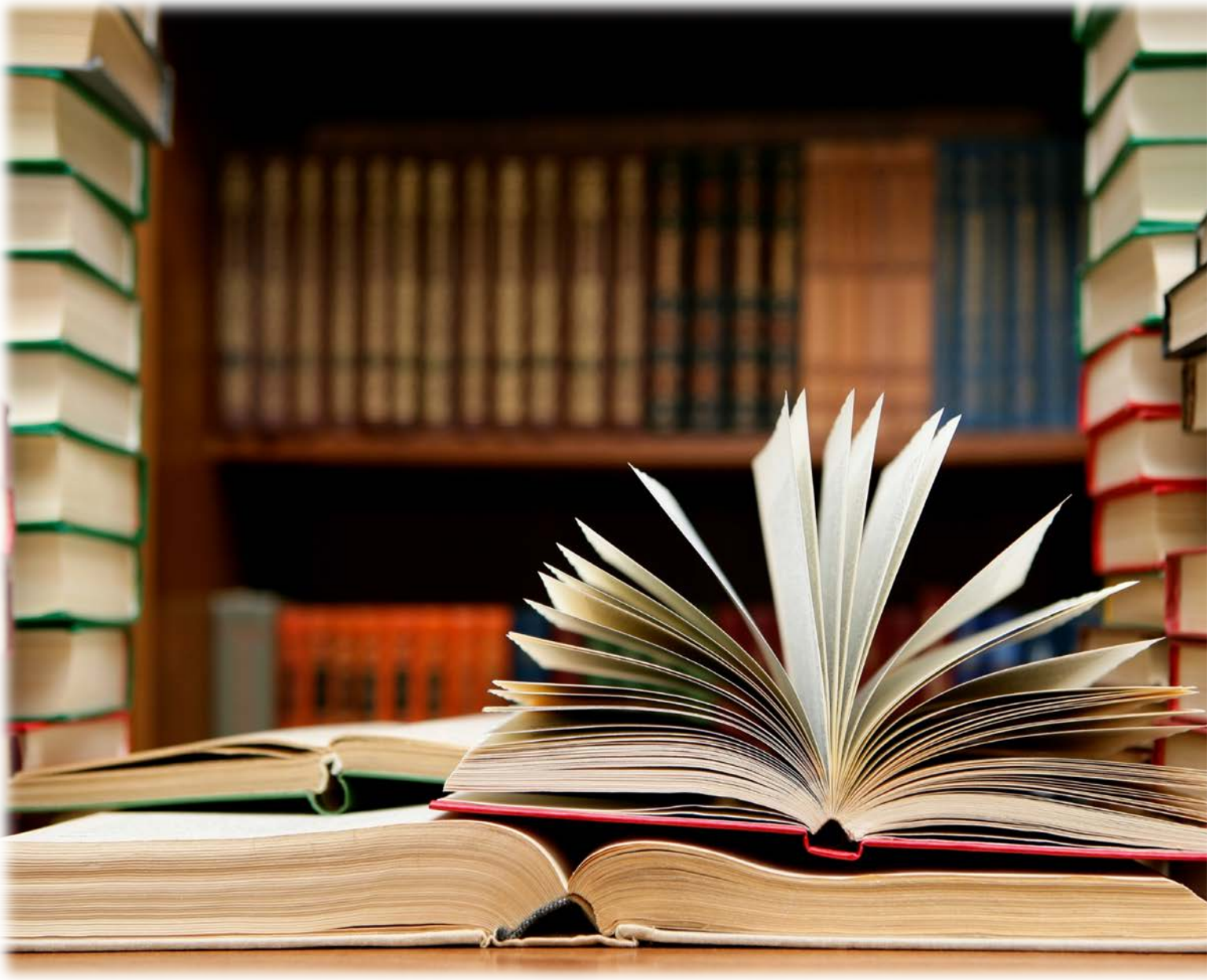
Targeting Marihuana Growing Operations in British Columbia

A Summary Report Highlighting Current Research Findings



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Introduction

Marihuana growing operations are an enduring crime and social problem for British Columbia. At the end of the 20th Century, the province had witnessed a surge in the number of marihuana growing operations coming to the attention of police forces. Growing in sophistication and increasingly moving indoors into residential neighbourhoods to avoid detection by law enforcement, the problem became just as much one of public safety as it was about the control of an illegal substance. Moving into the 21st Century, while the number of marihuana growing operations coming to the attention of police appeared to plateau, the size and sophistication of these operations had increased to the point where the same number or fewer of what had become much larger operations were producing far greater yields, supplying not just domestic consumption, but also largely fuelling international organized criminal drug trafficking. It became evident in many of the more urbanized centres that the traditional police response of waiting for public tips and complaints or coming across growing operation in the course of other police investigations was not adequate to combat the problem. Therefore, police tactics began to change in various locations around the province, accompanied by innovative, targeted approaches by other relevant stakeholders.

This project involves the cataloguing of much of the research that has focused on the problems of marihuana growing operations, highlighting the multiple facets of responses to this problem. The purpose of this report is to summarize this research in order to both document the various approaches used and identify the areas in which further action is needed. The report begins by providing background on the growth of the marihuana production industry in British Columbia. The subsequent section highlights what research suggests are some of the key reasons why British Columbians have been so concerned about this problem and the fact that it has become so entrenched into the criminal landscape of the province. The bulk of the report then discusses the various responses to marihuana production. This section begins with the criminal justice system approaches, focusing on tactics used by law enforcement, and then on outcomes to marihuana production cases in the courts. Following that is a discussion of the adoption of non-criminal justice legal response including the use of civil forfeiture, municipal strategies, and bylaws, in addition to the Province Government's legislative responses that have enabled them. Approaches taken in other social arenas, such as electrical consumption, real estate, and health care, will also be reviewed. Finally, the report ends with a discussion of some of the key challenges that could impede the progress made thus far, of which all concerned partners should be preparing to address.

Background

Plecas, Dandurand, Chin, and Segger (2002) studied the marihuana production industry in British Columbia, collecting and analyzing information on the characteristics of growing operations that came to the attention of police between 1997 and 2000. In 2005, the project was revisited, adding new data from the years 2001 through 2003 (Plecas, Malm, & Kinney, 2005). The conclusion from both of these studies was the British Columbia had a serious and substantial problem with marihuana production, and one that was trending toward becoming even more problematic. In general, cases of marihuana production increased across the province from 1997 to 2003, increasing by over 200% from 1997 to 2000 before largely levelling out from 2001 to 2003 (Plecas et al., 2005). Despite the plateau in terms of the number of marihuana growing operations that came to the attention of police, there was not a slowing in the actual growth of the industry across the province. Although the number of marihuana production cases appeared to stabilize, the size and sophistication of the operations showed continued increase. Over the seven years, the average marihuana

growing operation had gone from one with 9 high-intensity light set ups with 149 plants to a 16 light operation with 236 plants (Plecas et al., 2005).

More recent figures from 2010, presented by Plecas, Diplock, and Garis (2012), indicated that marihuana growing operations continued to grow in size and sophistication since the beginning of the 21st Century. The recent data on marihuana growing operations coming to the attention of police suggested that the average number of lights had increased to almost 30 (Plecas, Chaisson, Garis, & Snow, 2011). This increase in the average number of lights used for production is of key importance, suggesting that the average yield of illegal marihuana per operation increased nearly twofold since 2003. Unlike in previous decades where the size of a marihuana growing operation was measured in the number of plants and/or the amount of harvested product seized by police, it has become apparent through research (Bouchard, 2008; Toonen, Ribot, & Thissen, 2006) that the number and power of the lights present at the operation can provide a better measure of the scale of production. Typically, one can follow the grower's "rule of thumb", which for each 1000 W bulb used in production, an operation can yield one pound of harvested marihuana (Bouchard, 2008, p. 302).

As was reported by Garis (2005), "[t]he notion that grow operations are small independent outfits is an undated one" (p. 10). Many of the growing operations that are active in British Columbia, and, undeniably, the average operation that comes to the attention of police should be considered commercially viable operations that can generate large, tax-free, illicit revenue. According to Plecas et al. (2012), based on the potential yield of an operation and the average consumption of even the highest-consumption medical users, a marihuana growing operation with the equivalent of more than four 1000 W lamps should be considered commercially viable. Even with four lamps, an operation could potentially produce annually more than five times the amount of marihuana used by the average medical user.

However, because only relatively few growing operations are ultimately being discovered by police, there have been efforts to estimate the actual size of the marihuana industry in the province. An influential report by Easton (2004) inputted the number of police-discovered operations found by Plecas et al. (2002) into an economic model to estimate that number of growing operations across the province in 2000 was approximately 17,500, worth an estimated $2 billion. An additional method to estimate the size of marihuana production industries, using a capture-recapture model, was explored by Bouchard (2007a) using information from the province of Quebec. Plecas, Diplock, and Garis (2009) used adaptations of both Easton's and Bouchard's methods to estimate the size of the industry, conservatively concluding that there were at least 10,000 active commercial marihuana growing operations in the province, producing an estimated $1.67 billion worth of illegal marihuana. The authors (2012) recently updated their figures using 2010 data on police seizures and information from BC Hydro, estimating that the size of the industry at the end of the first decade of the 21st Century was around $4.2 billion from over 13,000 active commercial indoor operations.

If these estimates are accurate, British Columbia's problem with marihuana should be considered one of the most sizeable in the world. This is particularly true of indoor, commercial marihuana production. Whereas other places around the globe tend to experience that majority of their marihuana cultivation outdoors (Bouchard, 2007a; Childress, 1994; Mallery, 2010; United Nations Office of Drugs and Crime, 2009, 2011, 2012), British Columbia's marihuana production industry has largely moved indoors. Between 1997 and 2003, approximately 16% of the operations discovered by police were located outdoors on private or public land, with the remaining 82% found primarily in residential houses and apartments or in outbuildings and even specially built bunkers (Plecas et al., 2005). In more recent studies of specific jurisdictions in British Columbia, the proportion of outdoor marihuana growing operations between 2006 and 2010 was lower, at 4% in the city of Mission (Plecas, Chaisson, Garis, et al., 2011), and 12% for the Cariboo region (Plecas, Chaisson, & Garis, 2011). The lower likelihood of detection by police (Bouchard, 2007a) combined with the

ability to grow larger crops on a year-round basis has likely contributed to the prominence of indoor growing in British Columbia. Indoor growing had become so prominent in British Columbia that the province experienced a related surge in the number hydroponic growing equipment retailers from 101 by 2002, almost ten times the number found in either Washington State or Alberta (Kirkpatrick, Hanson, Plecas, & Dandurand, 2002). The number has since decreased slightly (Bauman, Plecas, Taylor, Neal, & Huitson, 2006).

Compared with other high-producing jurisdictions, British Columbia's indoor marihuana production industry is on another level. Across Canada, other provinces face problems with indoor marihuana growing, but to a less extent that does British Columbia. Research on growing operations in Alberta by Plecas and Diplock (2007) found that there were on average just over 200 operations discovered by police, nearly 10 times fewer than in British Columbia. Recent figures from Statistics Canada data (as cited in Brochu, Beauregard, & Gagne-Tardif, 2007) showed a greater number of production incidents in Quebec than in British Columbia. However, estimates from Bouchard (2007a) suggested that while Quebec had a sizeable marihuana production industry, it the data reveal that it likely has fewer cases of indoor growing than does British Columbia. While estimates of the number of growing operations in Ontario have been as high as 15,000(LaBarge & Noakes, 2005), official statistics on drug production have indicated that a greater number of incidents of production are discovered in British Columbia (Brochu et al., 2007). Additionally, as of December 2012, under the Marihuana Medical Access Program, British Columbia also had the highest number of production licences, with more than 11,500 provided by Health Canada to growers across the province (Health Canada, 2013).

British Columbia also deals with a marihuana problem on a larger scale relative to other international jurisdiction. The province has often received international notoriety as a major source of marihuana (Gecelovsky, 2008; United Nations Office of Drugs and Crime, 2009). In the United States, California, the highest marihuana producing state (Gettman, 2006), along with other major marihuana producers like Kentucky (Gary Potter, Gaines, & Holbrook, 1990), are primarily experiencing problems with production outdoors. On a per capita basis, over 30 times the number of indoor growing operations are discovered in British Columbia as are in California[1]. And, although the United Kingdom has seen a rapid growth in the number of indoor commercial growing operations (Association of Chief Police Officers, 2012), the 7,865 operations that came to the attention of police in the United Kingdom in 2011-2012 is actually more than 3.5 times fewer per capita than the approximately 2,100 discovered by police in British Columbia in 2010[2]. While perhaps not considered on par internationally with those countries with massive outdoor cultivation problems (United Nations Office of Drugs and Crime, 2012), British Columbia's considerable concentration of indoor marihuana growing operations is almost unparalleled by other western democracies. This brings with it a multitude of harms and risks to the general public.

Harms and Risks of Growing Operations

The harms and risks associated to marihuana production have been well summarized by Plecas et al. (2012). While all illegal marihuana production brings with it inherent risks, the fact that these operations have moved

[1] According to data from the US Drug Enforcement Agency (2013), California experienced 505 indoor marihuana growing operation seizures by police in 2012. With California's population of over 37 million, British Columbia's 2,100 police seizures of indoor growing operations in 2010 (Plecas et al., 2012) and its population of only approximately 4.6 million indicate that the rate per population of growing operations could be higher than 30 times that of California.

[2] The 2,100 indoor growing operations in British Columbia in 2010 (Plecas et al., 2012) and a population of approximately 4.6 million indicate that the provinces per population rate of marihuana growing operations could be more than 3.5 times that of the United Kingdom. The (Association of Chief Police Officers, 2012) reported 7,865 commercial indoor growing operations in the United Kingdom for the county's population of approximately 63.2 million.

indoors, grown in size and sophistication, and proliferated across the province has created some substantial harms and costs for all British Columbians. There are risks to current and future inhabitants of properties used for marihuana production, to neighbours, and indeed to the surrounding community. Some of these harms have indirect effects on the entire province.

It is of note that although approximately 17% of British Columbians over age 15 reported previous year use of marihuana and many believe it can be used regularly with little harm (Stockwell, Sturge, Jones, Fischer, & Carter, 2006), research suggests that marihuana use will have some serious negative effects on a small portion of users (Diplock, Plecas, & Garis, 2012). Marihuana use results in some harms related to impaired, particularly when used while driving; social development and educational attainment, most notably for those who use at a young age; lung health; heart health; reproductive and foetal health; mental health; and dependency (Diplock et al., 2012). The potency of marihuana has also increased in some parts of the world (McLaren, Swift, Dillon, & Allsop, 2008), including Canada (Royal Canadian Mounted Police, 2010). Therefore, when considering that growing operations present some considerable risks to the communities of British Columbia, it should also be recognized that communities are being put at risk for the sake of the production of a drug that is itself of harm to users and is often produced and sold for the profit of organized criminal groups.

All growing operations pose some serious risks to British Columbia's communities, but indoor marijuana growing operations in residential dwellings are perhaps the most problematic. According to research by Plecas et al. (2012), indoor illegal marijuana production, particularly when done on a commercial scale, results in some sort of structural hazard or contamination in nearly all cases. These hazards are also shared by licenced medical operations (Garis & Clare, 2011). As residential houses are not originally designed to be ideal for indoor plant growing, buildings require substantial modifications to achieve a suitable environment. A number of extensive modifications are required including increased electrical power, altered ventilation, structural changes, added watering apparatuses, increased air flow, dehumidification, increased levels of carbon dioxide, added cooling units, and anti-detection measures. Johnson and Miller (2012) reported a particularly dangerous trend of growers disconnecting the furnace and re-venting the exhaust to rooms used for growing marijuana. The clandestine nature of this criminal enterprise results in growers circumventing the legal systems in place for making these types of modifications to buildings, which often require specific training, certification, and inspection to ensure safety standards are met. The substantially altered residence can present a number of hazards including fires (Garis, 2005; Plecas & Malm), electrical hazards (Garis, 2008), moulds (Johnson & Miller, 2012), and chemical residues (Blair & Weldman, 2009; Johnson & Miller, 2012).

Of particular concern is that the previously discussed hazards make marihuana grow operations much more potential harmful for youth and children than a typical home. While there are no current estimates of how many children live in homes used for marihuana growing, it is known that children have been located in homes during police seizures (Plecas et al., 2005). Fortunately, however, despite the presence numerous serious risks, research has indicated that children found in and around marihuana growing operations are not significantly less healthy than other children, and there is little evidence available to indicate that children are often seriously harmed by living in or around marihuana growing operations, (Douglas, 2010; Moller, Koren, Karaskov, & Garcia-Bournissen, 2011). However, the presence of a thriving marihuana production industry has been found to offer avenues for young people to become involved in criminal activity. Research by Bouchard, Alain, and Nguyen (2009) indicated that in some areas of Quebec, the marihuana cultivation industry provided the opportunity for 12% of youth between age 13 and 17 to become involved in crime. Additional research suggested that the opportunity extends beyond those youth who were already involved in other criminal activity (Nguyen & Bouchard, 2010), and may lead to future criminal offending for youth who achieve success and develop networks with adult growers (Nguyen & Bouchard, 2011). It is possible that

young people in parts of British Columbia, particularly those living in and around growing operations, are exposed to these opportunities in addition to the other hazards of living around growing operations.

In addition to the harms that exist in and around indoor growing operations, the production of marihuana is closely linked to illicit drug trade and the criminal violence commonly associated with it. Between 1997 and 2006, approximately 6% of police seizures from residential growing operations located a firearm, and over 10% located at least one type of weapon (Plecas, 2007). There have been numerous cases in British Columbia where drug production has attracted violence to residential neighbourhoods, particularly in the form of home invasions (Plecas et al., 2012). Home invasions for the purpose of stealing drugs, money, and weapons, referred to as 'grow rips' when targeting marijuana growing operations, sometimes involve serious violence and the use of weapons and physical restraints. While, in most cases, it is active drug production sites that are targeted by other criminals set on 'ripping' the growing operation, there are cases in which neighbours and other properties that are not associated to growing have been victimized by mistake (Plecas et al., 2012). Outdoor growing operations as well as those indoor licensed growing operations are not immune to this criminal activity.

Marihuana growing operations present harms that extent to all British Columbians. Although there is no evidence to indicate that the purchase of properties for illegal marihuana production has driven up housing costs (Schneider, 2004), the proliferation of indoor marihuana growing operations over the years has led to the contamination and potential devaluation of numerous properties around the province. The costs of remediation to new home owners can be in the range of $25,000 to $100,000 (Plecas et al., 2012). In terms of electricity consumption and the theft of electric power, Diplock and Plecas (2011) estimated the costs to British Columbians as more than $150 million. These costs are even more egregious when it is considered that illegal growers may also be generating over $4 billion in untaxed revenue at the same time as forcing British Columbians to assume the various risks previously described (Plecas et al., 2012).

Criminal Justice System Responses

Policing Responses

Police in British Columbia have been responding to the illegal production of marihuana for decades, with the number of incidents increasing gradually until the 1990s (Brochu et al., 2007). As was reported by Plecas et al. (2002) and Plecas et al. (2005), by the end of the Twentieth Century, police were increasingly "busting" greater numbers of production operations every year. However, for the large majority of incidents, as the number of growing operations increased, police were relying on reactionary methods to respond to the problem, with investigations resulting from proactive police work in only 6% of cases (Plecas et al., 2005). In two more recent studies of marihuana growing operations in Mission, British Columbia (Plecas et al., 2011) and the Cariboo region of the province (Plecas, Chaisson, & Garis, 2011), the number of investigations starting as a result of proactive policing had decreased to zero by the period between 2006 and 2010.

Proactive police efforts have been most prominent with eradication initiatives for outdoor grows. In British Columbia, there are several regions that are particularly suitable for outdoor marihuana cultivation, and have experienced greater levels of outdoor growing. These areas, such as on and around Vancouver Island, have been targets for police eradication initiatives over the previous few decades (Bouchard, Beauregard, & Kalacska, 2011; Plecas et al., 2005). Eradication initiatives involve large coordinated police efforts to locate and destroy outdoor marihuana cultivation sites prior to harvesting near the end of the summer. Often, these

efforts involve the use of police aircraft or marine vessels to locate production sites that have not been previously reported.

The advantage for police of eradication initiatives, with their ability to locate operations across a large land area through the use of aircraft, is that they largely prevent outdoor growers from benefiting from the establishment of large cultivation sites on remote public lands. According to Plecas et al. (2005), eradication initiatives were responsible for a sizeable increase in the number of marihuana growing operations that came to police in the Vancouver Island Region of British Columbia between 1997 and 2003. As Bouchard et al. found, these initiatives put all outdoor growers at approximately the same level of risk, regardless of where they plan cultivate. The result has been the fragmentation of outdoor growing into a larger number of smaller sites in which growers compete for prime locations (Bouchard et al., 2011).

Eradication initiatives have also been common in the United States (Gettman, 2006; Mallery, 2010; Gary Potter et al., 1990), where outdoor growing is responsible for the majority of domestically produced marihuana. Similar to the findings of Bouchard et al. (2011), research by Gary Potter et al. (1990) found that eradication efforts by American police resulted in the dispersal growing operations into smaller-scale sites over a larger area. However, this actually resulted in increased sophistication, greater production, improvement to the quality of the production, and more public support for growers (Gary Potter et al., 1990).

These factors together might partially explain the existence of a different trend that occurred in the Cariboo Region of British Columbia, where the discovery of growing operations as a result of proactive police initiatives dropped to zero for the period between 2006 and 2010 (Plecas, Chaisson, & Garis, 2011). In this region, a tripling of the proportion of outdoor marihuana growing operations also coincided with a nearly three-fold increase in the number of growing operations coming to the attention of police in that area from 1997 to 2010. Given that proactive police discovery dropped and the vast majority were reported by anonymous complainants (Plecas, Chaisson, & Garis, 2011), the increase in the number of incidents likely represented an increase in the actual number of growing operations being established in the area. Moreover, unlike what was found on and around Vancouver Island, it appears that the size of outdoor growing operations in the Cariboo did not decrease. In fact the average number of plants per outdoor site increased by more than five times from 185 in the 1990s to 1,050 between 2006 and 2010. The tremendous growth in the number of outdoor cultivation sites was not the result of fragmentation of larger outdoor sites into multiple smaller ones to avoid detection from eradication initiatives, but rather the appears to have been the displacement of growing opportunities from other parts of the province to this region with fewer policing resources to target the problem.

Police investigations of marihuana growing operations are complex and require substantial resources. Even when tips come in from anonymous sources, police investigators require solid grounds before they can obtain search warrants (Plecas et al., 2005). Girn (2007) argued that the complexity of marihuana production investigations had in all likelihood increased in a similar fashion to the increases observed for other police investigations as reported Malm et al. (2006; as cited in Girn, 2007). While they are certainly aided by improvement to detection technology like forward looking infrared (FLIR) thermal scanning technology, there are numerous challenges. For many years from the 1990s and early 2000s, there was uncertainty about whether the use of FLIR technology to view the heat loss from potential growing operations was acceptable under section 8 of the Canadian Charter of Rights and Freedoms (1982). In the United States, the issues surrounding FLIR and the invasion of privacy also received a lot of attention (Barna, 1996; Julie, 2000; Plaschke, 1993; White, 1995), although unlike the ruling of the United States Supreme Court in 2001, the Supreme Court of Canada ruled in 2004 that police use of FLIR for surveillance did not constitute an unlawful search (McKee, 2005). Additionally, as police cannot enter properties without a warrant or other legal

grounds, there are still other barriers to successful investigations including the fact that growing operations are continuing to be established on larger properties (Girn, 2007) and the increasing trend of locating growing operations within large underground bunkers and outbuildings (Plecas, Chaisson, & Garis, 2011; Plecas, Chaisson, Garis, et al., 2011)

Given the challenges police have faced investigating growing operations and the relatively large number of operations coming to the attention of police, one effective response has been to establish dedicated marihuana growing operation investigation teams. Often previously referred to as "Green Teams", this police response began as a result of the rapid increase in the number of growing operations in the cities of British Columbia in the late 1990s. Malm and Tita (2007) argued that by 2000, communities in British Columbia had largely chosen one of four policing responses to address the problem of marihuana production: maintaining the status quo, suspending investigations of growing operations, reinforcing their existing drug teams, or establishing specialized marihuana production enforcement teams. The role of these teams was to investigate all reports of marihuana production, partner with other relevant agencies, and build awareness among the public to report incidents of production. The research indicated an 82% decline in marihuana production for the 14% of police forces that established a dedicated "Green Team" (A. E. Malm, 2006; A. E. Malm & Tita, 2007). Additionally, neighbouring jurisdictions that chose one of the other responses, though seeing a slowing of growth, experienced a 7% increase in the number of growing operations.

More recently, the Royal Canadian Mounted Police (Royal Canadian Mounted Police, 2011) have developed a national "Marihuana Grow Initiative" (MGI) to respond to the problem of marihuana production across Canada. Through the three pillars of the initiative (enforcement, deterrence, and awareness), the initiative emphasizes the use of specialized teams, similar to the previously discussed "Green Teams", but with increased analytical capacity, better collaboration with municipal inspection teams, closer relationships with Revenue Canada and Proceeds of Crime investigators, and enhanced focus on developing technologies to better detect growing operations. The initiative started in September of 2011 (Royal Canadian Mounted Police, 2012) and while continuing to use previous policing strategies like specialized teams and eradication initiatives, the MGI has also established a national listing of all growing operations dismantled by the RCMP across Canada to increase awareness of the prevalence and harms of these operations in communities.

Even though the number of growing operations has dropped overall, the large numbers are still beyond what police can effectively respond to. Girn (2007), in reviewing police responses to marihuana growing operations, suggested that, based on the resource levels and response capability of investigators for the Surrey RCMP, a dedicated growing operation investigator could potentially respond to 21.5 growing operations in a year. For the approximately 4,500 growing operations coming to the attention of police in British Columbia per year (Plecas, Chaisson, Garis, et al., 2011), effectively investigating all these cases would take approximately 2.25% of the 9,292 authorized police resources in British Columbia (BC Ministry of Justice, 2013b). Despite continued effort by police to target marihuana production, the research has shown an inability for police to drive down production overall. While specialized teams have been effective at reducing the number of growing operations in some jurisdictions (A. E. Malm & Tita, 2007), other jurisdictions have seen unprecedented increases in the number and size of growing operations (Plecas, Chaisson, & Garis, 2011; Plecas, Chaisson, Garis, et al., 2011). Furthermore, the size, sophistication, and overall yields of these operations appeared to be only getting larger.

The inability for police to respond to the size of this problem and the complex requirements of investigations has been evident since the 1990s and appears to only be continuing. Plecas et al. reported between 1997 and 2003, the likelihood of police performing a full investigation on a reported marihuana growing operation decreased from 91% to 52%, and the likelihood that no action was taken increased from 7% to 22%. In

Mission and the Cariboo region, the likelihood of any action being taken after a report of marihuana growing fell from 82% to 49% and 80% to 31% respectively from the late 1990s to the period between 2006 and 2010 (Plecas, Chaisson, & Garis, 2011; Plecas, Chaisson, Garis, et al., 2011). Even for those investigations that end up resulting in a seizure, police have often not been in a position to make an arrest or recommend charges. These "no case seizures" rose from 35% of all seizures in 1997 to 64% in 2003, and by 2003 even occurred in 42% of cases in which suspects were found (Plecas et al., 2005). The trend of increasingly resorting to "no case seizures" reversed somewhat in Mission, as police may have put more effort into investigating only those cases in which evidence was strongest (Plecas, Chaisson, Garis, et al., 2011). However, in the Cariboo, the trend continued to get worse (Plecas, Chaisson, & Garis, 2011). While in many cases, these "no case seizures" were much more common for growing operations with relatively fewer plants, the average number of plants seized during "no case seizures" between 2006 and 2010 in Mission and in the Cariboo were 524 and 609 respectively (Plecas, Chaisson, & Garis, 2011; Plecas, Chaisson, Garis, et al., 2011).

However, despite the apparent lack of success at disrupting the industry overall, it is premature to assume that police responses are ineffective or unnecessary. As was seen by research on specialize investigative teams, having concerted police responses is much more effective at reducing the growth of marihuana production than doing no enforcement (A. E. Malm & Tita, 2007). Research by (Cohen, Plecas, McCormick, & Haarhoff, 2009) also found that in general, all marihuana crimes, including production, saw reductions in British Columbia, while increasing proportions of those crimes were being cleared through charges. Furthermore, operations in residential dwellings dealt with by police are very unlikely to be re-established in the same location (2007). Additionally, recent research by McGallagly and McKeganey (2013) concluded that law enforcement efforts can increase the likelihood that drug users will seek treatment. Unfortunately, with effective strategies in some jurisdictions contrasted against insufficient policing resources in many other parts of the province, the nature of marihuana production has increasingly be characterized by the takeover of organized crime groups establishing increasingly sizeable and sophisticated operations in rural and under-resourced areas. If the trend continues that relatively few cases get investigated, and many of those that do fail to result in recommended charges, it cannot be expected that a few jurisdiction with effective police responses will have a deterrent effect on the province as a whole. The challenges facing police as they try to respond to the problems of marihuana production have necessitated more multifaceted approaches in which police are only one part of a larger targeted effort against the problem.

The Response from the Criminal Courts

It has been argued that in addition to a lack of policing resources to target growing operations, part of the problem with the criminal justice system response to marihuana production has been that even when police are able to establish a case, "bust" a growing operation, and recommend charges, the results at the court stage are insufficient (Gecelovsky, 2008). Despite the fact there has been a high likelihood of Crown laying charges when police made a seizure that resulted in the recommendation for charges, the disposition figures indicated that between 1997 and 2003, 44% of charged suspects had all of their charges result in a stay of proceedings (Plecas et al., 2005). Those figures also indicated that Crown Counsels were often strategically "trading off charges and the involvement of multiple accused" to improve the chances of conviction against some suspects, evidenced by the fact that only 52% of all suspects were found guilty on at least one charge, but at least on suspect was found guilty in 73% of cases (Plecas et al., 2005, p. 46).

When suspects involved in marihuana growing operations are found guilty, the sentences have not generally been onerous in light of the potential for illicit, tax-free profit and the potential harms they present to the community (Plecas et al., 2012). Plecas et al. (2005) reported that in 1997, fines of on average just under $3,000 were most often the most serious sentence (in 34% of cases), followed by a custodial prison sentence

of on average around 4 months (in 19% of cases). However, by 2003, prison sentences of only slightly longer duration were the most serious sentence in only 10% of cases, with fines of on average just over $2,000 being the most serious sentence in 32% of cases. Conditional sentences of on average 8 months, were commonly the most serious sentence in 2003. Although the maximum sentence for the production of marihuana under section 7 of the "Controlled Drugs and Substances Act" (1996) was 7 years imprisonment, no suspect studied by Plecas et al. (2005) received a custodial sentence of greater than five years.

Relative to other jurisdictions, the court response has been much less substantial in British Columbia at nearly every stage. Alberta, a Canadian jurisdiction in close proximity to British Columbia is a case in point. From there report on marihuana growing operations in Alberta, Plecas and Diplock (2007) reported that although the proportion of "no case seizures" increased from 1997 to 2004, at highest they were only 23%, versus 64% in British Columbia. Additionally, charges were laid in 99% of all case seizures, and only 27% of charged suspects had all of their charges stayed, versus 44% in British Columbia (Plecas & Diplock, 2007). In terms of the severity of the sentence, although prison sentences were ordered decreasingly over the 8 year period, they were consistently at least twice as common as in British Columbia and on average almost twice as long (Plecas & Diplock, 2007).

Compared to American jurisdictions, the difference is even more pronounced. At the time of the report by Plecas et al. (2005), approximately half of the sentenced growers in British Columbia would have been subject to five year minimum penalties in Washington State directly to the south of the province (Gecelovsky, 2008). However, recent changes to the "Controlled Drugs and Substances Act" (1996) that took place in 2012 may change this discrepancy. These changes have increased the maximum penalty to 14 years imprisonment and added mandatory minimum prison sentences of 6 months for growing operations with between 5 and 201 plants or of 9 months if a child was at risk or the operation presented a hazard in a residential area. As the changes are too recent to observe any noticeable additional deterrent effect, future analysis will be necessary to determine if these new sentencing requirements will have an effect on the marihuana production industry in British Columbia and across Canada.

Non-Criminal Justice Legal Responses

Municipal Initiatives and Bylaws

Acknowledging that the criminal justice system has been unable to adequately combat the spread of marihuana growing operations alone, additional responses have been developed to target the problem in other ways. Perhaps the most important innovative responses to the problem of marihuana production in British Columbia have come from municipalities. In 2005, the cities of Abbotsford and Surrey, British Columbia established public safety inspection teams in an attempt to respond to growing operations from a public safety approach in addition to the a criminal justice approach (Garis, Plecas, Cohen, & McCormick, 2009). These teams typically involved representation from the fire service, an electrical advisor, the police, and a building inspector. These teams were able to respond to reports of marihuana growing operations to inspect residences in order to address the public safety threats, and could do so without the complexity of a law enforcement response. Although initially, this approach lacked the deterrent effect of police intervention, evidenced by the fact that the re-establishment rate was three times higher for growing operations inspected by the public safety inspection teams than it was for police "busts", the enactment of city bylaws quickly reduced those reestablishment rates to zero (Girn, 2007).

Across British Columbia, and notably in the province's Lower Mainland area, municipalities have enacted and enforced bylaws that better enable the discovery and remediation of indoor marihuana growing operations (Garis et al., 2009). Generally these bylaws function by enabling a site inspection which is followed by a notice to prohibit occupancy, then the establishment of a timeline for remediation, and upon completion of the required remediation, the occupancy prohibition is lifted (Garis & Clare, 2011). Evidence has indicated that these responses have largely contributed to the reduction of the number indoor marihuana growing operations around the province and in the Lower Mainland in particular (Garis et al., 2009). Unfortunately, however these bylaws represent only a patchwork of responses across the province that provide inconsistent protection across the different municipalities of British Columbia.

There are critics of these approaches. It has been argued that city 'safety' bylaws and 'public safety' inspection teams are used to bypass legal protections Canadians are guaranteed from unlawful searches by police (Carter, 2009). Because these bylaws are meant to make enforcement cost-neutral, the costs are born by those subject to inspection through the use of large financial penalties (Garis et al., 2009). Since these responses appear to be effective, it is important for their continued use to find the appropriate balance between ensuring public safety without placing undue burden on those with high energy consumption for other reasons. Furthermore, continued evaluation of these initiatives and new innovative strategies is warranted.

Provincial Legislation

While innovative municipal responses and bylaws have been quite successful at addressing the public safety issues marihuana growing operations, changes to provincial legislation have facilitated these efforts and made them more effective. In 2006, the "Safety Standards Amendment Act" (2006) was passed by the Government of British Columbia. This legislation clarified privacy issues and enabled BC Hydro to share information identifying properties exhibiting overconsumption of electricity. With improved clarity, municipalities had greater confidence in using their bylaws to identify, dismantle, and remediate growing operations (Garis et al., 2009).

In 2009, another important change occurred. Changes were made to the Contaminated Sites Regulation under the "Environmental Management Act" (2003) requiring the remediation of marihuana growing operations and other drug production labs to be made at the property owner's expense. This change has also enabled municipalities to prohibit occupancy of an identified growing operations until they receive confirmation from the Ministry of Environment that remediation has been completed. It has also allowed for remediated site used for marihuana production to be recorded on an online registry.

Recently, the Government of British Columbia passed the "Community Safety Act" (2013), which is said will create a new provincial unit to respond to 'threatening and dangerous activities'. This unit will respond to complaints from British Columbians of activities such as growing operations that present risks to public safety, following up by conducting investigations, working with the property owners, and potentially applying for community safety orders. While there is potential for this legislation to help address the problem of marihuana production in British Columbia, time will reveal whether or not it will result in new effective responses.

Civil Forfeiture

Following actions in Ontario, British Columbia passed the "Civil Forfeiture Act" (2005) as an additional deterrent to criminal behaviour. This act allows "the Director of Civil Forfeitures to initiate civil court proceedings against property believed to be the instruments or proceeds of unlawful activity" (BC Ministry of

Justice, 2013a). Information from DataBC, an open access website made available by the Government of British Columbia (2013), indicates that the property against which proceedings are initiated have most often included cash, cell phones, cars and other vehicles, and real estate. As of 2011, the Civil Forfeiture Office (CFO) can proceed through an administrative process against property other than real estate that is valued at $75,000 or less (BC Ministry of Justice, 2013a)..

Given a lower standard of burden for making a case civilly compared to the criminal process, this legislation has been used effectively to forfeit the property and profits from growers used for or obtained through their illegal activities. Even in cases where criminal charges are stayed, the use of Civil Forfeiture proceedings can be used as a measure to reduce some of the rewards of illegal marihuana production. Data from DataBC (Government of British Columbia, 2013) indicates that the Civil Forfeiture Office has been viewed as an effective avenue to deal with drug crimes, including the production of marihuana. Over 57% of all civil forfeiture cases referred to the CFO by police in British Columbia since 2007 have involved either trafficking, possession for the purposes of trafficking, or production. Production offences, the majority of which are likely to be marihuana production, make up nearly 21% of all police referred cases.

Despite the potential for civil forfeiture to be a means to reduce some of the rewards of marihuana production and provide compensation to victims and funding for other crime prevention programs, there are critics of the approach. (Mulgrew, 2013) argued that civil forfeiture has turned into a government money grab that is not targeting the serious organized criminals as was intended, but is instead targeting the "low hanging fruit" of first-time criminals who have little means to dispute the forfeiture in court. While the same may not be true for all crimes targeted by the CFO, marihuana growing operations can be very profitable criminal ventures (Plecas et al., 2012), and therefore, measure to negatively impact on this profitability is necessary, particularly given the fact that fewer of these operations can be considered low-level.

Other External Stakeholder Responses

Public Health and Medical Approach

In response to the perceived lack of success of prohibition policies and law enforcement efforts to reduce the use of marihuana, the size of the industry, and the harm to users, many have called for a more public health approach to the problem of marihuana (Fischer et al., 2011). This approach would focus more on targeted treatment and appropriate messaging to reduce the likelihood of harms to those groups most at risk. Additionally, increasing numbers of British Columbians are viewing marihuana as a legitimate medicine to address some illnesses, and a sizeable portion of the user population as medicinal users. However, despite the merits of a public health approach, too often the focus of the discussion around marihuana and health has been on how to get more people legitimate access to it rather than on preventing the harmful use of the drug.

In 1999, Health Canada began introduced Marihuana Medical Access Program (MMAP), and in 2000, the Marihuana Medical Access Regulations were established. The program and regulations recognized the medical use of marihuana and permitted physicians to prescribe marihuana medicinally to patients who receive licensed authorization to possess specified amounts of the drug. With few legal sources of marihuana, the MMAP also began issuing licences to medicinal marihuana users and designates to permit the cultivation of specified amount of marihuana for medicinal use. While the program began with relatively small numbers, by December of 2012, there were 28,115 licenced medicinal users and 21,468 licenced producers across Canada, with the greatest number of each located in British Columbia (Health Canada, 2013), a considerably disproportionate distribution of these licences given the population and licences provided elsewhere (Garis &

Clare, 2013b). However, these production licences will no longer be valid following changes that will take effect on April 1, 2014.

The constant growth and susceptibility for abuse of the program caused many to view the MMAP as a substantial contributor to the problem of illegal marihuana production in British Columbia and across Canada. Perhaps because the regulations need to account for production times, daily medical use, the shelf life of dried marihuana, and the typically higher quantities needed by medical users, the amounts authorized by Health Canada for production are relatively high. Additionally, the production licences set out the maximum number of plants per licence, although research indicates that the yield, particularly for indoor growing is more dependent on the light source than the number of plants (Bouchard, 2008; Toonen et al., 2006). Although the regulations prohibit the sale of medical marihuana to recreational users and other unauthorized distributors, there is a belief that organized crime groups have taken advantage of lax regulations to obtain medical production licences to protect their illegal growing operations from law enforcement (Royal Canadian Mounted Police, 2010).

There were other concerns about the MMAP and the authorization to produce marihuana for medical purposes. Primarily, although the regulations require licensees to inform their local municipalities if they plan to grow indoors and ensure that their operations meet zoning restrictions, building codes, and other safety regulations, this has not been the case for many licenced growers (Garis & Clare, 2011, 2013b; Jessop & Garis, 2008). Licenced marihuana growing operations operating indoors are therefore presenting many of the same harms to communities as their illicit counterparts. Additionally, despite the phasing out of production licences, there is no current plan to provide municipalities with additional information or tools to effective remediate properties that were formerly being used to produce marihuana under the MMAP (Garis & Clare, 2013b). Furthermore, it remains unclear what, if any, additional issues might accompany the transition to newly authorized commercial producers of medical marihuana. This area will likely continue to require considerable attention from policy makers and researchers to find ways to meet the needs of medical users, while promoting reducing the potential harms of marihuana consumption and protecting British Columbia's communities from the hazards associated with illegal and unsafe authorized growing operations.

BC Hydro's Response

Since growing operations have become predominantly indoor ventures, growers have relied on electrical power to produce their crops. For those who do not resort to using generators, the options appear to be to either accept the expense of high electricity consumption or steal electricity through the use of a bypass. For the average growing operation paying for power, the consumption was found to be around 110,000 kWh of electricity per year, which jumped to over 180,000 kWh per year for those operations that involve electricity theft (Diplock & Plecas, 2011). This represented an enormous cost to both British Columbian rate payers and BC Hydro, the province's Crown Corporation responsible for generating and distributing electric power.

The issues of excessive consumption and electricity theft have made marihuana growing operations a considerable problem for BC Hydro. In their study, Plecas et al. (2005) found that approximately 21% of all founded cases of marihuana production involved the theft of electricity between 1997 and 2003. The prevalence of marihuana growing operations that steal electricity was found to have doubled since that time to over 50% by 2010 (Diplock & Plecas, 2011). Moreover, the size of operations and therefore the amount of electricity being stolen has also increased.

BC Hydro has contributed to the reporting of growing operations, particularly those involving theft of electricity for many years. Data from the study by Plecas et al. (2005) revealed that 3% of the marihuana

growing operations that came to the attention of police were reported by the corporation. This trend saw a relatively large decline from 8% in 1997 to only 2% by 2003. Issues around privacy for sharing information, particularly which of paying customers, likely contributed to inability for a greater number of investigations to benefit from the knowledge of excessive consumption (Garis et al., 2009). However, with the formation of partnerships between BC Hydro and municipalities in combination with the passing of the "Safety Standards Amendment Act" (2006), consumption data supplied by BC Hydro has provided much needed evidence to effectively use municipal bylaws and other innovative approaches.

In addition to sharing consumption data with authorities, in 2011, BC Hydro initiated a program of replacing its former metering system with wireless Smart Metering technology. This technology was viewed by some as having the potential to reduce some of the harms caused by indoor marihuana production by identifying electricity theft and other dangerous consumption earlier (Diplock & Plecas, 2011). While the program has not been operating long enough to adequately assess its merit in this regard, early evaluative data presented by Garis and Clare (Garis & Clare, 2012) showed that residential fires resulting from illegal marihuana growing operations and the use of electrical bypasses and high intensity growing lamps had been reduced when comparing a one-year post implementation period to the immediately preceding one-year pre implementation period. Further research will need to be done to determine if Smart Metering has been able to achieve any reductions in the theft of electricity by growing operations and/or the number of active growing operations in the province.

Responses from the Real Estate Industry

Marihuana growing operations on private property can leave behind some serious potential hazards when their operators are forced to abandon their activities or decide to move on to other sites (Plecas et al., 2012). Given the longevity of this problem, the prevalence of growing operations that have been identified by authorities every year, and the likely very large number that have not, there are thousands of residential properties across the province that have previous been used to house a growing operation. The changes to residential properties and the potential risks associated to criminality that may be linked to the property can negatively affect future occupants. Real estate agents and the organizations that represent them have been aware of these issues for years and have been working toward strategies to reduce the negative impact of growing operations on home buyers in British Columbia.

In 1991, the British Columbia Real Estate Association (BCREA) introduced the Property Disclosure Statement (PDS). It provides a list of questions that ask property sellers to indicate to the potential buyers whether any of a number of potential problems might exist. In 2004, the disclosure of former marijuana growing or other drug production was added to the PDS, allowing buyers to get information about whether or not the existing owner of a property is aware of such activities in the property's past. The illegal use of a property for producing marijuana may be considered to be a material latent defect, which legally must be disclosed. However, no established rules have been legislated or established through court rulings to determine under which circumstances this would apply. While buyers of former drug production properties may have some legal recourse if a seller fails to disclose the history, particularly if a PDS was included in the contract, such a route is not guaranteed to work. There is no onus on owners selling their property to make additional effort to determine if the property has a history of drug production of which they are unaware. In essence, even with these protections in place, it remains a case of "buyer beware".

Garis and Clare (2011) also reported on some of the strategies being employed by municipalities in the province to help provide prospective home buyers with information about whether a property formerly housed a growing operation. Given the bylaws in place in some municipalities, following the discovery of an

indoor growing operation, a notice to prohibit occupancy will be applied to ensure remediation work is done. Typically, afterwards there might be little in place to disclose the history that the property has been remediated (Garis & Clare, 2011). The City of Surrey however, requires the disclosure of that history and its remediation status to any future occupant, with this requirement passing to all future owners into perpetuity. A notice is included with the property tax documentation. Other municipalities remove the record of a property's history as a growing operation after remediation, keeping only a listing of these properties at city hall, or making the history of a property available only upon a freedom of information request (Garis & Clare, 2011).

While there are some strategies in place to protect the public from unknowingly accepting the risks of buying a former growing operation, more is need. Garis and Bond (2010), in their analysis of this issue found that the "Freedom of Information and Protection of Privacy Act" (1996) created barriers to the sharing of important information with potential homebuyers. They suggested a need for further responses such as the crafting of preapproved questions that municipalities can use to provide information to the public, seller's consent to disclosure forms, and even additional questions that may require formal Freedom of Information requests (Garis & Bond, 2010). Additionally, the BCREA (2012, p. 1) and Garis and Clare (2011, pp. 13 - 14) recommended the following three future steps: 1) "Develop a centralised, consistent process for the disclosure of property history information [; 2)] Develop a centralised, consistent process for remediation of buildings used in drug operations [; and 3)] Implement these disclosure and remediation processes through existing BC provincial legislation". If these and/or other additional strategies are put in place in British Columbia, it will be necessary to follow up and assess the impact that they have on public safety and whether or not they will contribute to other strategies designed to eliminate growing operations from residential properties.

Responses Related to Remediation

Given the fact that there are thousands of properties that have previously housed growing operations, it is also important to note that there are currently no provincial standards in place to ensure the quality of remediation when these operations are discovered. While it may be difficult to protect the public from growing operations that have not been discovered, there is a greater opportunity to ensure those that have been discovered are returned to a safe state for people to occupy. As it stands, the responsibility for setting remediation standards has fallen to municipalities, and therefore, the inspection of reported properties and cleaning requirements vary by municipality (Garis, 2010). As the public safety bylaws have placed the onus the owners of properties to have them remediated, many of the decisions made in the process are done with the owner's interests in mind and potentially not necessarily in the interest of public safety. Garis (2010) argued that this has led to inconsistent results all across British Columbia, meaning that a residence that is said to have been "remediated" could be have been done to a very different standard depending on where it is located. In order to have greater confidence in the remediation of former marihuana growing operations, which may in turn create safer communities and greater confidence in the real estate market, further steps need to be taken on this issue.

Focusing on Retailers of Equipment Used for Marihuana Production

Another area that has been recognized as having the potential to substantially limit the continued viability of marihuana production in British Columbia is the regulation of the sale of hydroponic equipment. Examinations of the equipment seized from marihuana growing operations in the Lower Mainland demonstrated that almost all operations use the same types of equipment, such as timers lights, transformers, CO2 generators, and Ozone generators, and in many cases there are common brands used (Garis & Plecas,

2007). Although the over number of specialty hydroponic equipment retailers and the prevalence of their advertising have decreased over the past decade, they are still much more numerous than what exists in nearby Alberta and Washington (Bauman et al., 2006; Garis & Clare, 2013a; Kirkpatrick et al., 2002). It is believed that effective regulation could not only limit access to the necessary equipment for the criminal production of marihuana, and thus reduce the likelihood that criminals would be able to start and maintain operations, but could also decrease the number of electrical and fire hazards associated to growing, whether illegal or authorized (Garis & Clare, 2013a).

Although the need for regulation of equipment retailers that knowingly or unknowingly facilitate marihuana production has been expressed for many years (Bauman et al., 2006; Garis, 2008), there are not yet any regulations in place. Garis and Clare (2013a) have outlined three options that could be implemented in British Columbia to target this issue. The first would involve changes to the "Canada Consumer Product Safety Act" (2010), which could then require retailers to collect and report customer and purchase information and to report any health and safety incidents that occur involving the equipment that they have supplied. The second option would be to implement municipal bylaws to prohibit the sale of specified equipment to customers who fail to show a valid permit for the use of the equipment or its installation. The third option would be to require the retailers and customers to obtain licences to sell and possess the equipment respectively, which could involve background checks. If indeed regulatory strategies are implemented to address the production of marihuana from this potentially effective avenue, further research will need to assess their effectiveness in terms of improving safety and reducing the number of incidents of illicit growing.

Future Challenges

As this report has summarized, there are a number of approaches that have been taken or explored in British Columbia to address the issues of marihuana growing operations. Prior to the mid-2000s, this problem was largely viewed as a law enforcement and criminal justice issue, the spread which partners working in those areas had been hitherto been unable to effectively stem. While marihuana growing operations continue to be a major concern for the communities of British Columbia, additional multifaceted responses by police, the courts, municipalities, the provincial government, and other stakeholders working in concert have seen some notable successes. Continued efforts to develop effective and innovative strategies to reduce both the prevalence of marihuana growing operations and their potential for harm are necessary, and this report has highlighted some of those areas where further efforts and research are needed to address gaps.

Responding to the New Medical Marihuana Regulations

However, while there have been some successes, continuing to gain effective results from these strategies and finding ways to effectively implement additions ones will face some substantial future challenges. The recent changes to the MMAP will likely create some challenges for those hoping to reduce prevalence and harms of marihuana production. Public opinion and political shifts on the issue of the criminalization of marihuana, and by association the related issues such as production, may present additional challenges. Finally, the development of a marihuana growing “cottage industry” in some rural and otherwise economically limited regions of the province will continually present a challenge to these goals.

There is potential for the phasing out of personal and designated production licences formerly under the MMAP to provide law enforcement with additional tools to prevent the production of marihuana by organized criminals who are now believed to be effectively abusing the current system (Royal Canadian Mounted Police, 2010). Such changes will undoubtedly make it simpler to differentiate between authorized and illegal producers, when operations come to the attention of police and other authorities. At the same time however,

with over 11,500 production licences in British Columbia, the process of enforcing these changes and ensuring that residences formerly used for growing are effectively remediated will not be an easy one. A plan for sharing information to municipalities and other authorities to accomplish this has not been outlined by Health Canada (Garis & Clare, 2013b). This is a challenge that will need to be overcome in the near future.

Additionally, despite the efforts to outline regulatory requirements for authorized producers, the process of regulating them, given the strong existing links between this industry and organized crime, will also be a challenge. Given the disproportionate number of medical licensees in British Columbia relative to other Canadian jurisdictions (Health Canada, 2013), it appears that there has been a greater impetus for abuse of the existing system in this province than in any other, which may simply continue under the new Marihuana for Medical Purposes Regulations regime. Just as many of those currently investigated for illegal marihuana production are often "sitters" with little to no criminal history[3], similar associates of organized criminal groups may be put in positions by these groups to gain access to production authorization. Furthermore, for those medical users who had been growing for their own personal use and who do stop, they will likely experience somewhat greater financial strain in acquiring their medications. If illegal suppliers can draw a portion of these former growers toward their product and away from that of legitimate authorized producers, whether through lower prices or the same stigmatization that was applied to the marihuana produced by Health Canada's growers[4], organized criminals may experience increased demand for their illicit marihuana as a result. While these changes represent a positive step toward correcting the deficiencies with the regulation of medical marihuana, further attention will be needed to monitor the problem in light of these changes.

Addressing the Problem in Rural Communities with a Marihuana "Cottage Industry"

While largely undocumented, several communities in British Columbia may be nearly reliant on the cottage industry of marihuana production. Research from the United States has identified similar rural areas in which these dynamics exist (August, 2012). In these communities strategies intended to eliminate growing operations and seriously punish operators will likely face considerable opposition. Research by Decorte (2010b) found that smaller scale producers can be a sizeable portion of the market in some marihuana producing regions, and may achieve public support from consumers who feel they get better quality control and are not contributing to their money to organized criminals. As was found by Gary Potter et al. (1990), police enforcement strategies targeting marihuana production in economically fragile, rural locations have the potential to make production more elusive and to actually build public support for the activity and weaken support for police. Similarly, Decorte (2010a) has argued that repressive policing strategies are more likely to drive small-scale producers out of the market, only to be replaced by large-scale organized criminal producers, from his perspective a greater of two evils. Given the real possibility that such markets may exist in communities in British Columbia, and the recent trends toward increased size, sophistication, and organized criminality across the marihuana production industry in British Columbia, it is important to note the challenges that responding to the existence of this phenomenon in these rural communities could involve.

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[3] In the report by Plecas et al. (2005), nearly half of all suspects associated to marihuana growing operations had no prior criminal convictions. Similar results were found by Plecas and Diplock (2007) and A. E. Malm (2006). The likelihood of having a criminal record was considerably lower for some groups of suspects believed to have been recruited by organized criminals simply to tend to the plants.

[4] Early feedback from medical users of Health Canada's supply of Marihuana was that it was of poor quality (Picard, 2012). This reputation stuck and may have led to pressure to implement the production licencing regime under the MMAP.

New Challenges Associated to the Trend toward Legalization

Recent changes to laws in the states of Washington and Colorado in the United States may end up being catalysts for a trend of legalization of the recreational use of marihuana. As of 2010, Angus Reid reported that 53% of Canadians, including 61% of British Columbians, were in favour of legalization of marihuana for recreational purposes. There are many advocates for changes to the laws to allow for legal marihuana, some of whom are from groups not traditionally associated to the cause such as former politicians and police leaders, academics, lawyers, and physicians (Stop the Violence BC, 2011). These advocates have argued that the legalization of marihuana in Canada would reduce levels of violence stemming from the illicit trade of the drug by organized crime groups, and that continued efforts to use law enforcement and related strategies to curb supply simply cause more incentives for new illegal producers to enter the market (Stop the Violence BC, 2011). To some extent, research by Bouchard (2007b) supported the latter point. Additionally, dissatisfaction with drug policies has often led to arguments that the prohibition approach not only expends government resources on law enforcement and other tactics, but also leaves untapped a predicted glut of potential tax revenue (Caputo & Ostrom, 1994; Gettman, 2007).

Although the Angus Reid report (2010) indicated that 70% of Canadians, including 69% of British Columbians, are in favour of mandatory minimum sentences and high fines for illegal marihuana producers, it is unclear whether further pressure for or even the eventual legalization and normalization of marihuana would change that. Regardless, in a climate of increasing public sentiment towards the legalization and regulation of the marihuana industry, political appetite for responses that target any aspect of this market may only decrease, viewed as another arm of the "war on drug" that opponents are trying to paint as antiquated and contributory to the problem. With the Government of Canada set to authorize private commercial growers to produce medical marihuana and states south of the border exploring similar systems to make recreational marihuana available, steps toward the viewing of marihuana production as normative are potentially well underway. If such a trend does eventually lead to legalization of marihuana in Canada, and thus British Columbia, those concerned about the harms associated to the production of marihuana will need to be prepared for the challenges that will result from such a transition, including efforts on the part of organized criminals to profit in the short term from the confusion and potential for a short term peak in demand[5].

Conclusion

British Columbia's problem with marihuana production has been particularly resilient, proliferating rapidly in the 1990s before becoming one characterized by slightly fewer by larger, more sophisticated, and more organized growing operations. This evolution has created the need for all relevant stakeholders to develop effective partnerships and innovative responses to address the problem. This report has highlighted the main responses from several related areas that have been implemented in British Columbia and identified some areas where more work is needed. The research that is cited throughout this report has been compiled into an associated library that can be used to guide policy makers looking to find solutions to address the problems associated with marihuana production. As efforts to reduce the harms to British Columbians caused by marihuana production will face some considerable challenges in the near future, it remains an important task

[5] According to research by (Williams, 2004), a change in the legal status of marihuana would likely increase the prevalence of use by adult males. Additionally, (Caulkins, 2010) argued that legalization would likely substantially decrease the price of marihuana, which would increase the demand among some portion of the population, namely youth (van Ours & Williams, 2007; Williams, 2004). While research on states that have recently implemented systems of marihuana is necessary to determine whether consumption would increase as was predicted by Caulkins, Kilmer, MacCoun, Pacula, and Reuter (2012).

for those working toward increased public safety to continue to seek innovative responses and to document and evaluate the outcomes of their efforts.

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