we will formulate some attention points and recommendations concerning the provision of medicinal cannabis products.

D. CANNABIS SOCIAL CLUBS IN SPAIN, BELGIUM AND ELSEWHERE

Cannabis Social Clubs (CSCs) are non-profit clubs of adult cannabis users who cultivate and share cannabis collectively for personal use (Decorte, 2015; Kilmer et al. 2013; Caulkins et al., 2012). In the past few years, this cooperative model of cannabis production and distribution has been discussed with intensified frequency in the international debate on drugs policy, where it was presented as an intermediate model between prohibition and legalization (Bewley-Taylor et al., 2014; Caulkins et al., 2012; Decorte, 2014). In spite of the fact that no international or national regulation exists for cannabis social clubs, clubs if this sort have emerged in the past years in a large number of European countries (Belgium, Slovenia, Spain, etc.)[17] and on top of that, they have also appeared in some South American countries (Argentina, Chili, Colombia, etc.). (Decorte, 2015). In most cases, the clubs claim to apply the national legislation and/or they act in compliance with major judicial decisions; all this within a context of a *de facto* decriminalization policy in the given country. The clubs also often use indifference or absence of a reaction issued by the government (Bewley-Taylor et al., 2014; Decorte, 2015).

In **Uruguay**, Law nr. 19.172 d ensured the legal regulation of this sort of cannabis clubs. According to this law, the clubs can have 15 to 45 members, and they are permitted to produce and distribute cannabis among each other, as long as the limit of 99 plants is not exceeded. A member of a cannabis club may not receive more than 480 grams per year in that club (Kilmer et al., 2013). Solely Uruguayan residents (aged 18 and above) or people with a permanent residence can adhere to a cannabis social club. The new governmental institution *'Instituto de Regulacion y Control del Cannabis'* (IRCCA) is in charge of verifying the national register of the clubs and of monitoring their activities. We will return to this Uruguayan cannabis model below.

In **Spain**, the existing cannabis social clubs are not the result of a reform in legislation, but of a so-called grey zone in local legislation (Alonso, 2011; Arana & Sanchez, 2011; Kilmer et al., 2013; Sanchez & Navarro, 2000). According to the jurisdiction of the Supreme Court and the legal analyses of academic experts, the current Spanish legislation can be interpreted as being tolerant towards 'mutual consumption' and cultivation (in a private venue) for personal use (Arana & Sanchez, 2011; Kilmer et al., 2013; Room et al., 2010), provided that a number of conditions are met.[18]

Since the nineties, hundreds of cannabis social clubs have been formed in Spain, especially in Catalonia and the Basque country, which initially labelled themselves as 'cannabis associations' (Alonso, 2011; Arana & Sanchez, 2011). They operate within an unclear legal framework, which often led to seizure of their cannabis plants and the arrest of their managing members, since further legalization to regulate this production and distribution model failed to be introduced (Arana & Sanchez, 2011; Blickman, 2011; Kilmer et al., 2013; Pepper, 2011).

Mention is also made of the genesis of commercially focused cannabis clubs, especially in Barcelona, which probably function according to different principles than adhered by the cooperative club model, although these organizations do profile themselves as doing exactly that. Spanish activities, the clubs and their federations (e.g. the Federation of Cannabis Associations – FAC) have seized various opportunities to advocate the introduction

[16] Example see: Pacula, R. L., Powell, D., Heaton, P., & Sevigny, E. L. (2015). Assessing the effects of medical marijuana laws on marijuana use: the devil is in the details. *Journal of Policy Analysis and Management, 34*(1), pp. 7-31.

[17] The European Coalition for Just and Effective Drug Policies (ENCOD) recently published an index of European Cannabis Social Clubs. More information to be found at http://cannabis-social-clubs.eu/csc-directory (last visited 13th March 2015)

[18] The CSC's should for instance be closed to the public and access should only be granted to members. For an ample overview of this and other conditions for the functioning of CSC's evaluated by previously conducted legal analyses (Sanchez & Navarro, 2000; Ripolles & Sanchez, 2012).

of a national/regional regulation for this model. As such, they want to annul the legal uncertainty and introduce clear rules about the way in which cannabis social clubs should organize their activities. At this moment, both in the Basque country and Catalonia, proposals for an ordinance are being presented and discussed on a regional level (Bewley-Taylor et al., 2014).

Both the creation and the development of the cannabis club in **Belgium** display strong resemblances with the Spanish clubs. A mutual directive of the Ministry of Justice and the College of Prosecutors General determined in 2005 that the possession of maximum three grams or one cultivated cannabis plant would receive the lowest prosecution.[19][20] One year later, the first cannabis club emerged in Belgium, with the argument that its activities were in line with the directive of 2005. Still, 'Trekt Uw Plant' (Make the Most of your Plan-t-) was summoned twice[21] and the police also confiscated the cannabis plants of the club (Kilmer et al., 2013). These procedures did not result in the conviction of the club members however, nor did it lead to the abrogation of the club. The club has been operational since 2010 without any further intervention of law enforcement authorities. In 2013, other clubs were founded in Belgium: in Hasselt (Mambo Social Club), in Liège (Ma Weed Perso), in Andenne (WeedOut) and in Namur (Sativa). Some of them are now the subject of legal proceedings, but this did not hinder the foundation of some three or four other clubs.

A first explorative study into the cannabis clubs in Belgium was conducted by Decorte (2015; 2014) and occurred based on interviews with the members of the board of direction of each club, an analysis of the internal documents of the clubs (including membership forms, the protocols for cannabis cultivation, the agreements between the clubs and their cultivators, etc.), of their website, and of the media coverage on the clubs in the Belgian press, and of the international literature. The study is approached as a SWOT analysis and covers both the (internal) strengths and weaknesses, and the (external) opportunities, as well as threats to the model as it originated in Belgium.

This, up until now, sole study indicated that the Belgian cannabis clubs charge an annual membership contribution and that they have listed a number of conditions for membership. According to these conditions, members of CSCs have to be practicing cannabis users and residing in Belgium. The fixed minimal age varies: 18 years or older, in other Clubs 21 years or older. In spite of the fact that some of these clubs (e.g. Mambo Social Club and Ma Weed Perso) were threatened with prosecution, adherents of this model continued to fight for this model and for an alteration in the legislation of the country.

In principle, the Belgian 'vzw's' do not have a profit objective and they divide cannabis only among registered members, who have to be regular users before they become member. The clubs also have consumption limits and every form of profit has to be re-invested in the organization. The members have to reside in Belgium, and according to the clubs, they are fairly successful in limiting the risk of drug tourism (a problem which the Dutch coffee shops encountered near the Belgian border) and the passing on of cannabis to non-members (including minors). It should be observed that the CSCs currently are not regulated or inspected by the government: clear governmental regulation would make it possible to actually verify whether the clubs abide with the aforementioned principles.

In addition, most CSCs act as a system where cannabis is not so easy to obtain. The non-profit clubs demand that the members pass a registration procedure with a number of control mechanisms. Members cannot come by daily or weekly, but have to wait for the next 'exchange fair'. New members often have to wait several weeks or

[19] When that possession of cannabis did not entail any aggravating circumstances or public disruption.
[20] Notwithstanding, cannabis production or possession continues to be prohibited by national legislation and is viewed as a crime.
[21] For more information about these verdicts, see Kilmer et al. (2013).

months before receiving their first cannabis. In that respect, the clubs are less visible and 'inviting' than the Dutch coffee shops.

Almost all clubs cultivate according to a protocol which obliges cultivators to grow cannabis ecologically. Consumers have no control whatsoever over the production process, and hence the quality, strength and price of the substances on the black market. In their opinion, CSCs have a relatively direct control over the cultivated varieties, over the cultivation techniques and over the quality and strength (THC content) of the cannabis. Only by means of independent toxicological analyses, can it become clear whether the cultivation procedures applied by the CSCs, offer sufficient guaranty in terms of quality and strength of the cannabis. The non-profit clubs admit that not all cultivators are sufficiently 'professional' and that quality control is superficial. The CSCs are requesting parties for support by medical and toxicological experts.

A regulated and generalized system of CSCs can result in various economic advantages, according to the initiators. A regulation of the CSC model can create employment and bring in extra contributions for social security. According to them, the CSCs indirectly stimulate the activities of economic sectors offering services and material to the clubs (for instance fertilizers, cultivation material, greenhouses, transport, legal advice, etc.). The biggest chunk of the money currently spent by users on the black market, could then be turned into expenses which can be taxed by the government, resulting in higher VAT income (Somers, 2011). The CSC model could possibly reduce government expenses for the control of the cannabis market and for the prosecution of those who produce or sell cannabis with a profit objective.

The Belgian CSCs currently only weaken the black market to a limited extent: they draw in approximately a few hundred potential customers. If the CSC movement were to expand in Belgium, and if the clubs would become a regulated alternative, a significant effect on the black market could probably be expected. What is more, the clubs can contribute to a reduction of the problems related to the illicit market, such as increase of the THC content, cutting and polluting of cannabis, prices, systematic violence, street trade and other forms of illicit trade.

Cannabis activists claim that the clubs could play an important role in the prevention and early detection and referral of problematic cannabis users to counselling and prevention (Somers, 2011). They monitor the consumption of their members, and claim to seek contact with counselling and prevention organizations. According to the clubs, professional counselors refuse to combine forces due to the current legal climate. Whether the CSCs could become valuable partners in focused prevention campaigns (for instance, anti-smoking campaigns or actions related to other health issues) depends, among others, on the question whether the club managers possess the required qualifications. In any case, most clubs already develop flyers with product information and 'tips for safe use' on behalf of their members. Collaboration with professionals in terms of damage-restricting measures and counselling could possibly contribute to actual prevention and referral of problematic users.

Local law enforcers have made various attempts to prosecute the CSCs. The recent history of the Belgian (and Spanish) CSCs indicates that most groups continue to exist, in spite of police interventions and court orders (Vandenbergh, 2013; Spoormakers, 2013). A formal and definitive conviction could discourage users to become member, but it is also feasible that the clubs will go 'underground'.

Another threat for this model is the rise of the so-called 'shadow clubs': criminal entrepreneurs who deliberately use the façade of a social club to cover up profitable production and sale of cannabis (see for similar developments in Spain: Bewley-Taylor et al., 2014). Although only a few incidents have occurred so far, systematic violence by criminal entrepreneurs or malevolent individuals are more worrisome for the clubs than police interventions (Spoormakers, 2013).

A significant weakness in the Belgian CSC model concerns the differences in house rules, structures and organization. The clubs apply different minimal ages (18 and 21 years) and consumption limits. Some clubs are (still) small (13 members), others are fairly large (237 members) and the production and distribution of cannabis happens differently. Four out of five clubs include a small number of 'medicinal users'. They often apply less strict rules (for instance, no consumption limit) for members who have a medical certificate which proves that they suffer from an ailment for which the use of cannabis is recommended. Considering the lack of a proper collaboration and information exchange between the CSCs and medical experts, question remains whether it is a good idea to mix medicinal marihuana and recreational cannabis. Finally, there is also the risk that the CSCs will evolve into organizations with a profit objective.

An important issue for academics and policy makers is whether the factors which threaten the club model and the internal weaknesses of the clubs can be turned around in strengths and opportunities through government regulation. Regulation by the government could possibly offer legal protection for the clubs and a framework for quality control, safe and reliable cannabis production, transport and distribution by the CSCs. Regulation could also lead to the creation of favourable conditions for an improvement of the transparency and a professionalization of the cannabis production in the clubs. Structures, organization and house rules could be standardized to a better level. By commanding clear norms and sanctions (for instance a maximum amount of members, a maximum production capacity and/or THC value for cannabis, or a maximum amount which can be earned by a member of staff), the government could stimulate the stability of and the trust in the CSCs. They can prevent that the clubs become profitable organizations, and at the same time they could install an instructive experiment on alternative regulation of cannabis, tailor-made for the local context. On the other hand, the CSCs have to be sufficiently receptive for the professionalization of their protocols and their organization. They have to accept involvement from the authorities, and assume any legal restrictions and sanctions. Should the Belgian authorities decide to continue to criminalize the clubs, and to not regulate the CSC model, it is very likely that the Belgian CSC's will 'drop off the radar' or that the model becomes 'contaminated' and heads into the same direction as the Spanish clubs.

A second study into the cannabis social clubs in Belgium, with the support of the Fund for Scientific Research (FWO), started in March 2015 and has not been concluded yet. The study covers three dimensions: a) the organization, structure and daily functioning of the cannabis clubs; b) the socio-demographic characteristics and the use patterns of the members of the clubs; and c) the cannabis produced by the cannabis clubs.[22]

E. THE COMMERCIAL MODEL IN A NUMBER OF US STATES

In various states of the US, a competitive, regulated market model has been established: in the states of Colorado and Washington in 2012, in Oregon and Alaska in 2014 (Caulkins et al., 2013; Crick et al, 2013; Kilmer et al., 2013; Marshall, 2013; McGreal, 2014; Room, 2014). This legalization always resulted from a democratic decision process by means of a referendum (*in concreto* Amendment 64 in Colorado, Initiative 502 in Washington, Measure 91 in Oregon and Measure 2 in Alaska) (Crick et al, 2013; Graham, 2015; Kilmer et al, 2013; McGreal, 2014; Pardo, 2014). The voters of four other states – California, Massachusetts, Maine and Nevada – have legalized the supply of cannabis also for recreational objectives in November 2016. Since the legalization process is still in an initial phase in these states and in Oregon and Alaska, and since more information is available on the initiatives in Washington and Colorado, we will focus on these last two cases.

Two different state agencies have been assigned with the task to license and regulate the industry: in Colorado, that responsibility is assumed by the Ministry of Finances, whereas in Washington the State Liquor Control Board

[22] For additional information about this study, see https://www.ugent.be/re/cssr/en/research-groups/isd/projects.htm/cannabissocialclubsbelgiumfwo.htm (last visited 2nd April 2017).

(the institution upholding the laws concerning alcohol, tobacco and cannabis) is designated as authorized agency (Caulkins et al, 2015a; Crick et al, 2013; Kilmer et al, 2013; Pardo, 2014). In both states, the supply model is based on a system of licenses. The state of Colorado uses a vertical license structure (which means that an entrepreneur can obtain a license, and can be both cultivator and retailer at the same time). This is not possible according to Washington's legislation: "an individual can have a double license for the production and processing of marihuana, but producers and processors cannot obtain a license for retail trade in marihuana, nor can they have any direct or indirect financial interest in licensed retailers in marihuana." (Crick et al, 2013; Graham, 2015, p. 155; Pardo, 2014). Washington both has a number of retailers (originally up to 334) and the total production limit is restricted to 180 000 square meters (Kilmer et al, 2013; Pardo, 2014).

A monitoring system 'from seed to sale' has been introduced in both states. This means that "cultivators, processors and sellers have to inform the board (in the case of Washington, Liquor Control Board) about all transactions, and that they have to record when crops are destroyed or harvested." (Crick et al., 2013; Pardo, 2014). In either jurisdiction, retail trade cannot sell any other products besides cannabis, and consumption on the premises is not possible (Caulkins et al., 2015a; Pardo, 2014; Room, 2014). Colorado and Washington also impose a number of conditions with respect to labelling, such as adding messages on the risks or an indication of the THC level (Room, 2014). Restrictions with respect to advertising have also been introduced, for instance the interdiction of misleading statements or the allowance of a single sign board per retail trade (Crick et al., 2013; Room, 2014).

In terms of taxation, Washington applies tax of 25% on the level of production, processing and retail trade (Caulkins, Andrzejewski & Dahlkemper, 2013; Crick et al, 2013; Kilmer et al, 2013; Room, 2014). Colorado has both an excise tax of 15% on the level of wholesale and a tax of 10% for retailers, in addition to an existing local turnover tax (Crick et al., 2013; Kilmer et al., 2013; Pardo, 2014). Part of the tax incomes is destined for initiatives on awareness, research and counselling with respect to cannabis (Crick et al., 2013; Pardo, 2014; Room, 2014). The price of cannabis in these models is determined by the market (Caulkins et al., 2013). Neither Colorado, nor Washington have developed a use register and it is hence possible that individuals, both inside and outside the state, drive to various retailers, where they buy the maximum allowed amount each time to then bundle the product for export outside the state (Pardo, 2014).

A report about the (preliminary phase of) implementation of the model in Colorado is positive and mainly emphasizes six regulating aspects which matter: 1) the monitoring system from 'seed to sale'; 2) the integrated market model; 3) the restrictions imposed on new players on the market; 4) the limit on the allowed amount for sale; 5) the safety conditions for license holders; and 6) the tax system (Graham, 2015; Hudak, 2014). At the same time, Hudak (2014) points out that a number of aspects still merit sharpened attention, such as the regulation on edible cannabis products and the one concerning home cultivation and drug tourism. The population surveys on the consumption of marihuana and other illicit drugs so far do not display any increase in cannabis or general drug use in the states of Colorado and Washington—a fact which is explained by experts by pointing out that cannabis had been widely available in these states prior to official legalization. A recent study indicates a steep increase of 13 to 21 year olds in Colorado with a cannabis-related diagnosis and of people testing positively on urine tests when being admitted to the emergency room: from 1.7 per 1000 patients in 2009 to 4 per 1,000 in 2015 (AAP, 2017; also see Ammerman et al., 2015). Since the competitive, regulated market model has only been introduced recently in Colorado and Washington, it is too early to draw conclusions about the results of this policy.

F. THE CANNABIS MODEL IN URUGUAY

As stated before, Uruguay accepted new legislation at the end of 2013 (more particularly Law 19.172 and the resulting regulations) and hence introduced three simultaneously existing models for the production and distribution of cannabis. The consumer can buy state-produced weed in regular pharmacies (pharmacists with conscientious objections can refuse), in amounts of 5 and 10 grams. Since the government – or an appointed public service – cannot assume the role of 'cultivator' or 'distributor' directly, two companies were licensed to produce state weed. Consumers are also allowed to grow weed themselves. Per household, six plants can be cultivated, with a maximal harvest of 480 grams per year. In addition, the 'social cannabis clubs' exist, where 15 to 45 members are allowed to cultivate a maximum of 99 plants together (Delgado, 2015; Graham, 2015; La Nacion, 2015a; 2015b).

Law 19.172 also ensured the installation of the *Instituto de Regulacion y Control del Cannabis* (Institute for the Regulation and Control of Cannabis, IRCCA). This institute will be the main authority for the implementation of the legislation (Law 19.172; Decree 120/014), including the distribution of licenses for the supply of cannabis, the management of the national databank for cannabis users and suppliers, and the control and inspection of all stages of the supply chain, (Graham, 2015). In August 2014, the IRCCA (2014) mustered cannabis cultivators for the first time to apply as candidates, receiving 22 applications (Cibils, 2014; Cortizas, 2015; EFE, 2014; IRCCA, 2015; Walsh & Ramsey, 2015). In October 2015, the IRCCA shared its decision to grant two cultivators a license for cannabis production (Espectador, 2015; IRCCA, 2015).[23] The cultivators will grow cannabis on state property, where security will be guaranteed 24/7, both by approved companies and by the state itself (Cibils, 2014; IRCCA, 2014; 2015). The companies can produce up to two tons of cannabis each per year, where the cannabis variants will be determined by the IRCCA (Cibils, 2014; IRCCA, 2014). The production licenses will be valid for a period of five years (IRCCA, 2014). The already existing taxes on agricultural products will not apply to the production of cannabis (Walsh & Ramsey, 2015). The distribution of the produced cannabis will take place among approved pharmacies (Law 19.172; Decree 120/014).

This proposal did lead to some concern among the *Asociacion de Quimica y Farmacia del Uruguay* (Uruguayan Association for Pharmacists, AQFU). 'The distribution by pharmacies is not correct since it reduces the public perception on risks (and harmful effects caused by cannabis use),' hence the representative (Eduardo Savio, as quoted in Wang, 2014). The cannabis will be distributed in packages of 5 to 10 grams (Cibils, 2014; IRCCA, 2014). It will be sold at a price of 1,20 US$, in consonance with the prices of the black market (El Pais, 2015; Walsh & Ramsey, 2015). The price as established by the IRCCA has led to some questions concerning the economic feasibility of the model. Originally, an investment of 600.000-800.000 US$l was expected. In addition, the institute enforced very strict rules in terms of production process and finally, a number of possible additional expenses have not yet been fully established (Cortizas, 2015a; 2015b; El Comercio, 2014; El Pais, 2015; Espectador, 2015; IRCCA, 2015; Urgente 24, 2014). For instance, it is not clear at this moment whether the cannabis transport from plantation to the pharmacies will be an exclusive matter for approved companies. Pardo (2014) also formulated "concern about the possibility of the state to generate sufficient income to finance, as defined by law, a law enforcement system or education and prevention". At the same time, the relatively low price per gram can also have effect on the amount of use (Walsh & Ramsey, 2015).

The Uruguayan situation does not concur fully with the model of a government monopoly since the state is neither the sole cultivator nor the sole distributor of cannabis. Still, there is strict control by the state since it determines the price per gram, it monitors all phases of the supply chain and it does not allow any form of 'branding' or advertising (Graham, 2015; Pardo, 2014; Walsh & Ramsey, 2015). Since the model is still in full development at this moment, many significant details regarding the operation of the model are not known yet.

[23] The two succesful candidates were Simbiosis and Icorp (Espectador, 2015).

G. CONCLUSION

All sorts of experiments have been mustered and executed in the course of the past decades with respect to the decriminalization and regulation of cannabis, both on a national, regional and local level. In the report *A Quiet Revolution: Drug Decriminalization Across the Globe* (2016), the models of decriminalization in 25 countries are described. In this paragraph, we also explored experiences with the coffee shop model in the Netherlands and the cannabis social clubs in, for example, Spain and Belgium. Many countries have introduced some variant or other of the so-called Alaska model: a system where individual citizens or households have the right to personally cultivate a maximum amount of plants. Uruguay (a country which also signed the international conventions) was the first country in the world to regulate the complete production chain of marihuana. In the meantime in the United States, cultivation, supply and sale of cannabis for recreational purposes has been regulated in a number of states. Canada has also announced to regulate cannabis in 2017. Moreover, in the course of the past fifteen years, 25 American states have introduced medicinal cannabis models. Other countries have also legally regulated models for medicinal cannabis (among them Canada, Chili, Finland, Great Britain, Israel, the Netherlands, Austria, Spain and the Czech republic). Many countries have comprehended by now that a change of course on the local or national level can be justified legally, provided that the policy of other countries is not hindered by these changes.

The world-wide experiences with alternative models for the regulation of the production of cannabis, the way in which cannabis can be made available, of sales outlets, and of the use itself form an important school. From each one of these regulation experiments and systems, lessons can be learnt for future experiments with the legalization of cannabis. The experiments with the regulation of cannabis in other countries illustrate that the cannabis market need not function based on commercial principles. Other options exist, where governmental institutions or non-profit organizations manage the drug trade in a way where the financial incentives to initiate or stimulate use are left on the side-lines.

7. THE EXPERIENCES WITH LEGAL PSYCHOACTIVE SUBSTANCES

For the intoxicants which are nowadays not criminalized, or which are in other words 'legalized' (such as nicotine, alcohol, caffeine and a whole array of pharmaceutical preparations), various regulation models obviously exist. These models display significant differences depending on the product: for instance, the regimes for alcohol and nicotine are highly divergent and have undergone an entire evolution over time. The production and distribution of alcohol, nicotine and pharmaceuticals (legal substances) are largely regulated according to a free market principle. These models on the one hand illustrate perfectly how a government can impose rules with a legislative instrumentary, where production, distribution and use need not be criminalized entirely. On the other hand, yearlong experience with these models has also indicated that commercializing intoxicants can have unintended and undesired results. In this paragraph, we will cover these aspects briefly. We will start with a short summary of the different detriments resulting from the consumption of alcohol and tobacco, the two best known and most popular legal intoxicants.

A. THE DANGERS OF TOBACCO AND ALCOHOL USE

Until recently, smoking was to some extent considered to be hip and trendy. It is not surprising that advertising for smokers' requisites tapped into these 'attractive' aspects of smoking. For a long time, smoking was viewed as an expression of self-determination and hence belonged to the personal freedom of an individual – a value which is still highly praised by the tobacco industry these days. The image of alcoholic beverages is still predominantly positive and then mainly in Belgium, a country with a long and rich beer tradition. Still, more and more scientific research has been conducted which unequivocally indicated that smoking and excessive alcohol consumption[24] are hazardous to health.

In the case of tobacco, studies were published as of the fifties, mapping the health hazards (Keirse, 2002). It primarily concerns life-threatening health issues such as lung cancer, cardiac diseases, chronic bronchitis and the development or deterioration of asthma and other respiratory problems (Boyle et al., 2004; Haustein & Groneberg, 2010). The damage caused by smoking is also manifested in the form of irritation of eyes and nose, the development of headaches, dizzy spells and nausea, fatigue and concentration defects, affecting scent and taste ability, odour (Martins-Green et al., 2014), tooth decay and vocal damage (Blanpain, 2003; Chapman, 2007). What is more, it has been proven that tobacco smoke causes the same effects in passive smokers as in active smokers (Boyle et al., 2004; MacKay & Eriksen, 2002).

However, the use of smokers' requisites continues to be one of the major, avoidable causes of death globally. The number of fatalities caused by tobacco is estimated at 6 million per year (American Cancer Society & World Lung Foundation, 2015; Boyle et al., 2004; Chapman, 2007; Banks et al., 2015).

Prolonged problematic alcohol use can also lead to severe physical and mental and/or social problems. Problematic alcohol use can come in many forms, where four types can be discerned: excessive drinking, alcohol abuse, 'binge drinking' and alcohol dependency or addiction (Alcoholhulp-Alcohol Help, 2017c). Whereas problematic use in case of excessive drinking, or in other words: in case of situational risky use, can be limited to one or a few times, users run a higher risk of developing severe physical, mental and/or social problems with the other types, considering the often higher frequency of the use. Still: the extent in which these problems are manifested and the severity of them often differ from person to person and also depend on the amount one drinks (Alcoholhulp, 2017c; De Druglijn-The Drug Line, 2017b).

[24] Maximum 10 consumptions per week is often viewed as the limit for non-excessive alcohol use. As standard (unit) a glass of beer (250cc) is compared to a glass of wine (100cc) or a glass of liquor (35cc). All contain approximately 12g alcohol which results in a blood alcohol content of 0.2 BAC in a man and 0.3 BAC in a woman.

Numeric data supplied by the De Druglijn (2017a) indicated that in 2013 the alcohol use of 10% of the Flemish population could be labelled as problematic. This percentage runs parallel with the data from the Netherlands: in 2015, 10.0% of the population aged over 18 years old was a heavy drinker (11.9% of the men and 8.1% of the women). The specific definition of 'problematic alcohol use' can differ from country to country. This behavioural pattern for instance applies to adult men in the US when more than four standard glasses are consumed per day, or more than 14 standard glasses throughout an entire week (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2017). In Flanders, a new alcohol directive has been effective since the end of 2015, taking account of new insights on health and mortality risks, resulting in an even stricter advice. For both adult men and women, the limit in Flanders is now set at the consumption of 10 standard glasses of alcohol per week (VAD, 2016).

Excessive alcohol use does not only aggravate many physical afflictions: in some cases, there is a direct connection between their emergence and alcohol consumption, whereas in other cases only an indirect cause can be seen. Fact that is that for over more than 200 afflictions there is a demonstrable causality between excessive alcohol consumption and the genesis or further development of a syndrome. Without claiming to be exhaustive, it can be stated that the heart (e.g. alcoholic cardiomyopathy, arrhythmia – such as atrial fibrillation or ventricular tachycardia – strokes, hypertension, and so forth), the liver (liver cirrhosis and liver fibrosis), the brain (e.g. disrupted functioning of the neurotransmitters in the brain) and the pancreas (including acute pancreatitis) are the organs which suffer most from problematic alcohol use. The risk of developing various sorts of cancer (e.g. liver cancer, breast cancer, oesophageal cancer and laryngeal cancer) increases significantly as a result of prolonged problematic alcohol use (De Druglijn, 2017b; NIAAA, 2017).

The World Health Organization (WHO, 2015) estimates that worldwide, an annual 3,3 million fatalities can be related to the harmful use of alcohol[2], a number which represents approximately 5,9% of all fatalities. In general, it can be stated that approximately 5,1% of the global disability burden can be attributed to alcohol consumption as measured and expressed in 'Disability-Adjusted Life Years' (DALYs).[25] What is more, alcohol use can cause death or various forms of physical discomfort at a relatively early age. Within the age category of 20 to 39 years old for instance, a quarter of all fatalities can be attributed to the use of alcohol.
In the long run, problematic alcohol use can also lead to psychological or mental problems, such as gloomy feelings, aggression and impulsivity, fear, forgetfulness, sleeping problems, confusion and even psychoses (Alcoholhulp, 2017a). The social problems which are caused by problematic alcohol use are numerous and diverse: social isolation, tension and conflict with the direct surrounding, problems at work, judicial problems, financial problems and so forth (Alcoholhulp, 2017b).

B. SOME FEATURES OF TOBACCO REGULATION[26]

Although the scientific proof about the harmful consequences of (passive) smoking are overwhelming, it has taken a long time before this was communicated transparently. Not in the least by the tobacco industry which adeptly remained in charge by means of strong lobby groups. In an initial phase, the tobacco companies strongly opposed a thorough study into the effects on the risks of smoking. When it became obvious that this attitude was no longer tolerated, the industry took a different approach. They invested in their own studies and hence controlled the information which was released to the large public. As such and for quite a while, the tobacco companies succeeded in minimizing health hazards and keeping the addictive character almost completely away

[25] One 'DALY' can be seen as the loss of one healthy life year. The sum of all these DALYs within a population, or to put it differently, the disability burden, can be viewed as the gap between the current health state and the ideal health state in which the entire population leads a disease-free life.
[26] This paragraph is largely based on Samoy and Coutteel (2016).

from the spotlight (see, for example, Keirse, 2002; MacKay & Eriksen, 2002; Pampel, 2009). Economic arguments were also cited to stop the anti-tobacco movements (Givel & Glantz, 2001).

This advertisement by Philip Morris illustrates that the tobacco industry put their bets on their 'own scientific studies', whilst communicating soothing and misleading information to the public. At the left top we see: 'No curative power is claimed for PHILIP MORRIS… but AN OUNCE OF PREVENTION is Worth a Pound of Cure!' On the right-hand side it reads: 'Philip Morris are scientifically proved for less irritating to the smoker's nose and throat'. By commencing with the statement that 'no curative powers' are claimed for cigarettes and by then stating that the brand is the healthiest option, a manipulative way of tapping into the concern among the population about the risks of smoking is established.

Still, a gradual rotation occurred, shifting towards public health. After the release of several (independent) studies and findings, there was a gradual political awareness on an international and national level that an intervention was necessary. The absolute supremacy of the personal freedom to smoke was gradually put into perspective. The wider spread knowledge about the harmful consequences of smoking among the population has led to the fact that smoking is no longer socially acceptable in the presence of non-smokers, and particularly children and employees. This form of 'heightened civic sense' as a moral code of conduct is important, but hardly enforceable without the support of a legislative apparatus (Blanpain, 2003). This is the reason why legislation was developed, particularly for the protection of potential victims of passive smoking.

Vital instruments in the battle against smoking were cradled in the WHO. As early as the 1980's, the WHO already called to protect non-smokers against passive smoking and to fight addiction among children and youth with every possible means. These considerations were to return in later initiatives. On the 21st May 2003, the efforts on fighting (passive) smoking were cast in a legislative initiative in the form of the WHO Framework convention on tobacco control.[27] More than 170 states and the EU signed the convention. Belgium also ratified this convention. Its directives on the one hand consist of measures designed to decrease the demand for tobacco products and on the other hand of measures designed to tap into the supply of tobacco producers.

In the meantime, quite a few (mainly Western) countries have adopted legislation which provides limited smoking bans, and the privatization of tobacco companies has become a fact in most Western countries (in the 17th and 18th century, tobacco production was placed under state monopoly in many countries for economic reasons). Warning signs were added to smokers' requisites and shocking images were placed on the packaging (MacKay & Eriksen, 2002). Other forms of advertising for smokers' requisites have also been regulated in the different countries.

On a national level, the factual starting signal of the Belgian anti-smoking regulation was given with the Royal Decree (hereafter: RD) of 15th September 1976 about public transport[28] and the RD of 31st March 1987.[29] With this latter RD, a limited smoking ban was implemented in various closed places accessible to the public. Although

[27] WHO Framework convention on tobacco control of 21st May 2003, *Tbr.* 2004, 127 (Dutch translation: 269), effective 27th February 2005.
[28] RD of 15th September 1976 regulation for the police on the transport of people per tram, pre-metro, metro, and bus, *BG* 18th September 1976.
[29] This latter decree was overruled by the RD of 15th May 1990 (prohibiting smoking in certain public places, *BG* 13th June 1990).

legal sanctions were determined, effective control was lacking, so the smoking ban far too often remained inefficient.[30]

Today, we rely on the law of 22nd December 2009.[31] Besides a general smoking ban on closed placed accessible to the general public, it also contains a ban on smoking on the work floor and on public transport. With this law, an additional step was taken: smoking was no longer possible in bars were food was served. In spite of the extensive transition measures, which allowed smoking in other bars, a huge surge of protest arose.[32] In addition, a reserve was formulated for a general smoking ban for gaming venues. This clause was annulled by the Constitutional Court in its judgment of 15th March 2011.[33]

Some exceptions to the smoking ban are still standing. It is still possible to smoke in a private home in the presence of other people. Smoking is also permitted in rooms viewed as private in prisons or closed institutions (for instance in a cell). However, these exceptions are not undisputed. Various anti-tobacco lobby groups fight for more protection and advocate an enforcement of the prevention measures taken by the government. However, questions about the desirability and efficacy of an expansion can be heard from different angles.[34]

As cited before, various initiatives have risen on both international and national level, all striving to control tobacco. Especially in Western countries, the resulting measures and commitments have proven to be successful, as for instance the total ban or the strong reduction of advertising. To avoid a conflict of interest, most tobacco companies have been privatized in Western countries since the eighties, which some experts consider to be commendable. When the government owns tobacco companies, it indirectly benefits from higher turnovers. However: the state monopoly of the tobacco industry continues to exist in some developing countries. As a result, companies have shifted their focus to product capacity in non-Western (developing) countries such as Argentina, Brazil, Turkey, Zimbabwe and Malawi (Joloha, 2008; MacKay & Eriksen, 2002; Van der Ende, 2013), where they can conduct more aggressive and more open politics in the field of the different marketing techniques they use (e.g. on television, radio, fashion, film, the Internet and events) (MacKay & Eriksen, 2002). The reason for this altered focus on geographic level can probably be ascribed to the fact that non-Western countries are still susceptible for the threats of the tobacco industry. The tobacco lobby claims that the country depends economically on tobacco and by adopting control measures, unemployment and poverty would increase, and foreign help would have to be relied on more. (Otanez et al., 2009). As such, the tobacco lobby can slow down or even completely prevent developments in the field of tobacco control or discouragement. The WHO and national organizations are committed to present evidence which refutes similar distorted, economic arguments and slowly attempts to realize a shift in mentality, also in non-Western countries.

We can conclude that a lot has changed since the fifties when the cigarette was omnipresent in daily life. The state monopoly of the tobacco industry and the economic considerations have made room for increased vigilance of the government for public health. Several measures to discourage tobacco use were not only adopted on a national level, this was also the case internationally. History teaches us that these developments have taken their time to mature. It starts off with studies excavating health risks, then these data have to ensure social

[30] This decree was annulled and replaced by RD of 13th September 2005 (prohibiting smoking in public places, *BG* 22nd December 2005, effective 1st January 2006) which recuperated the prohibition to smoke in closed places accessible to the general public. However, the decree left room for significant exceptions. In addition, there is the RD of 19th January 2005 concerning the protection of employees from tobacco smoke.

[31] Law of 22nd December 2009 concerning a general regulation for smoke-free closed places accessible to the general public and to protect employees from tobacco smoke, *BG* 29th December 2009, effective 1st January 2010.

[32] The transitional measures therefore stated that such a smoking ban could become effective no sooner than 1st Januari 2012 and by 1st July 2014 at the latest. See a.o.: http://www.tegenkanker.be/content/wetgeving (consulted last 28th August 2015).

[33] Constitutional Court 15th March 2011, nr. 37/2011, http://www.const-court.be.

[34] For instance considerations driven by the problem of individualising responsibiltie.

awareness. Only when social support is large enough, combined with political will, can regulation become effective. Besides, we notice that mainly non-Western countries all too often succumb to the pressure of strong and aggressive tobacco lobby groups. Especially (incorrect) economic arguments are used in defence to stop regulation of tobacco discouragement.

C. SOME FEATURES OF ALCOHOL REGULATION

Various laws also exist concerning the regulation of the production, serving and selling of alcohol and drinking under influence (Decorte, 2014). The production of alcoholic beverages is regulated, especially in view of quality norm and for economic and fiscal reasons (taxes). On 10th December 2009, the Belgian National Gazette published the amendment about the age limits for selling and serving alcohol to youngsters (became effective on 10th January 2010), introducing an alteration of the law of 24th January 1977 relating to the protection of the health of users in the context of food stuffs and other products. Based on this new Belgian law, it is prohibited to sell, serve or offer alcohol to youngsters under 16. By alcohol, all alcoholic beverages of more 0,5% vol are referred to (e.g. beer, wine…). Liquor or spirits (such as determined in article 16 of the law of 7th January 1998 concerning the structure and the excise rates on alcohol and alcoholic beverages) are not be sold, served or offered to those younger than 18. Whoever desires to buy alcohol/spirits needs to be able to prove his age whenever asked.

The decree law of 14th November 1939 concerning the coercion of insobriety made public insobriety prosecutable. The same law also prohibits serving 'intoxicating' drinks to those who are in an apparent state of insobriety, making someone drink until he is drunk, wilfully stimulating insobriety resulting in illness, inability to work or death, and daring or accepting challenges to drink.

Belgium also has seven regulations, six statutory and one non-statuary regulation, covering advertising and marketing for alcoholic beverages.[35] Belgium has one federal law regulating advertising and marketing for alcoholic beverages, more precisely the consumer law of 1977. The regulation of advertising messages on television and radio is a community authority. This means: the three communities and the Brussels capital region all have their own regulations. Remarkable is the fact that the directives in the different regulations are quite similar. There are five different laws or decrees which outline the broadcasts on radio and television, and which all contain a chapter on (alcohol) advertising. Points of mutuality in these regulations are that alcohol advertising cannot be addressed to minors or pregnant women that no link can be made between the consumption of alcoholic beverages and the improvement of the health status or athletic performance and that advertising alcoholic beverages is prohibited in a cinema when a film is featured which mainly addresses minors.

Another example of regulation: since 12th May 2005 Belgium has a 'Covenant on Practice and Advertising for Alcoholic Beverages', a co-regulation between the alcohol industry, consumer organizations and the government. On January 25th 2013 the Belgian Brewers, the Belgian Federation of Wine and Spirits, COMEOS (a federation representing the Belgian commerce and service in eighteen different sectors), the federations for the catering business, the consumer organizations Research and Information Centre for User Organizations (OIVO) and Testaankoop (Test Purchase), together with the then Health minister, Laurette Onkelinckx, signed a new 'covenant on advertising and marketing of alcoholic beverages' (Décor).

The health sector (in casu the Flemish expertise centre Alcohol and other Drugs (VAD), Fédito Wallonne and Fédito Bruxelloise, but also representatives of the Flemish Youth Council, the self-help organizations, local prevention counsellors, physicians and psychiatrists) have been advocating an extensive alcohol plan for quite a

[35] For an overview, see: https://www.health.belgium.be/nl/gezondheid/zorg-voor-jezelf/alcohol-tabak/alcohol#Reclame_voor_alcohol.

while now. Research indicates that most certainly three measures are needed in order to be able to speak of an effective plan: price increase, prohibition or restriction of advertising and restriction of supply. Both in 2013 and in 2016, initiatives were deployed to implement measures in that respect, but until now, the government always faltered regarding the alcohol industry, which lobbies as hard and as long as it takes to have all measures targeting supply (a ban on so-called 'happy *hours'*, an increase of the minimum age, a prohibition on sales in vending machines, night shops and petrol stations, etc.) abolished, hence leaving merely senseless measures (Fluit, 2016; VAD, 2016).

D. SOME FEATURES OF PHARMACATEUCIAL REGULATION

A third examples concerns the regulation of pharmaceuticals (either or not on prescription). Not a single pharmaceutical can be commercialized without a registration or license to trade it. This license is granted by the ministry of Health, after advice by the Pharmaceutical committee within the Federal Agency for Medicines and Health products, or by the European Community or if necessary following advice by the Committee for Medicinal Products for Human Use(CHMP) or the Committee of Medicinal Products for Veterinary Use (CVMP) of the European Medicines Agency (EMA). The experts appointed within these different institutions evaluate the quality, safety and efficacy of all medicines based on scientific data presented by the applicant. During this evaluation, they take scientific norms as their point of departure which apply on a European level. The license for marketing a medicine is attributed to medicines of which the quality, safety and efficacy have been clearly established.

Arguments relating to the safety and efficacy of a medicine can be presented in various ways to the qualified authority:

- Through a 'complete case dossier': upon the license application of an original medicine, the applicant submits the results of pharmacological, toxicological and clinical studies,
- Through a 'generic dossier': when an active substance has been admitted in one member state of the European Union for at least ten years, and when the patent has expired, the applicant can refer to the results of the studies conducted with the original medicine (the reference medicine), provided that both are 'essentially equal'.
- Through a 'bibliographic dossier': a reference to published scientific literature which indicates that the medicine can be accepted on the level of its pharmaceutical, toxicological and clinical aspects. This possibility can only be applied if the active substance has been used in medical practice as a medicine in the European Union for at least ten years ('well established use') and that it is acknowledged as efficient and safe.

For each medicine, the applicant has to demonstrate that the manufacturer is capable of producing a product of sufficient and constant quality, and it has to be guaranteed that this quality is preserved until the suggested expiry date. The following aspects of the medicine should therefore be discussed in the submitted dossier: the pharmaceutical development, the production process, the control and stability of the active substance, the control of all ingredients (incl. packaging) and the production process, control and stability of the medicine. Each alteration of these ingredients after having put the medicine on the market, should be subjected to a license.

The pharmaceutical producers are submitted to regular inspections. They have to comply with the European standards on 'good manufacturing practices' (GMP) and can only produce medicines when they possess a GMP certificate. If they do not comply with these norms, the GMP certificate is revoked and the manufacturer can no longer produce pharmaceuticals. The supervision by the Federal Agency for Medicines and Health Products has to ensure that everyone can dispose of high-quality, efficient and safe medicines.

Pharmacies (which deliver two kinds of medicines: medicines prepared by the pharmacist himself and medicines which have been produced industrially) are also submitted to very strict rules. For instance, they are not allowed

to procure certain medicines without a medical prescription. The pharmacist remains responsible for the quality and conformity of the procured medicines, either OTC or on prescription. He has to ensure that the patient applies his/her treatment correctly. This implies, among othe things, that he explains to the client when and how the medicine should be taken; that he signals possible side effects to the client and that he has an eye for interactions with medicines the client takes. Pharmacists also actively control the quality of medicines. As such, they help improve the quality of medicines.

E. IS COMMERCIALIZATION A GOOD IDEA?

All these regimes clarify how a government can supervise the production and distribution of risky products (Gerritsen, 2000). However, the yearlong experience with these models has also indicated that commercialization of intoxicants can have unintended and undesired results (Beauchesne, 2007; Bean, 2010). When the government applies insufficient restrictive regulations, having risky products manufactured according to the principle of the free market (and hence according to the principle of profit maximization), provokes the rise of danger. For decades, the tobacco industry has tried to minimize the health hazards and the addiction risk of nicotine use. Whenever possibly, the industry has kept silent about its research into additives which could stimulate the absorption of nicotine. Actually, tobacco giants could invest substantial sums in scientific research to serve their interest, whilst keeping at bay the sponsored research which they did not approve of.

The alcohol industry invests millions in the development and design of new (alcoholic) products, which have to increase alcohol consumptions, sometimes for specific target groups (the 'breezers', the 'alcopops',…). When the government – as was the case recently – wants to implement measures to tackle problematic alcohol use, the Union of Belgian Brewers and the Belgian Federation of Wine and Spirits lobby so hard and long until all measures targeting availability (a ban on so-called *'happy hours'*, an increase of the minimum age, a prohibition on the sales in vending machines, night shops and petrol stations, etc.) are dispensed with.

The same mechanisms apply for pharmaceutical multinationals. Unwelcome scientific research is hushed away, to ensure that medicines end up on the pharmacy's shelf. Independently financed tests lead to a positive result in merely 48 percent of the cases; when the research is sponsored by pharmaceutical companies, this number seers to 78 percent (Goldacre, 2013). Through think tanks, with their support of patient organizations, by seducing and deploying scientists, and through the organization or sponsoring of conferences, work visits and seminars, they defend their interests. This lobby work should serve to make certain afflictions more visible on the agenda, to influence the demand for a specific medicine and/or to influence the prescription behaviour of physicians, and obviously to sell more certain branded medicines (see, for example, Gotsche, 2013).

With the lessons learnt from the regulation of alcohol and tobacco products, a group of American researchers (Pacula et al., 2014) formulated a number of recommendations for cannabis to reduce a) the access, availability and use in the case of youngsters; b) driving under the influence of drugs; c) the risk of developing dependency and addiction; d) the use of cannabis products with undesired polluting substances (such as glass or sand) or cannabis products with an undefined potency; and e) the combined use of cannabis and alcohol, especially in the context of use in a public setting. These objectives were translated into eight recommendations:

1) **Keep prices artificially high**. Hundreds of studies into alcohol and tobacco consumption have indicated that increasing the price does not only lower the consumption, but that it can also reduce an array of related hazards on a social and health level. Various studies show that an increase of the excise duties in the case of tobacco products is one of the most effective strategies to dissuade early use among youngsters, to discourage the switch to chain smoking and to increase the number of smoking cessation attempts, even among youthful users (see, for example, Lillard et al., 2013; Chaloupka et al., 2012). In a comparable manner, higher alcohol prices and excise duties have led to a decrease of early use and the so-called *binge drinking*, including a reduction of drivers driving under the influence of alcohol and

the related traffic accidents. It is once again noted that these positive effects can occur in different age groups, hence also youngsters. Higher alcohol prices are also related to a fall in violent crime and fatalities resulting from chronic diseases such as liver cirrhosis and certain types of cancer (see, for example, Grossmann et al. 1994; Xu & Chaloupka, 2011).

2) **Install a government monopoly**. A possible way of keeping prices artificially high and reducing competition from the illicit market to a minimum, consists in placing production, distribution and sale under governmental supervision. Even a variant on this model would still enable a privatized production process, including the cultivation and processing in the case of cannabis. However: this only seems to be one of the possibilities when the government monopoly is aimed exclusively at distribution and retail. Research into government monopolies for alcohol, and into monopolies in general, has indicated that introducing a monopoly helps to keep the price sufficiently high by eliminating market competition. What is more, it would also offer opportunities to deny youngsters the access to alcohol and to dam consumption in general (see, for example, Cook, 2007; Her et al., 1999; Babor et al., 2003).
3) **Limit the number of licenses and licensees and foresee meticulous supervision**. In those cases where a government monopoly is not possible or desirable, the most designated option seems to consist of a strict licensing policy where licenses are mandatory in each phase of the supply chain (cultivation or processing, wholesale or distribution and retail). Introducing a license system mainly seems to be justified because of the possibilities it offers the government to meticulously follow up on products and to hence include the required legal warranties in terms of minimal quality standards. In this approach, intervention is also possible when the monitoring indicates excessive (or the opposite: insufficient) supply. Importing such a license obligation also reduces the market competition to a minimum (which in other words keeps prices high), prevents sales outlets from popping up out of nowhere and limits the options in terms of diversity (especially when only a limited amount of licenses is issued). Scientific literature on tobacco also indicates that strict license conditions linked to strong enforcement (through random compliance checks on regular moments and imposing sanctions in case on non-compliance) also holds the potential to contain the sale to minors effectively. In case of non-compliance, it is perfectly feasible to suspend or definitively revoke the license (see, for example, American Lung Association, 2012; DiFranza, 2012). Scientific literature on alcohol reveals the benefits of a licensing policy for distribution points even more convincingly. Studies from various scientific disciplines have indicated a strong connection between a high concentration of distribution points and alcohol abuse, including unintentional bodily harm and criminality (see, for example, Popova et al., 2009). The evidence is even so strong that various national and regional organizations, among them the European Commission and the World Health Organization have issued recommendations on restrictive licensing policy, in view of prevention (WHO, 2000; WHO, 2010).
4) **Limit the diversity of supply**. Both the alcohol and the tobacco industry have marketed products in the past which held special attraction for youngsters. One can refer to menthol and sweet cigarettes or alcohol pops. It therefore seems advisable to impose restrictions on the supply of cannabis products specifically targeting youngsters, such as so-called canna cakes or hash brownies. It can even be considered to formulate even more severe restrictions than those currently imposed on the alcohol and tobacco industry.
5) **Limit or prohibit advertising**. Scientific literature on alcohol and tobacco has indicated that there are strong connections between on the one hand alcohol and tobacco-related ads, sponsor activities, promotion campaigns and product placement in films, TV and radio shows, and on the other hand the prevalence of alcohol and tobacco use among youngsters (see, for example, Babor et al., 2003). Research has also indicated that partial restrictions in the field of marketing have proven to be largely inefficient when reducing tobacco use is concerned. The cause of this is believed to be the fact that producers in the case of partial restrictions, move their expenses to non-prohibited marketing strategies (Saffer & Chaloupka, 2001). Pacula et al. (2014: 1024) therefore conclude that "'a comprehensive ban on all forms of marijuana marketing might be the ideal', where they refer to the 'Guidelines for

implementation of Article 13 of the WHO Framework Convention on Tobacco Control' for inspiration on the concrete way of implementation (WHO, n.d.). These authors for instance defend the additional restrictions recently issued in this context, such as a complete ban on visibly displaying tobacco products in sales outlets. Such a ban is currently already in force in Canada, Australia, Norway, the United Kingdom and Iceland. In various other countries, including the Netherlands, authorities are feverishly working on a similar prohibition since visibly displaying tobacco goods currently still is one of the most favoured marketing strategies of the tobacco industry.

6) **Limit the use in the public space**. A restriction of the use in public places serves two purposes: it does not only reduce the harmful effects of passively smoking tobacco and cannabis, but it also lowers the chance that youngsters will perceive cannabis use as a socially accepted activity. The added value of avoiding exposure to environmental tobacco smoke to the maximum, has been demonstrated clearly on several accounts by science (US Department of Health and Human Services, 2006). Scientific literature on tobacco also indicates that issuing legislation trying to guarantee clear indoor air in public spaces where youngsters gather regularly (such as concert halls, sport stadiums, shopping malls and public transport) triggers positive effects in the field of early and self-reported tobacco use among children and young adults (see, for example, Levy & Friend, 2003). Even issuing legislation to guarantee clean indoor air in the workplace (including, for instance, restaurants) seems to have a positive effect on the smoking behaviour of youngsters. This could be explained by the fact that similar initiatives also succeed in developing or enforcing a negative attitude with respect to smoking, even when youngsters are not the primary target audience of such legislation (IARC, 2009). Restrictions in terms of locations where cannabis can be used, can also reduce the probability that cannabis and alcohol are consumed alongside.
7) **Map the problem on driving under the influence of cannabis** and **accommodate sufficient prevention campaigns**. There is no doubt that even supporters of a legalization of cannabis have the conviction that participating in traffic under the influence of cannabis is dangerous and should be prohibited. Various scientific literature studies on alcohol show that various efficient and purposive options are available to dissuade driving under the influence of alcohol. One could consider the increase of the price of alcoholic beverages, but also the adaption of the traffic legislation or the targeted and frequent organizations of alcohol patrols (see, for example, Wagenaar et al., 2007). Literature studies have also succeeded in excavating a number of minimum requirements or key elements with which specific actions aimed at discouraging driving under influence should comply with. For instance, the meta-analysis of Elder et al. (2004) indicated that careful planning and solid execution of the actions, linked to sufficient general publicity, simultaneously conducting prevention campaigns and an active and visible enforcement of traffic legislation are crucial.

F. CONCLUSION

The world-wide experiences with the regulation of tobacco, alcohol and pharmaceuticals (either or not on prescription) can form a vital school to know what is effective and what is not (Nicholson, 1992; Levine & Reinarman, 2004; Ritter & Cameron, 2006; Pacula et al., 2014). The international scientific knowledge on the legal regulation of production techniques and control of manufacturers, price setting and tax policy, dissuading messages, damage-restricting strategies… is available.

With a system of licenses and inspection of production, various aspects can be monitored (Lap, 1993): the background and expertise of the producer, the cultivation techniques and circumstances, the permitted processing or handling procedures, the maximum production capacity of producers, the location of production facilities, etc. In addition, it is also possible to regulate the way in which products are available (Pudney, 2010): the standard doses, the admitted plant variants, the maximum strength, quality norms and obligations in terms of packaging and minimum information (the package leaflet) about (possible) effects, risks and recommendations in

case of problems (see for Hazekamp, 2006). In a regulated market, the government can also apply conscious politics to influence prices of products, by imposing taxes, or via a more direct price determination (Caputo & Ostrom, 1994; Beauchesne, 2007). The particularly ample experiences with the alcohol and tobacco policy form a useful point of departure to guide a price policy in terms of cannabis.

The way in which a product is packed, can be regulated significantly (Lap, 1993). At the same time, a prohibition can be issued on any form of *branding* and advertising on the packaging. Concerning the regulation of sales outlets, there is also an array of options (Lap, 1993; Pudney, 2010). Scientific literature has clearly indicated that a direct link exists between advertising and promoting alcohol and tobacco products and an increase of the use of these products (Hastings et al., 2005; Scott et al., 2017). Each regulation model should therefore begin with a prohibition of any form of advertising and promotion (which should then also apply for alcohol and tobacco). To avoid oversupply, implantation and density of sales outlets can be controlled. Sellers can be made responsible up to a certain point for the behaviour of clients, hence helping to prevent disruption for the surrounding of the sales outlet, and not selling products to minors or people who are clearly intoxicated. It is also perceivable that special conditions have to be met by sellers, for instance in terms of their knowledge on drugs and the related risks.

Finally, quite a few rules can be imposed on the users (Haden, 2004). A minimum age (for instance 16, 18 or 21?) is the most obvious norm. Legislation can prohibit the sale of cannabis to an individual who is clearly intoxicated (a similar law already exists for alcohol in Belgium).

In short, the regulation on tobacco (nicotine), alcohol and pharmaceuticals can offer quite a bit of inspiration for a debate on the regulation of cannabis (Levine & Reinarman, 2004; Pacula et al., 2014). At the same time, these models specifically teach us a lot about the deleterious consequences of ‘commercialization’ (a model where profit maximization for producers is the main motive).

8. REGULATORY OPTIONS FOR CANNABIS: PROHIBITION, COMMERCIALIZATION AND COMPROMISE OPTIONS

This chapter will commence with a discussion of the barriers which up until now have stood in the way of regulations, to then fathom the possible regulatory options for cannabis.

A. BARRIERS TO SOCIAL DEBATE ON REGULATION

The debate on alternative regulation models for cannabis are often dominated by polarizing and false dichotomies: strict versus lenient or they 'who have given up the battle' versus 'they who want to tackle it'. The idea of regulation often provokes irregular fears ('there will be free cannabis for all', 'everyone will be hooked on cannabis'), whereas these models actually release more means whilst at the same time offering tools for both preventive and curative action.

A plea for a debate on the regulation of cannabis is not inspired by a *laissez-faire* attitude. It concerns the different regulation of the phenomenon and hence: fighting the battle against cannabis with better weapons. 'Regulating' does not necessarily stand for 'commercializing'. Nor does regulating equal approving or encouraging the use of intoxicants, or minimalizing the dangers of cannabis. What is more, boundaries are drawn with regulation: legal sanctions are foreseen for a) the producers, distributors or users who do not follow the rules, and b) the non-licenses producers and distributors.

Besides, the main arguments opposing a debate on the alternatives for criminalization are based on incorrect assumptions. Some suppose that regulation implies that the prices for cannabis will decrease significantly (hence making the product more available), whereas the past has often showed that similar (strong) price drops not necessarily have to result from a regulation policy (see alcohol and tobacco; Levine & Reinarman, 2004; Ritter & Cameron, 2006; Pacula et al., 2014). It is possible to allow a regulated cannabis market, whilst at the same time maintaining the sale prices on the same (or slightly lower) level through levying excise duties. Through licenses and inspections, all aspects of the production can be monitored (background and expertise of the producer, cultivation techniques and circumstances, permitted processing procedures, maximum production capacity of producers, quality control of the end product, etc.). Additionally, the way in which products are available can also be regulated (the standard doses, permitted plant varieties, maximum THC percentages and obligations concerning information on packaging and leaflets). Any form of advertising or 'branding' can be prohibited. The government can adhere conscious politics of price control, through imposing taxes and direct price determinations. Sales outlets and users can also be submitted to quite a few rules (such as a minimum age, a residence criterion, a compulsory membership of a club and/or personal licensing system).

Others argument that drug dealers will not be driven from the market without a fight. However: police and the judiciary – because they would no longer have to concentrate on all cases of drug possession and would only be concerned with professional criminals operating outside the law – would probably have more means and manpower at their disposal for detection and trial, although these savings would depend from the policy adhered in neighbouring countries. What is more: after the abolition of the alcohol prohibition in the US, one third of the 'bootleggers' passed on to other forms of criminality (including the upcoming drug trade!), one third became respected liquor dealers and one third disappeared from criminality and liquor business (Bovenkerk, 1994; Cussen & Block, 2000).

Some claim that the weakest and most vulnerable people in society can only be protected sufficiently by means of criminal law. However: prevention workers and counsellors could practice their profession even better within a regulation model: it would become easier for them to reach and help the most vulnerable ones (youngsters,

psychiatric patients and socially challenged) even better and more quickly, provided that legalization is matched with a significant investment in clever prevention programs. They are currently the largest victims of the omnipresent black market. Excessive or problematic use continues to be a sensitive issue, also in case of legal intoxicants, a theme which is difficult to discuss in a family, educational or professional setting. However, when the mere use of intoxicants is criminal, it leads to even more barriers and thresholds to make substance-use related problems discussable. Criminalization often undermines the efforts of counsellors.

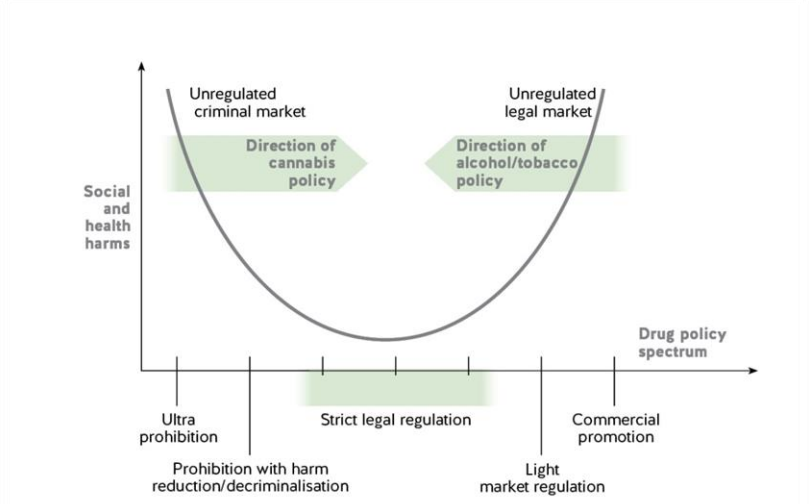
International bureaucracies (such as the *International Narcotics Control Board*) and European action plans head towards a uniform and stringent approach of the drugs phenomenon. But as stated in chapter 5, the obligations of the UN and EU conventions can be annulled from the perspective of human rights conventions, provided that the policy of other countries is not hindered by doing so. A fundamental review of the international conventions is not likely to happen in the short term, for various reasons, but the points of departure for the 'war on drugs' will be emasculated through local and national changes of course, and many countries have comprehended this quite well. Several countries in Europe have already implemented significant changes in terms of decriminalization. The international political climate therefore seems exceptionally positive and with some capable diplomatic handiwork, interest can be evoked.

B. THE SPECTRUM OF POLICY OPTIONS ON CANNABIS

A wide array of legal or political models is available to regulate the production, supply and use of cannabis (or other intoxicants) (see figure 2). On one end of this spectrum, the criminal market created by an absolute prohibition. This is followed by less punitive prohibition systems: models with a partial/de facto/virtually legal supply, legally regulated market models with different restriction degrees. On the other hand of the spectrum, the legal, commercially free markets.

Either extreme of the spectrum is a completely unregulated market. It is assumed that the two extreme options connect with unacceptably high social and health expenses, because those controlling the market (either legal or illegal) are exclusively driven by profit. The intermediate options offer the possibility to strictly regulate various aspects of the market, hence making it possible to minimalize the potential negative consequences of cannabis use and the cannabis market, whilst maximizing the potential benefits.

Figure 2 A spectrum of policy options

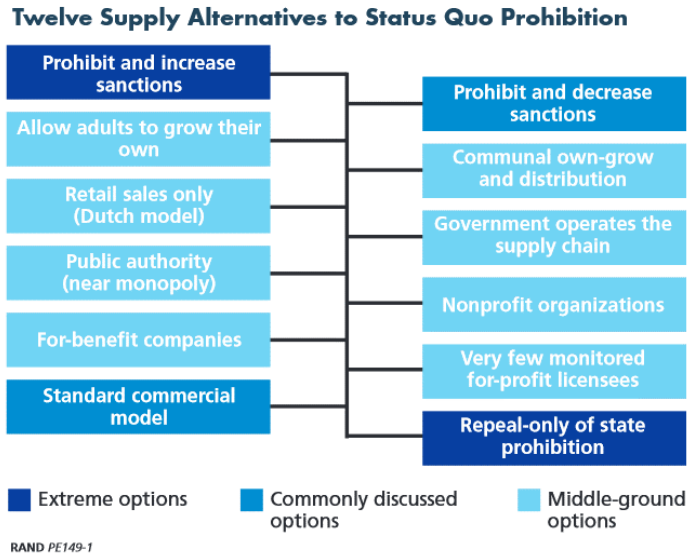


Source: Transform (2007). *After the war on drugs. Tools for the debate*, p. 19. Transform Drug Policy Foundation, Bristol.

Since the debate on the cannabis policy is often polarized between advocates of a complete prohibition and advocates of commercialization, the content of the notion 'legalization' or 'prohibition' is often presented simplistically. As a result, the complete assortment of policy options in this field is often missed (Caulkins et al., 2015a; Caulkins et al., 2015b; MacCoun, Reuter & Schelling, 1996; MacCoun & Reuter, 2011; Transform, 2013). In reality, the introduction of a legal regime can assume different forms (and have different results), depending on the choices that form the basis of a particular bill. The possible (legal) models for the supply of cannabis are therefore formed based on different decisions about either or not prohibiting certain activities, the people for whom the regime applies (for instance adults, licensees, patients, and so forth) and on the form, price, amount and strength of the substance which is produced and/or distributed, and many other factors (Caulkins et al., 2015a; Caulkins et al., 2012; Kilmer, 2014; Kilmer et al., 2013; MacCoun and Reuter, 2001; MacCoun et al., 1996).

As a result, a very vast spectrum of potential models exists, ranging from for instance a model where only adults are permitted to grow their own cannabis in a domestic setting, to a model where the government issues a number of profit or non-profit licenses to organizations supplying cannabis, to the often discussed classic commercial model (as for instance created in Colorado or Washington). The elaboration of similar regulatory models is a complex task since its design, alongside with the technical aspects of the model, will have significant impact on the effects of the implementation (Caulkins et al., 2012; Kilmer, 2014). Allowing a certain amount of flexibility is therefore important. As such, adaptions can be practiced with the increased knowledge on advantages and risks of a certain model (Caulkins et al., 2015b; Kilmer, 2014). After all, each legal regime is adaptable: when thorough and cautious evaluations are positive it can be adapted to a less restrictive and interventionistic model whenever desired in a later phase. Besides, the adaptable character of the model also works in the other direction. When independent and scientific evaluations indicate that certain guidelines and stipulations need to be formulated more strictly, the model can also be adjusted in that respect.

Figure 3 Twelve models as alternatives to a status quo (of prohibition).



Source: Caulkins et al. (2015). *Options and issues regarding marijuana legalization.* Santa Monica: RAND Corporation.

Caulkins et al. (2015a) identified and compared twelve wide supply models[36] as possible alternatives for the current prohibitionist model (see figure 3). In that research, two policy options are presented as the commonly discussed models: on the one hand a form of prohibition with a decrease in sanctions (for instance by decriminalizing cannabis possession or imposing lower fines) and on the other hand a standard commercial model. This last model is mainly characterized by the fact that the production and distribution of cannabis is left to the competitive free market – albeit subjected to specific rules. This has been the case since 2014 in Colorado and Washington (Kilmer, 2014; Pardo, 2014). As an alternative, two other 'extreme options' are discussed, although they seem less probable: on the one hand the conservation of the prohibition regime in combination with increasing the related sanctions and on the other hand abandoning prohibition and fully approaching the cannabis market as any other market (without for instance creating a special regulatory framework for this market). In addition, a multitude of intermediate options exists. This range contains 'controlled local sale' in line with the Dutch coffee shop model, which implies that the retail and the possession of cannabis will not prosecuted in certain circumstances (based on the opportunity principle). (Korf, 2011; MacCoun, 2013; MacCoun & Reuter, 2001; Room et al., 2010). The '*grow your own*' model enabling users to cultivate their own cannabis, was formally introduced and tolerated in several jurisdictions, including South and West Australia and Alaska (MacCoun, 2013; MacCoun & Reuter, 2011). The introduction of a government monopoly with direct control over the cannabis supply or the attribution of this role to a public authority are other possibilities envisioning the reduction of the involvement of companies with profit objectives on the market. Other intermediary options can focus on a system of licenses, which are only issued to non-profit organizations or to a number of companies with profit objectives.

In the following paragraphs, we will briefly scan the different options. The reader will detect some similarity with the regimes described in chapter 6 where an outline was given of a number of regimes which have mainly been formed in other countries.

I. THE ALASKA MODEL: HOME CULTIVATION FOR PERSONAL USE

A possibility which can be considered is the model of self-supply, which would allow the production of cannabis at home for personal consumption in specific circumstances. In that case, it could concern a formal legalization, or a *de iure* or *de facto* decriminalization. In English literature, similar models are described in terms of 'home growing', 'grow-your-own' or the Alaska model, because the production of cannabis at home for personal use is allowed in Alaska (Caulkins et al., 2015a; MacCoun, 2013; Room et al., 2010). The legislator can then impose restrictions concerning the amount of plants which can be cultivated, the maximum amount of cannabis at home, the place where cultivation is allowed, or even the maximum allowed wattage of the lamps used during the production (Caulkins, Cohen & Zamarra, 2013; Hough et al., 2003). In spite of the fact that this model would not instantly lead to a significant increase of the use, it would neither have significant effect on the scale reduction of the black market (Caulkins et al., 2012; MacCoun, 2013). The majority of the (mainly occasional or irregular) users tends to prefer the easy and less time-consuming route of direct supply instead of time-consuming cultivation for personal use. True cannabis aficionados and regular cannabis user might like to be involved with home cultivation, but the amount of users who rather uses other (quick, convenient) channels of supply, is presumably larger. What is more, it continues to be difficult to introduce quality controls in this model. Jonathan Caulkins and his colleagues (2012, p. 869) pointed out the possible difficulties when introducing the model of home cultivation when, simultaneously, other, commercial options are permitted: "It would be more difficult to regulate commercial production and to prevent deviations, when cultivation by users would be permitted [..] because somebody arrested for the possession of contraband, can claim that it was grown legally at home."

[36] The following models could possibly be formed in such a manner to also include medical programmes. In addition, a regime based on prescription for therapeutic purposes could also be considered.

In spite of these drawbacks, the model also offers some important benefits, which can be attractive for the Belgian policy makers. First of all, this model is nothing more than an extension of the current Belgian cannabis policy. This policy already *de facto* allows the cultivation of a single cannabis plant for personal use. Secondly, even when the home cultivation of cannabis would be formally legalized, it would not mean legalization of the trade in cannabis. As a result, the model would not have negative consequences for the neighbouring countries – and hence would not provoke any (major) resistance among their authorities– which can be seen as a third benefit. Fourthly, this model can be viewed as compatible with the UN conventions and the related EU legislation, as far as this is not interpreted literally, but teleologically. It would probably not lead to negative reactions by the Council of Europe and the INCB (the UN service controlling the implementation of the three UN conventions). This is the reason that this model is recommended in the last book by Fijnaut and De Ruyver (2014: 2632-263; but not in their previous study).

II. CANNABIS SOCIAL CLUBS: THE COOPERATIVE MODEL

An alternative model is the one of the so-called 'Cannabis Social Clubs'. In this model, cannabis users can join an association, where the cannabis cultivation is organized (personally and collectively) for exclusive distribution among the members of the club. The point of departure behind both the above-described model of home cultivation for personal use and the model of the cannabis clubs is that the production and distribution of cannabis take place in a somewhat domestic and closed atmosphere. In the case of self-supply however, this occurs on an individual level (an adult grows for himself). In the context of cannabis social clubs (CSCs), the cultivation is organized in a collective or shared manner (various adults, members of the CSC, grow for themselves). In principle, both models are examples of a (relatively) closed supply of cannabis. What is more, it has been noticed that the CSC model "appears to contain the possibility to undermine a significant part of the black market whilst restricting the industry of traditional, artisanal production methods and also preventing a decrease of the cannabis prices, which would take place with the legalization of a commercial, large-scale production" (Caulkins et al., 2015a, p. 59; Pardo, 2014). The model of the cannabis social clubs also enables the introduction of quality control and a system of labelling. As is the case with home cultivation, this model is not too remote from the current Belgian praxis, in spite of the remarkably inconsistent policy applied by the Belgian prosecuting services until this day with respect to the existing cannabis social clubs (see before). Like the model of home cultivation, this model does not imply any legalization of the cannabis trade and would therefore not entice any harmful consequences for the neighbouring countries. More than with the model of home cultivation, the cannabis social clubs are 'at odds' (Fijnaut & De Ruyver, 2014, p. 264) with the UN conventions and the relevant EU legislation. However, as long as Belgium would prohibit access to the clubs to residents of other countries, this model would probably no longer provoke significant resistance among the neighbouring countries, the NCB and the EU institutions. For that reason, Fijnaut and De Ruyver (2014, pp. 264-265) consider this model to be a possible option for a new cannabis policy.

III. LICENSE SYSTEM FOR NON-PROFIT ORGANIZATIONS

Besides these do-it-yourself models (self-supply and CSC), one could also consider a system of licenses for non-profit organizations (Caulkins et al., 2015a). In this model, the government exclusively issues licenses to organizations not driven by profit maximization. The licenses would enable the introduction of both the production and distribution of cannabis, or a system with separate licenses for each one of these phases. Additional conditions are required, for instance to ensure that all incomes are invested in drug counselling or drug prevention programs (Caulkins et al., 2015a). A mutual characteristic of this model and the models for home cultivation and cannabis clubs as described above, is the non-profit nature. This model therefore seems to be suitable to ward off advertising and would not stimulate problematic use (Caulkins et al., 2015a).

This model would – and more expressively than the previous two models – enable more control over the quality of the cannabis and the use patterns of consumers. The organization of prevention campaigns targeting consumers also seems to be more feasible with this model, since they are likely to be registered among the selected non-profit organizations. What is more, this model also enables a restriction of cannabis to national residents to hence limit the negative results for the neighbouring countries. The biggest drawback of this system is that it does not comply with the UN drug conventions and the relevant EU legislation. In spite of this, it is not unfeasible that the EU partners, with the exception of the INCB, would accept a more restrictive version of this model, provided that it is presented as a strictly determined and scientifically supported experiment.

IV. GOVERNMENT MONOPOLY

Introducing a government monopoly for the supply of cannabis is another option which is often pondered upon in scientific literature. The government can act as 'sole distributor' (Duke & Gross, 1998), assuming all tasks concerning the production and distribution of cannabis. This system goes beyond regulating and issuing licenses to non-profit or commercial organizations (Caulkins et al., 2015a). This model would probably facilitate enforcement, because "when only the government is allowed to cultivate marihuana, it is clear that all other produced substances are illegal" (Caulkins et al., 2013, p. 1049). This would be the most effect way to avoid traders, currently active on the illegal market, acquiring a position on the legalized market. This is also the reason why the Italian Franco Roberti (national Chief Prosecutor in mafia trials) advocated rather surprisingly in a recent interview for a government monopoly concerning the supply of cannabis (Sannino, 2017):

> Roberti: It should enable the government, considering its central role, to exclusively ensure cultivating, processing and selling of cannabis and its derivates. As such, you deprive market space from criminal organizations such as 'Ndrangheta and Camorra or the North African, Albanese or Afghan clans…
> Sannino: So not leaving management up to youngsters or clubs?
> Roberti: I'm dead against it..
> Sannino: Would it be too risky?
> Roberti: Yes, and especially for the government. One cannot take the risk that the criminals crawl back in through the window.

It is also possible to foresee various strategies concerning prices and taxes. This model does not only enable quality controls, but it also allows the restriction of excessive use by implementing a maximum amount per consumer and per month. It offers a way to avoid the risks related to commercial advertising (Caulkins et al., 2013). A possible problem connected to this model is related to the limited assortment of products and the lack of stimuli for innovation compared to the expected outcome of a commercial and competitive model (Caulkins et al., 2013).

According to several experts (e.g. Caulkins et al., 2013; Sannino, 2017) this model would succeed best in minimizing the harms of legalized cannabis consumption from the perspective of public health and internal safety. As with the license system for non-profit organizations, the biggest drawback of this model is its obvious incompatibility with the UN drug conventions and the drug-related EU legislation. Even more: the government itself becomes the provider of a drugs which is internationally still perceived as illegal.

Because of this latter reason, the track of a government monopoly was completely unthinkable until a year ago. However: since reforms and debates on a new cannabis policy gain momentum in an increasing number of countries, it might seem attractive in a few years, even for moderate-minded politicians and policy makers.

V. THE COFFEE SHOP MODEL (AND ITS VARIANTS)

As an alternative, the supply of cannabis can be left to the regulated market, or covered by a coffee shop model or in a context of licenses for companies with profit objectives. In the first case, only the distribution of cannabis would be regulated, inspired by the policy in the Netherlands. Since this model only regulates and reaches a specific part of the supply chain, the coffee shop model does not resolve a number of problems surrounding the production of cannabis, the so-called 'backdoor' problem. Since the coffee shops have caused problems in the Netherlands, this model does not offer any significant advantage over other models.

Within the model of a limited number of licenses for companies with profit objective, both the production and the distribution of cannabis could be regulated – even if this would imply separate licenses for the production and the distribution. Once again, the government could introduce specific conditions to regulate the delivery of licenses in a more or less strict fashion and to restrict the size of the market – which would equal an 'oligopoly' (Caulkins et al., 2015a). By reducing the number of licensees, follow-up and inspection of the companies becomes much easier (Caulkins et al., 2013). In addition, the government can keep a close eye on the activities of licensees.

With a small number of licenses and strict government control, this model could offer the same advantages in the field of public health and safety as the license system for non-profit organizations and the government monopoly – especially in a context like Belgium, where there are no powerful mafia-like criminal organizations which have been embedded over several decades. Like the two cited models, a license system for a small number of companies with profit objective is not combinable with the current international drug control system. Additional problem is that the licensees could start to lobby within the government after a while, to deflate controls, which happened after the abolition of the Prohibition in the US with the alcohol policy.

VI. COMPETITIVE, REGULATED MODELS

Finally, a competitive, regulated cannabis market can be introduced. Unlike the 'oligopoly' model discussed above, this model does not entail a principle restriction of the number of producers or 'players'. This model is often associated with the policy on alcohol: in spite of the fact that the production and distribution – like other economic markets- take place in a free market, additional demands can be made concerning the production and trade of cannabis (Caulkins et al., 2015a). These rules can refer to quality control, packaging, limits concerning the amounts a user can purchase and many other technical aspects. These cannabis-specific rules in a competitive, regulated market form the biggest difference with the extreme potion of an unregulated (but legal) cannabis market. In the latter, the annulment of the prohibition on supplying cannabis is not replaced by a specific legal structure. The extreme option of an unregulated free market for cannabis leads us back to McBride and his colleagues (1999) who referred to 'commercialization' and the 'virtually unrestricted acceptance of the distribution of goods and services on the free market', without any regulatory framework stating conditions for the operation of this market.

Although the policy of Colorado and Washington is not far from this model, it most certainly does not seem commendable. This model only rarely enables achieving the previously stated important objectives in terms of public health and safety. It is in complete opposition with the UN conventions and the European legislation. What is more – and not insignificantly – this model is even more susceptible to lobby actions of the new cannabis companies which could plead for more lenience in control after a while.

VII. MEDICINAL CANNABIS PROGRAMMES[37]

In addition, several medical models can be drawn up as suggested by various studies (Duke & Gross, 1998; Kleiman, 1992; MacCoun et al., 1996). With respect to the supply of cannabis for medical purposes, two different scenarios can develop. On the one hand, a completely separate (and specific) model based on prescriptions by 'qualified physicians'. In this case, cannabis can be produced exclusively for this goal by specialized companies and it can be distributed in specialized shops (for instance authorized pharmacies). On the other hand, the previously described models can be adapted to also distribute cannabis for medical purposes. For instance, it is possible to consider both cannabis social clubs for recreational users and cannabis social clubs for medicinal users (with different conditions and restrictions); or separate licensing systems for companies which produce cannabis for recreational and medicinal cannabis.

Scientific literature contains a great deal of references that cannabis with a high CBD content is effective on pain and spasms, for instance for patients with multiple sclerosis (MS). It also seems to be effective against inflammation reactions. Cannabis with mainly THC is especially effective for afflictions such as Gilles de la Tourette syndrome, therapy-resistant glaucoma and when suffering from loss of weight, nausea and vomiting. Some cancer patients use cannabis for this reason to reduce the complaints of their disease, or to reduce the side-effects of their treatment.

Last year, the Minister of Health Maggie De Block (Open VLD-liberals) made medicinal cannabis available under strict conditions in our country (with the Royal Decree of 25th June 2015). Since March 2016, medicinal cannabis, in the form of an oral spray of cannabidiol and tetrahydrocannabinol (Sativex®) – can be procured through the hospital pharmacy (and hence not any pharmacy). The conditions are very strict: the therapeutic indication is limited to the treatment of symptoms in adult patients with moderate or severe spasticity caused by MS and only those who do not respond to other medication against spasticity can try the product. Only when a test treatment period has been passed and clinical improvement occurs, are they allowed to continue with medicinal cannabis. What is more, the product has to be prescribed by a neurologist.

So in reality, medicinal cannabis is not legally available for other significant groups of patients. This also becomes clear from the fact that currently (unregulated) cannabis social clubs exist which distribute cannabis exclusively for therapeutic purposes. A wider, legally regulated availability of cannabis for medicinal purposes in specific groups of patients is therefore desirable.

At the same time, we would like to point out the importance of a strict separation between the cultivation and distribution of cannabis for medical use and the cultivation and distribution of cannabis for recreational use. It has to be avoided that cannabis for medical purposes trickles down to illicit circuits or to legal circuits for recreational use. What is more, it should never be the objective that under the guise of supply of medical cannabis a factual parallel market for recreational cannabis is created, such as has been the case in some American states. We therefore plead that medicinal cannabis possesses a well-defined composition in terms of quality and quantity.

When cannabis is consumed as a medicine or as a medical treatment of symptoms, the product should obviously comply with pharmaceutical quality. The government can decide to be inspired by the Dutch model for medical cannabis, where the *Office of Medicinal Cannabis* is the governmental organization in charge of the production of cannabis for medicinal and scientific purposes. The company *Bedrocan* has been the sole producer since 2003 of medicinal cannabis for the Dutch Ministry of Health, Welfare and Sports.

[37] In chapter 6 we already briefly described the eixistence of medicinal models in, for example, the United States, Canada, Israel and the Netherlands.

The conditions for the preparation of medicine are also defined legally in Belgium, and as a result, medical cannabis products should also comply with these conditions. Not a single medicine can be commercialized without registration or license. This license is issued by the Ministry of Health, after advice of the Medicine Committee within the Federal Agency for Medicines and Health Products (FAGG), or by the European Community, after desired advice by the Committee for Medicinal Products for Human Use (CHMP) or the Committee for Medicinal Products for Veterinary Use (CVMP) within the European Medicines Agency (EMEA).

Medicinal cannabis products can only be used in accompaniment and under supervision of a physician, and always on prescription. After all, the effect of medicinal cannabis differs per person. A physician has to confer with the patient to determine which variety would be most appropriate, how much he/she needs per administration and per day, and how the patient will use the medicinal cannabis. The treating physician also takes account of interactions of medicinal cannabis products with other medicines which the client takes in the context of his/her treatment.

The distribution of medical cannabis can only occur through the pharmacies. Pharmacies cannot supply medicinal cannabis products without a medical prescription. The pharmacist also has to ensure that the patient applies his/her treatment correctly. This implies, among other things, that he explains to the client when and how his medicinal cannabis should be taken; that he warns the client about possible side effects, and that he also takes account of interaction of medicines taken by the client.

C. CONCLUSION

In the social and political debate, focus is often placed on the extreme options: a complete prohibition (with criminal markets) or a commercially free market. These two options de facto form the extremities of the spectrum of possible policy options. They basically are completely unregulated markets, where the market (legal or not) is controlled by people or organizations almost exclusively driven by profit, resulting in unacceptable high social and health expenses. However, a large spectrum of intermediate options exists between these two models to regulate the production, supply and use of cannabis (or other intoxicants).

These models offer the possibility to strictly regulate various aspects of the market, hence minimizing the potential negative results of cannabis use and the cannabis market and maximizing potential advantages. In reality, the introduction of a legal regime can adopt several forms (and have several results), depending on the choices on which a specific bill is based.

9. RECOMMENDATIONS FOR A NEW BELGIAN CANNABIS POLICY

The Belgian drug policy is based on honourable objectives, but it has failed to achieve its main goals these past few decades – a decrease in the number of dependent citizens; a decrease of the physical and psychosocial damage which can be caused by drug abuse; a decrease of the negative consequences of the drug phenomenon for society (including social disruption). The particularly large government expenses linked to the confinement policy and to fruitless attempts to make the supply diminish, supersede more cost-effective investments based on scientific proof concerning the reduction of the demand and the limitation of the damage.

The frequent use of cannabis entails damage, but it is not more damaging than the frequent use of alcohol or tobacco. Although there is no specific legal right to use cannabis, the criminalization of adults who take drugs out of free will, does violate a whole array of internationally acknowledged legal rights, including the right on privacy, health, culture and religious freedom. The risks for users are large when cannabis is produced and distributed by criminal and profit-driven fortune seekers. A prohibition pushes the market into the direction of riskier, stronger (and hence more profitable) drugs, it results in cannabis with an unknown strength and purity, it encourages risky use, it stimulates the use in unsafe settings and it forces cannabis users to contact a possibly violent criminal underworld.

Criminal production and supply enlarge the dangers related to cannabis use, because young people are encouraged to consume risky products. Repressive measures push the production of cannabis and its trade in the hands of criminals who take advantage of the prohibition regime and who, if necessary, use force to solve their mutual conflicts. Whenever there is a larger demand for cannabis, a prohibition only creates an opportunity for criminal profits. Each disruption of the drug production and trade in cannabis simply leads to price increases, which activates even more criminals on the market. Hence: no matter how many crops are destroyed and how many smuggle networks are nabbed, they will always be replaced by others.

Criminalization and mass arrests only offer a false sense of security. They ensure that politicians can be perceived as people 'who do something about it', but rather than tackling the problem, they waste scarce resources and promote the marginalization of sensitive risk groups and vulnerable communities, such as small-scale cultivators, members of cannabis social clubs or people who use cannabis for medical reasons.

A successful policy actually succeeds in controlling the risks of drug use as much as possible, in a rational manner, and it simultaneously strongly dissuades the use of psychoactive substances. Establishing a cannabis policy which is healthy, just and humane, is the most moral response to the cannabis question – and this implies strict legal regulation. Although regulation of cannabis is often presented as a 'liberalization' or 'dilution' of the legislation, it can and should be the opposite: in concerns harbouring the trade in cannabis in a legal framework, hence enabling strict control. Strict control is impossible under a total cannabis ban. Regulation enables the government to control which cannabis can be sold, who has access, and where it can be sold. Under a ban, criminals are the ones deciding this. In the system of regulation, which we advocate, many specific activities can and should remain illegal or submitted to sanctions (e.g. the sale to minors, sale without a license, participating in traffic after cannabis use).

Effective regulation, which includes the introduction of an age limit, can restrict the access for youngsters to cannabis. When youngsters do get their hands on regulated cannabis, at least they will be better protected because the cannabis is controlled on quality, THC content and dosage, and it is accompanied by health and safety regulations (as is currently the case with medicines). As such, problematic use can be limited.

The prevalence of drug use is often equalled to the prevalence of drug-related damage, but the majority of cannabis use is not problematic. Instead of narrowing the vision to use, the policy should try to reduce the total damage. It is possible that the use of cannabis in general will increase under a system of legal regulations, but problematic use will be easier to restrict by controlling its quality better (such as THC levels). Research consistently indicates that the trends in drug use are mainly triggered by significant cultural, social or economic developments, and not by the intensity of penalization. In many countries, the use of tobacco is much lower than 30 years ago. This decrease was obtained without a complete prohibition or a criminalization of any use. It results from health information and stricter market regulation, and this was only possible because tobacco is a legal substance. The decrease of the tobacco use in many countries also indicates that the threat of criminalization is not necessary to make people aware of the risks of the use of a substance. Stricter regulation and more health information are more efficient and humane manners to encourage people to make healthier choices in terms of life style. Even when occasional cannabis use would increase, the health damage and financial expenses will decrease, which result in a net benefit for society as a whole.

What is more, the current policy pushes the vast market in the hands of organized crimes. With the legalization of the cannabis supply, this illicit market and the resulting social and environmental damage are largely neutralized. Criminological research indicates that, when opportunities for certain criminal acts disappear, only some of the involved perpetrators will orient towards other criminal activities. As happened in the thirties after the abolition of the (alcohol-related) Prohibition in the US, a large part of the perpetrators will renounce criminality. 'Responsible security', leading to a decrease of criminal opportunities, is, also according to Van Dijk, Tseloni and Farrell (2012) the most important cause of the significant decrease in most countries since the nineties. And according to the analyses of the data of the International Crime Victimization Survey (Farrell and Brown, 2016), the decrease of burglary and cart theft, which has started in certain counties as of the eighties, probably had a domino effect on other forms of criminality. The cannabis policy in Belgium should be aimed at:

- Controlling all aspects of the production of cannabis;
- Controlling the way in which cannabis products are available;
- Conducting conscious politics of price control with respect to cannabis products;
- Controlling the sales outlets of cannabis;
- Increasing the control on the user and the locations where cannabis can be used;
- Providing legal supply channels, stopping the cannabis user from having to deal with criminal environments;
- Rollback of the illicit channels, weakening and (in the long run) eliminating the black market in cannabis, as well as depriving organized crime of their main source of income and hence their economic power;
- Controlling the composition, purity, strength and in general the quality of cannabis, to protect public health;
- Controlling the marketing strategies of cannabis producers, as is attempted with the legal intoxicants;
- Reducing the overcharge of the criminal justice system by reducing the number of cannabis-related cases which need to be traced and ruled by a judge;
- Reducing the prison population by reducing the number of people incarcerated for cannabis-related crimes;
- Reducing the selectivity whilst intervening in cases of disruption, whilst tracing cannabis-related facts;
- Stopping pollution resulting from large-scale illicit cannabis production (cannabis plantations);
- Stimulating a more cost-effective and scientifically based investment in effective preventions, in the reduction of the demand and damage restriction;
- Simplifying the task of prevention and counsellors, by making their target audience more accessible, and by releasing more resources for dissuasion, damage restriction and counselling;
- Ensuring a closed system which does not affect the demand and supply of cannabis in neighbouring countries, hence not afflicting their drug policy.

A large spectrum of legal or political models exists to regulate the production, supply and use of cannabis (or other intoxicants). On one end of the spectrum, the criminal market which is created by an absolute prohibition. On the other end of the spectrum, we find the legal, commercially free market. Either extreme of the spectrum is a completely unregulated market. These two extreme options are connected to unacceptably high social and health costs, because those controlling the market (whether legal or illegal) are almost exclusively driven by profit. None of these two options is therefore desirable.

Upon commencement, the Belgian government should opt for a very restrictive model, with a far fetching form of government control and strict regulation. When thorough and cautious evaluations are positive, a later phase can imply a switch to a less restrictive and intervening model (when new social norms and social control mechanisms on the legal cannabis market have developed). From a pragmatic and policy perspective, that would be a better scenario than the reversed development where more restrictive controls have to be introduced retroactively because the market has been regulated insufficiently. What is more, these are lessons learnt from the retroactive regulation of the tobacco and alcohol market.

A restrictive model seems to be the most appropriate to offer the other EU member states the guarantee that they will not endure any negative results from the new Belgian cannabis policy. A restrictive model would also be less stringently incompliant with the UN conventions and the drug-related EU legislation and would hence probably provoke less resistance among the INCB, other UN institutions and the Council of Europe.

We would like to emphasize beforehand that legal regulation is not a 'silver bullet' or panacea for the drug problem. Regulation will not make problematic or harmful cannabis use disappear, nor will the criminal market suddenly cease to be because of it. In a restrictive model, most forms of cannabis production and trade remain strictly prohibited, but a number of limited activities are transferred to a legal context. A cannabis ban does not lead to a drug-free world, nor can a regulated model create a risk or harm-free world. Especially following the implementation of a new policy in Belgium (or any other country), law enforcers will have to act resolutely to prevent existing criminal groups from undermining the new rules, or that the local cannabis production would re-orient towards export or focus on other criminal markets or activities.

At the same time, a legal regulation will take one of the major criminal opportunities in the world out of the hands of criminal organizations, especially when the policy has spread throughout (or in a large part of) Europe. Ending the cannabis prohibition means liberating resources to tackle other forms of crime. What is more, this challenge would become a lot easier, because through caving the illicit drug profits from criminals, their power will also shrink.

Legal regulation is a pragmatic approach of several of the severe problems caused by the cannabis prohibition. When the bigger challenges evoked by drugs are meant to be tackled meaningfully, legal regulation should be matched to improvements of the current forms of health information, prevention, treatment and recovery.

The reform of a cannabis policy and the development of a concrete blueprint for a regulated market is a particularly delicate balancing act for various reasons. First of all, the Belgian government will have to take account of the international, juridical context. In the current circumstances, it would best op for a reform which can be implemented within the parameters of the current international conventions, such as the decriminalization of possession for personal use, the cultivation for personal use and cannabis social clubs. Those measures are relatively easy to implement, and they are justified based on the available evidence.

Secondly, a reform of the cannabis policy should find an important equilibrium between the (urgent) implementation of a new policy and the risk of a hastily implemented policy. The experiences with the regulation of alcohol

and tobacco and the developments in the American states Colorado and Washington teach us that hastily introducing a regulation, where especially retroactively more restrictive control has to be introduced because the market was regulated insufficiently, is the least desirable scenario. It would therefore be the best option for the Belgian government to go ahead with a cautious and initially very restrictive and government-intervening scenario.

Thirdly, the development of a suitable Belgian scenario is also a quest for a design which on the one hand does not contain too many restrictions, so that people continue to supply themselves through a parallel illegal market, and a design which on the other hand does not contain insufficient restrictions, to prevent cannabis use and sale to be encouraged. There will always be tension between commercial interests (related to maximizing profit, hence tending towards encouraging and promoting cannabis use) and the interest of public health (where minimization of the damage and risks is targeted, hence moderating or reducing cannabis use). It is therefore important that Belgian government places its highest bets on the protection of public health and eliminates the stimuli for profit as much as possible.

The Belgian government has to learn lessons from the control of other risk-inducing substances (alcohol, tobacco, medicines) and activities (gambling and prostitution) to ensure that regulation enhances public health and safety. It should also draw conclusions from the mistakes made in the context of alcohol and tobacco control. The current prevalence of alcohol and tobacco use is the result of decades of commercial promotion, often in barely regulated markets. With drugs being illicit at this moment, the Belgian government can begin with a *tabula rasa.* From the very start, the government can draw up optimal regulating frameworks, where all aspects of the market are controlled. Cannabis markets do not need to function based on commercial principles. Other options exist, where government institutions or non-profit organizations manage the cannabis trade, in ways which out rule the financial incentives to initiate or stimulate use.

This Metaforum workgroup has considered the option to elaborate a concrete and very detailed regulation model. The different stakeholders have also referred during the discussion of this report to the lack of a concretely elaborated model for the regulation of cannabis in this report. As cited above, such an exercise is a delicate and time-consuming chore, which should be formed based on a thorough and multi-disciplinary thought frame. The authors involved in this Metaforum project disposed of neither the means nor the time to take up this challenge. However, three members of this group have previously published a concrete and detailed scenario for a regulated cannabis market (Decorte, Tytgat & De Grauwe, 2017), which can serve as basis or inspiration for a scientific, social and political debate. Obviously, costs will be connected to a shift towards a regulation model, especially when the neighbouring countries do not legalize cannabis, but these costs will most likely be low compared to the expenses of maintaining the cannabis ban. Cuts on (counterproductive) law enforcement and income of taxes based on legal sales of cannabis can be used to subsidize more effective, purposive information programs and health interventions (such as prevention, harm reduction and treatment programs). Besides, the legalization of cannabis is not merely or mainly a question of financial profit and expenses, but first and for all an ethical one; is the government allowed to prohibit a psychoactive substance for adults, which is less harmful than some legal substances?

An important footnote obviously is that the drug policy is a matter of particularly many governments (the Federal State, the Communities and the Regions) and that it is an especially thorny exercise to coordinate the drug policy in all its aspects (prevention, counselling as well as repression). When the switch to a regulation model is prepared, the authorities and the Drugs Policy Cell (which supports the authorities and the Interministerial Conference on Drugs Policy) will have to take account of a calibration of the policy between these levels, and safeguard a flanking policy in view of minors. Other points to be taken into account of are a communication strategy towards the population (and youngsters as a vulnerable population in particular), but also with respect to people in the field in various sectors, and a correct correlation of the policy on various levels (federal, regional, local).

To round off, these recommendations only apply to the policy concerning cannabis. We explicitly suggest to only alter the cannabis policy, although some arguments for regulation also apply to other intoxicating substances. The main reason for only advocating the regulation of cannabis, and not all drugs, is first of all scientific. After all, THC (the active substance in cannabis) rarely or never leads to an overdose with causal connection to (acute) death, unlike drugs such as heroin, cocaine and amphetamines. In addition, THC mainly leads to mental dependence (such as nicotine), but not to physical dependence (which is the case with for instance heroine). Secondly, a social argument is valid, i.e. the prevalence of cannabis (cultivation, trade, use) is globally speaking so high compared to other drugs, that regulation is a priority for this drug (as for alcohol). Finally, we only plead for regulation of cannabis in view of the political developments in this field: at this moment, only cannabis is placed on the political agenda on a national and international levels, which is not the case for other drugs.

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APPENDIX 1 – DEFINITIONS OF JURIDICAL CONCEPTS

- **Depenalizing and decriminalizing**: There is no international consensus about the exact meaning of these notions (EMCDDA; 2005: 12; Pacula et al., 2005). In Belgium, these terms are mainly used interchangeably, where it mainly refers that a form of criminal behaviours is barred from criminal law. Internationally, a distinction is made between depenalizing and decriminalizing**.**

  The term 'depenalizing' means that the line of conduct is no longer penalized, although it remains criminal formally and the statute of crime is maintained. In other words, the line of conduct is no longer prosecuted (as has been the case in Belgium for the past 15 years for the possession of a small amount of cannabis for personal use). The term 'decriminalizing' means that restraining a line of conduct is barred from criminal law and hence loses the formal statute of crime. However: the line of conduct is still restrained, but through another mechanism than criminal law (for instance through the system of the administrative sanction).

- **Legalizing**: making something legally admissible. Legalizing 'the possession of cannabis for personal use' does not only imply that this crime will disappear from criminal law, but also that no administrative sanctions or civil liability is connected. Legislation is always entwined with regulation (*infra*) and does not necessarily mean that all drug-related activities, such as trade and production, disappear from the criminal context. Were the legislator to legalize the 'possession of cannabis for personal use' in certain cases, this would imply that it is fully permitted and not sanctioned in any manner, provided the appurtenant regulation is complied with. In this respect, legalization differs from decriminalization and depenalization.

- **Regulating**: creating a legal framework. When the legislator legalizes the use of cannabis, he will always connect certain conditions. The regulation of cannabis use implies that the production, sale, possession use… of cannabis would be submitted to government rules and possibly government control...

- **Non-criminal**: a line of conduct or action which is not qualified as a crime, is legally seen as non-criminal. However, this line of conduct can be eligible for other non-criminal sanctions, such as for instance an administrative sanction (*infra*). Non-criminal behaviour cannot be permissible or illegal. Hence, it does not equal legal behaviour. There are lines of conduct which can be qualified as a crime, without being penalized, since the legislator has provided a ground of justification, for instance concerning the use of cannabis for medical purposes.[38]

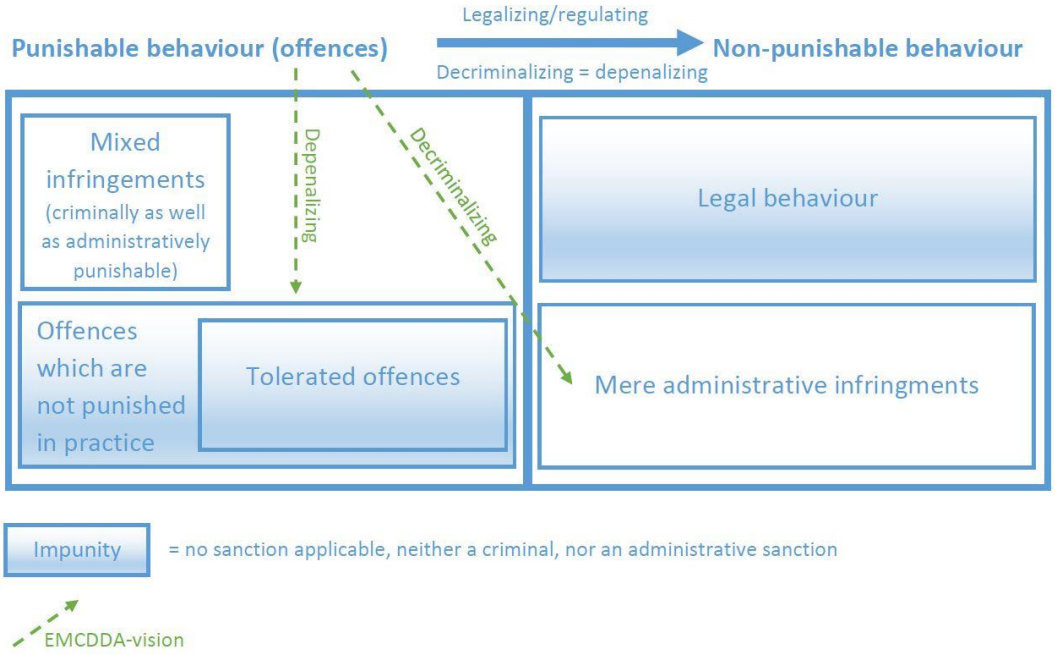
- **Impunity**: the sum of on the one hand lines of conduct which are not penalized and on the other hand lines of conduct which are penalized, but which are not penalized in practice. This latter case can have various causes, for instance a low detection priority by the Public Prosecutor (*infra*) or the practical infeasibility to detect, determine and prosecute certain infractions.

- **Tolerate**: allowing something which is legally prohibited in certain circumstances. In other words, the government opts for non-prosecution and non-penalization of certain infractions. In Belgium, the policy on the possession of cannabis for personal use is a tolerance policy, as explained in the circular letter nr. COL 2/2005, issued by the College of Prosecutors General.

[38] Since 5th July 2015 pharmacists in Belgium are permittted to sell certain approved medicines with cannabis. RD of 11th June 2015 for the regulation of products containing one or several tetrahydrocannabinols, *BG* 25th June 2015.

- **Low detection priority**: the Public Prosecutor has the liberty to either or not prosecute crimes, depending on social desirability and the opportunity. To act consequently in this respect, the Public Prosecutor applies a policy to detect and prosecute certain crimes with priority. The legislator has determined that the Minister of Justice determines these directives of the legislative policy in ministerial circular letters. The purpose of these circular letters is on the one hand avoiding arbitrariness and on the other hand permitting some form of political guidance. Legally speaking, these circular letters are merely internal service instructions.[39] For cannabis use, this policy is included in the circular letter nr. COL 2/2005 issued by the College of Prosecutors General. This circular letter determines that the possession 3 grams of cannabis for personal use by an adult has the lowest detection priority. An exception to this rule exists, more specifically when this possession is combined with aggravating circumstances or a disruption of the public order, for instance possession in an educational institution.[40]

Figure 4: Juridical terms in a Venn diagram



[39] The circular letters are only binding for magistrates of the public prosecurtor. D. VAN DAELE, "Het juridische statuut van de richtlijnen van het strafrechtelijk beleid", (the juridical statute of the directives of the criminal policy *NC* 2014, (165) 171.
[40] Article C.1 and 2 Circular Letter nr. COL 2.2005.