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The supply of hashish to Europe

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Introduction: setting the scene

Hashish production in the world is a phenomenon that is far from being satisfactorily studied and understood and it must be stressed from the outset that further research, and especially field-based research in production countries, is needed in order to properly investigate the supply of hashish to Europe. Most of the existing material is actually made of statistical data of unequal value and understanding how the various available estimates are produced, and what their limits are, is a prerequisite to any tentative assessment of production and trafficking trends.

As stated by Ted Legget in his review of the world cannabis situation, “Cannabis is the world’s most widely cultivated and consumed illicit drug, but there remain major gaps in our understanding of global cannabis markets” (Legget, 2006: 1). Pretty much everything about the cannabis plant leads to controversial debates, including its taxonomic classification (see below and note 4). Estimates of what is mostly an illegal agricultural production (except in a few states where the fiber-producing plant, but not the drug-producing plant, is permitted) are of course also difficult and controversial. Satellite detection of outdoor cannabis crops prove more difficult, technically², than that of opium poppies, and such imagery is rarely resorted to, notably because of its cost. Also, indoor cannabis crops have fast developed during the past decades, whether in the United States, Canada, or Western Europe, and the scale of such crops proves very difficult to assess (estimates and eradication reports actually mention numbers of plants and not cultivated areas). Ground surveys can also be too expensive (or time-consuming, dangerous, etc.) to carry out as cannabis crops can be grown virtually everywhere in the world and are often much more dispersed than coca or opium poppy crops in a given country. In fact, “only a few countries have scientifically valid estimates based on remote sensing technology or based on ground surveys. Most countries provide estimates based on some extrapolations from their cannabis eradication activities” (Legget, Pietschmann, 2008: 191).

Of course, yields also need to be estimated, whether herbal cannabis or hashish (the psychoactive drug made by compressing the resin glands, or trichomes, of the female cannabis plant) is concerned. Yet, “given the variability of the plant and the range of

² Although the spectral signature of cannabis can look separable, the signal classification often conflicts with other land covers (Walthall, Daughtry, 2003). In its 2005 cannabis survey in Morocco, the UNODC explains that the accuracy of their remote sensing approach is “acceptable” and that more precise results proved difficult to obtain since the spectral signature of rain-fed cannabis did not differ much from that of bare soil (UNODC, 2005: 36)

cultivation techniques employed, coming up with precise figures such as yield to plot area ratios can be difficult” (Legget, 2006: 22). For example, the United Nations Office on Drugs and Crime (UNODC) makes it clear, in its 2012 Afghan cannabis survey, that “the yield survey is statistically not representative and based on observations rather than measurements” and that they are “exploring methods for more systematically assessing cannabis yields” (UNODC, 2013b: 15). Also, as explained by the UNODC, the comparability of cannabis yield estimates from different countries can be problematic for it can be affected by methodological differences, such as when Afghan yield estimates are based on field observations but Moroccan yield estimates are produced on the basis of off-farm measurement³ (UNODC, 2010: 23).

Combining sources and disciplinary approaches, including history, geography, geopolitics, economy, botany, agronomy, etc., is imperative for whoever wants to better understand the production of any illegal drug crop. Field-based research, however limited in time, scope, and means, must of course be resorted to in order to draw a better picture of the complex realities and dynamics that drive the cultivation of illegal drug crops. This paper is based upon such an approach but tends to raise more questions than it provides answers.

Global historical background

Foreign sources of hashish, or cannabis resin, have historically been responsible for Europe’s entire consumption. Whether produced by the hand-rubbing method or by the sieving method, hashish, like cannabis herb, used to be ingested with foods or drinks before the act of smoking was first noticed by Europeans during their discovery of the New World (along with that of tobacco), except maybe in Africa, where pipes probably existed since the 11th century (Philips, 1983; Lewin, 1998 [1924]: 239; Courtwright, 2001: 14-19; Booth, 2003: 42-43; Gilman, Zhou Xun, 2004; Clarke, Merlin, 2013: 126-128, 238; Duvall, 2014;). As Robert C. Clarke, the author of the reference book on hashish, explains, “smoking quickly popularized hashish use across Eurasia, from Turkey to Nepal, during the seventeenth and eighteenth and centuries”. Yet it was only during the late nineteenth and early twentieth centuries that “large scale production in Central Asia shifted from Russian Turkestan into Chinese Turkestan, eventually into Kashmir, and finally into Afghanistan”. Greece, Syria, Nepal, Lebanon and Turkey also became major producers and exporters of hashish and, in the

³ Estimates of the Moroccan hashish yields were produced by the UNODC on the basis of brut cannabis yields. Hashish yields were not directly measured but extrapolated from a 2 % ratio (2 kg of hashish produced from 100 kg of dried brut cannabis). Therefore, cannabis yields were measured but hashish yields were calculated (UNODC, 2005: 18-19).

late 1960s, “Morocco was the last of the major hashish-producing nations to begin production in quantities sufficient for export” (Clarke, 1998: 60).

While hashish consumption was long known in Europe (hashish consumption was witnessed by Marco Polo in 1271-1295 and decried in Egypt by Napoleon in 1798) (Lewin, 1998 [1924]: 90), it is only during the late 1960s and early 1970s that it really developed with Afghani and Pakistani sieved hashish produced from *Cannabis indica* varieties⁴ and exported along what Clarke calls the “Hippie Hashish Trail” (Clarke, 1998: 97). Lebanon was the other main European source of hashish during the 1970s and 1980s as its high quality *sativa*-based sieved resin (the yellow or blonde hashish and the scarcer and highly prized so-called Red Lebanese) was also discovered by the hippies on their way to South Asia (Clarke, 1998: 156, 153; Booth, 2003: 237). In fact, it is highly likely that the sieving technique was imported into Morocco from Lebanon (where it might have been introduced from Greece), along with the modern “kif” cannabis variety cultivated in Morocco to produce hashish (Monfreid, 1933: 50; Clarke, 1998: 153, 224; Bellakhdar, 2008: 230; Chouvy & Afsahi, 2014: 418). Yet the 1975-1991 war in Lebanon (during which hashish production developed on a large scale but was progressively overtaken by opium production in the late 1980s), then the early 1990s’ forced eradication programmes in the Bekaa Valley, and the 1979-1989 war in Afghanistan, seriously disrupted commercial hashish production⁵. Such a large market disruption made it possible for large-scale commercial hashish production to increase in Morocco in the 1980s (after it started in the 1970s) (Clarke, 1998: 175). In the early 2000s, cannabis crops and

⁴ In this paper *Cannabis sativa* and *Cannabis indica* refer to the various psychotropic varieties of narrow-leaf hemp and broad-leaf hemp, respectively. However, it should be stressed that, as reminded by botanists Clarke and Merlin (2013: 17), “a controversy surrounds the taxonomy of *Cannabis*, which has been classified either as a monotypic genus (i.e., containing only a single species), *Cannabis sativa*, or a polytypic genus (i.e., including up to three species), *Cannabis sativa*, *Cannabis indica*, and possibly *Cannabis ruderalis*”. While Clarke and Merlin support the latter taxonomy, the biogeographer Duvall (2014) explains that the “folk species” *sativa* (herbal cannabis cultivars) and *indica* (the hashish cultivar) differ chemically and genetically from the scientific species *sativa* (not psychoactive) and *indica* (psychoactive) (no *ruderalis* species according to Duvall). It should also be noted that, following Linnaeus’ classification, *Cannabis* was included as a single species in the United Nations drug conventions since taxonomists long lacked access to genetic analysis (genetic, chemotaxonomic, and molecular taxonomic perspectives date from the early 2000s) and only focused on phenotypic diversity or variation of observable traits (Clarke, Merlin, 2013: 314, 324; Duvall, 2014; TNI, 2014).

⁵ According to David Macdonald, the Soviet invasion of Afghanistan meant that areas under cannabis cultivation shifted each year to avoid the ongoing war (Macdonald, 2007: 193). Howard Marks, the published English drug trafficker, mentioned how, “the dope supplies in [...] Afghanistan had almost dried up when the Russians took their tanks to Kabul in 1980” and how the millions of refugees that ended up in Pakistan’s North West Frontier Province helped develop the production of what became known in the West as “border hash” (Marks, 1998: 249-250). According to Jonathan Marshall, Lebanon’s shift from hashish production to heroin production is due to the political change that took place in Egypt in 1971 (Sadat’s assassination made hashish trafficking to Egypt, the main importer of Lebanese hashish, more difficult) as well as the Lebanese civil war that “disrupted land and sea commerce and old political arrangements that permitted drugs to pass with little impediment”. Marshall also explains how the “fragmentation of Lebanon made bulky hashish shipments much more risky and favored the smuggling of high-value, easily disguised parcels of morphine and heroin” (Marshall, 2012: 94-95).

hashish production in Morocco were estimated to have reached an all-time high (UNODC, 2003).

In the late 2000s and early 2010s, hashish production allegedly declined in Morocco and resumed in both Afghanistan (as reported by the UNODC) and Lebanon (as described in numerous press reports), raising questions at the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA) and the UNODC about how such changes might affect the supply of hashish to Europe (EMCDDA, 2012; UNODC, 2013a). However, the data on production, which suggested that by 2011 Afghanistan had overtaken Morocco as the world's leading producer of cannabis resin (UNODC, 2013b), did not seem to be reflected in the information available on supply within Europe, where Moroccan hashish remained the most consumed resin (EMCDDA, 2012; UNODC, 2013a). For example, data on the sources of imported cannabis products provided annually to the EMCDDA by the 30 national focal points of the Reitox network for the years 2008, 2009 and 2010 showed that Morocco was the most frequently mentioned source of cannabis resin imported in the European Union (60 mentions), followed by Afghanistan and Lebanon (both 8 mentions, although Southwest and South Asia's 25 mentions surpassed the Middle East's 18 mentions) (EMCDDA, 2012: 46-48). As mentioned in the introduction, estimates of production have many potential weaknesses and obtaining data on origin of supplies encountered in Europe is equally challenging. The available data will therefore be scrutinized more closely in the sections below in order to shed further light on what is happening with respect to the production of cannabis resin and its impact on the supply to Europe.

Moroccan Production

Decrease in cultivation and production: estimates

In less than a decade, Morocco reportedly saw cannabis crops decrease by 65 %, from an all-time high of 134,000 hectares in 2003 (UNODC, 2003) to 47,500 hectares in 2011 and 47,196 hectares in 2013 (UNODC, 2013a; UNODC, 2015)⁶. On this basis, Morocco, once considered the world's foremost hashish producer, would now be second to Afghanistan with its estimated production reportedly declining by 75 % between 2003 and 2011, from 3,080 tons in 2003 to 760 tons in 2011 (UNODC, 2003; UNODC, 2013a). Yet, and regardless of

⁶ Cultivation estimates are given after eradication (8,000 hectares in 2011). The 2003 and 2005 estimates are based on joint surveys by Morocco and the UNODC while the 2012 estimate is based on data gathered unilaterally by the Moroccan authorities, then communicated to the UNODC. While the methodology used in the 2003 and 2005 surveys are detailed in the UNODC reports, no information is available as how the 2012 and 2013 data were produced.

how reliable the Afghan estimates themselves are⁷, the recent Moroccan data on hashish production in Morocco have been openly questioned by the EMCDDA and, unofficially, by various European counter-narcotics police services, but not by the UNODC (EMCDDA, 2012; UNODC, 2013a). Indeed, the EMCDDA explained that “adding the quantities seized in Algeria to those intercepted in Spain and Morocco in 2009 would leave no or only very little cannabis resin of Moroccan origin to supply the consumer markets of the 22 European countries mentioning Morocco or Spain as a source of this drug” (EMCDDA, 2012: 58).

Discrepancies and interrogations

Various indications that the Moroccan hashish industry was undergoing major changes have long existed. First, and as previously mentioned, the EMCDDA pointed to “anomalies” existing between “the dramatic fall in estimated cannabis resin production in Morocco” and seizure data (EMCDDA, 2012: 58). Second, neither the Moroccan authorities nor the UNODC mention that although seizures did decrease, the hashish seized in Europe also changed both in shapes and potency. During the past few years, European drug law enforcement agencies noticed that they were no longer seizing the 250-gramme *savonnettes* (soap bars) that made up most if not all of their intercepts in the 1980s and 1990s. Most such *savonnettes* disappeared (except perhaps in the United Kingdom, something that is not yet explained) from European seizures and were replaced by 200-gramme melon-shaped balls, 100-gramme tablets, and 10-gramme olive-shaped pellets (personal communications by European police services). Third, and most importantly, in the past few years hashish seizures in Europe have shown increasing THC (tetrahydrocannabinol) content. While the traditional *savonnettes* showed an average THC content of 8 %, the Moroccan hashish seized in France in 2012 averaged a 16 % THC content according to data from the French Scientific Police (personal communications by the French *Institut national de police scientifique* (INPS); EMCDDA statistical bulletins: <http://www.emcdda.europa.eu/data/2014#displayTable:PPP-5-1> and previous bulletins).

It must be stressed, however, that THC contents are to be considered with caution for it is unclear if a resin showing a 16 % THC content is or is not an end product with half the adulterant amount of a resin showing an 8 % THC content. Indeed, Moroccan hashish is very often adulterated with a range of inert or active substances. Yet there is very little data on adulterants in cannabis resin and the existing data is actually very controversial. Users and

⁷ For example, prior to the 2012 survey, estimates of the Afghan cannabis survey used a visual estimate for the upper figure and a satellite estimate for the lower estimate in the range.

cannabis watchers often mention the presence, sometimes in large quantities, of soil, henna, paraffin wax, bee wax, rosin, glue, flour, liquorice, milk powder, coffee, used motor oil, animal excrement, or even medical drugs, in cannabis resin. However, the presence of such adulterants in cannabis resin could not be confirmed by various studies conducted in France, whether by *Médecins du monde*, the French NGO, or by the *Observatoire français des drogues et des toxicomanies*, the French Reitox focal point (OFDT, 2007: 85). Still, the Cannabis Resin Impurities Survey Project (CRISP), a British research project combining social anthropology and chemical analysis, has found that samples of Moroccan cannabis resin⁸ seized in the United Kingdom between 1999 and 2001 often showed very high levels of impurities, sometimes up to 80 % of the final product (unpublished CRISP data and personal communication by Neil Armstrong, July 2015).

In any case, cannabis varieties with high THC contents can be used not only to produce highly potent and high quality resins (resin quality not being limited to THC content but also determined by smell, taste, effect, and “purity”) but also highly adulterated resins with consequently low THC contents. Also, and most importantly, it is difficult, if not impossible, to extrapolate the production of hashish on the basis of seizures without knowing how much adulterants a final product contains. It is obviously also very difficult to assess the efficiency of counter-trafficking measures without reliable data on either the production of pure resins and the sale (wholesale and retail) of adulterated resins. The same problem of course exists with heroin and cocaine related estimates (UNODC, 2012b: 36-37).

New evidence on production trends

Field work conducted in Morocco in 2013 confirmed the fact that the area under cannabis cultivation has decreased since 2003 and also again since 2005, that is, since the last UNODC survey in the country, although it was impossible to verify the extent of such a decline as official Moroccan reports or explanations of survey methodology – if proper surveys actually took place – were not available (Chouvy & Afsahi, 2014). Most importantly,

⁸ So-called soap bar (in the UK): low-grade export quality “black” resin, most likely of Moroccan origin (the better grade non-black Moroccan resin is referred to as “polm” or “pollen” in the UK), named after 250-gramme *savonnettes*. One hundred per cent of the soap bar consumers interviewed by anthropologist Neil Armstrong in thirteen cities in the United Kingdom in the early 2000s declared that soap bar was very low quality resin, 89 % said it was impure and contaminated in one way or another, 29 % reported that it contained visible pieces of plastic (something that could easily and often be noticed in France throughout the 1980s and 1990s), 20 % that it was contaminated with diesel. Only three samples were chemically analyzed to find adulterants (a technically difficult, destructive, time-consuming and expensive process that prevented a large scale investigation): one contained liquorice, another included diesel, and another was 80 % soil (personal communication, July 2015).

the same field work revealed that the *kif* landrace⁹ is being largely replaced by cannabis hybrids of various origins and pedigrees displaying radically different physical aspects and allowing for much higher resin yields and THC contents. Indeed, according to various Moroccan cultivators, the new hybrids cultivated in the Rif yield three to five times more hashish than *kif* (Chouvy & Afsahi, 2014). And, logically, what is basically a new Moroccan hashish is also more potent, which could explain why the THC contents of the hashish seized in France and in most of Europe have increased along the past decade (see EMCDDA statistical bulletins). In fact, it is probable that the ongoing and massive switch to hybrid varieties is the main reason why international hashish seizures seem to invalidate the official hashish production estimates in Morocco: a two-third decline of cannabis crops since 2003 is very likely to have been offset by the yield increase allowed by the cultivation of the new hybrids on what seems to be the majority of the area cultivated with cannabis (Chouvy & Afsahi, 2014). Even if no precise estimate is possible at this stage, it is clear that hashish production can no longer be estimated on the basis of former *kif*-based yields.

The switch to hybrids and the production of a new and more potent hashish can partly be explained by the fact that the Moroccan *kif*-based hashish industry has long suffered from producing large quantities of low quality hashish with a bad reputation among European consumers. This low potency hashish cut with adulterants ended up suffering from competition from commercial European indoor cannabis crops; Moroccan producers complained in 2013 of having increasing difficulties selling their resin, something that seems to be echoed by dealers in France who reported selling more high-end herbal cannabis and less Moroccan resin (personal communication from cannabis expert who wishes to remain anonymous, June 2015). What is more, European hashish aficionados can now produce their own high quality hashish utilising expert extraction techniques or so-called local extractions such as water-based, ice-based or gas-based extraction devices (already used in Afghanistan in the 1970s), as well as Pollinators¹⁰, which can easily be purchased in Europe. Hashish oil, or wax, may also become increasingly popular in Europe, as has been seen in the United

⁹ A landrace is an old cultivar that was geographically isolated from others and has developed largely by natural processes, by adaptation to the natural and cultural environment in which it grows. *kif* is the name given to the cannabis plant in Morocco.

¹⁰ Pollinators were invented in 1993 in the Netherlands by Mila Jansen and are a fast and very effective way of extracting resin without any leaf material, dirt or other impurities. The Pollinator was the first machine ever designed to produce hashish. It was followed in 1998 by the Ice-O-Lator in which an even purer resin is extracted with both water and ice.

States, where so-called butane hash oil (BHO) production¹¹ has led to an increase in home lab explosions (numerous press reports).

Interviews with three cannabis watchers¹² in France and Spain also raised the possibility of some so-called Moroccan hashish not being produced in Morocco but in Spain, for example. So-called Moroccan hashish could well be produced in greenhouses in southern Spain, a country that has recently become a major producer and exporter of hybrid cannabis seeds (including to Morocco). High-end hashish could actually be produced anywhere in Europe with modern resin extraction techniques and be marketed as Moroccan hashish. In fact, according to at least one cannabis expert, the current highest quality of highly potent Moroccan hashish could not be produced by the traditional thrashing and sieving method but only by a modern extraction technique of the Pollinator or Ice-O-Lator type (interview with cannabis expert wishing to remain anonymous). The question of what is and what is not Moroccan hashish has therefore become increasingly complex if we consider that the *kif* variety that has been used to produce hashish for about four decades was most likely a Lebanese variety, that the resin extraction process was also most likely Lebanese, that foreign hybrids are now replacing the *kif* variety, that extraction techniques are evolving, and that hybrid cultivation and resin extraction can take place outside of Morocco. Would a resin produced in Spain (or in France or the Netherlands) from the *kif* variety deserve to be called Moroccan hashish? What about a resin produced from modern hybrids and extracted with a Pollinator in Morocco? What is clear is that Moroccan resin has recently moved from the decades-old *kif*-based hashish and is becoming less of a local and more of an internationalized product, because of both new cultivation patterns and, potentially, new production techniques.

Afghan and Lebanese production trends

There are other potential sources of hashish consumed in Europe since hashish production resumed and developed in both Afghanistan and Lebanon during the 2000s and 2010s. Yet, according to police sources and to seasoned cannabis watchers (personal interviews under the condition of anonymity), these two production surges do not appear to have led to a renewed availability of Afghan and Lebanese resins in Europe (not even in the

¹¹ This may be exacerbated by the fact that as it is illegal to manufacture this product but legal to sell it under California's medical marijuana law.

¹² As stressed by Chris Duvall, there are few formally trained *Cannabis* experts in the world and most experts are actually informally trained individuals such as “marijuana aficionados, hemp activists or anti-drug crusaders” (Duvall, 2014).

Netherlands' cannabis coffee shops), where Moroccan hashish seems to be the type of resin supplied for years now.

In post-Taliban Afghanistan, counter-narcotics programmes and actions have focused solely on opium poppy cultivation (UNODC, 2012a: 8), letting hashish production resume in the north and in the south of country, where the Russian botanist Nikolai Vavilov (1887-1943) reported that *Cannabis indica* (wild expanses along the Kunar Valley, in Afghanistan's northeast) and *Cannabis sativa* (cultivated for hashish production near Herat and near Faisabad in Badakhshan) already grew in the 1920s (Macdonald, 2007: 191). The UNODC first reported on hashish production in Afghanistan in 2005 although the phenomenon had most likely never stopped, not even under the Taliban's rule and their ban on hashish production, commerce and consumption (UNODC, 2005: 8; Macdonald, 2007: 193). Press and official reports from 2002 mention that Afghan warriors fighting the Taliban that same year in Khost were "strung out on hashish" and that "money spent on drugs like hashish was a source of household debt" (Macdonald, 2007: 199, 200). The prevalence of hashish consumption at that time is confirmed by a 2001 study in four districts in rural eastern Afghanistan that showed that "nearly 50 per cent of households had a hashish user" and that "15-25 per cent of males used hashish regularly" (Macdonald, 2007: 201).

The first estimates of cannabis crops and hashish production in Afghanistan were carried out in 2011 by the UNODC that reported on 12,000 hectares of mono-cropped commercial cannabis crops and on a potential production of 1,300 tons of hashish (UNODC, 2012a: 7). Interestingly, Afghanistan's hashish yields are reportedly much higher than what is observed in Morocco, which has led the UNODC to estimate that Afghanistan has become the world's largest hashish producer (an estimated average yield of 112 kg/ha in Afghanistan in 2011 produced a potential 1,300 tons of resin). Oddly, the UNODC never offered estimates of hashish yields in Morocco but a tentative figure of 43 kg/ha can be extrapolated from the 3,080 tons of resins that were reportedly produced on 134,000 hectares of cannabis crops in 2003 or 62 kg/ha according to the 2011 estimates (UNODC, 2003; UNODC, 2013a). The UNODC ranked Afghanistan as the world's largest hashish producer after cannabis crops were reportedly divided by three between 2003 and 2011 in Morocco and, most importantly, on the assumption that the Moroccan resin was still entirely produced from the *kif* variety, not by the new hybrid high yield varieties (Chouvy, Afsahi, 2014). It remains that the yield differences between the Afghan *indica* varieties and the *kif* variety, a *sativa*, can tentatively be

explained by the much larger size of the *indica* plants¹³ and by the fact that cannabis crops are mostly cultivated on irrigated land in Afghanistan¹⁴. Of course, whether Afghanistan has become the world's largest hashish producer or not depends on how much is really produced in Morocco. But it also depends on the level of Lebanon's resumed hashish production and on the unknown amounts manufactured, for example, in India, Nepal, and Bhutan, on which very little information is available.

Cannabis cultivation developed most likely in Lebanon's Bekaa Valley from the early twentieth century on¹⁵, despite the fact that it was first prohibited in 1926 and despite the state's annual forced eradication campaigns that took place in and after the 1990s (Booth, 2003: 125; Marshall, 2012: 17; Servel, Zurayk, 2014: 5). Cultivation is said to have increased after 2000 (following the death of Syrian president Hafez al-Assad whose troops used to eradicate the crops), especially west of Baalbeck, and after 2011, when the Syrian conflict threatened to spill across Lebanon's borders (Servel, Zurayk, 2014: 5). The extent of the cannabis crops in the Bekaa Valley is unknown, as neither the Lebanese authorities nor the UNODC conduct cannabis surveys, but rough estimates ranged from 35,000 to 50,000 hectares in 2014 (according to the head of Lebanon's drug enforcement unit and to cannabis growers themselves, respectively), up from 6,500 hectares in 2007 (according to the Lebanese police) (*Financial Times*, "Lebanese cannabis growers thank Syrian war for flourishing trade", 16 May 2014; UNODC, 2008: 100). The Bekaa Valley is located close to Lebanon's border with Syria and the Lebanese authorities have found it increasingly difficult to suppress cannabis crops there and to control an international border that has now become prone to incursions by the Islamic State in Iraq and Syria (ISIS) and the al-Qaeda-linked al-Nusra Front who are threatening Lebanon.

The Lebanese authorities have refrained from targeting cannabis crops since 2012 as most of the Bekaa's hashish farmers are Shia Muslims and experienced fighters formerly

¹³ "The comparability of the cannabis yield results from Morocco and Afghanistan is affected by methodological differences (field observations in Afghanistan vs. controlled off-farm measurement in Morocco). However, different processing and cultivation techniques, plant varieties and climatic conditions can explain part of the different yield results obtained in Afghanistan and Morocco which suggests that the two countries actually produce different cannabis products. The second and third *garda* produced in Afghanistan for example may be a product with very different properties of the cannabis powder produced in Morocco. Further investigations are needed to better identify what are the factors that can explain the large differences between the two countries" (UNODC, 2010: 23).

¹⁴ Communication on irrigation (5 to 12 times between sowing and harvest) of cannabis fields in Afghanistan by farmers in Balkh by way of David Mansfield (June 2015).

¹⁵ Sieved hashish production was introduced in Greece around 1880, before being banned (as well as in Turkey) in 1890. But it kept being produced to be exported, among other destinations, to Egypt, one of the world's largest hashish consumer markets, well into the 1920s (Monfreid, 1933; Booth, 2003: 120; TNI, 2014: 5).

enrolled with Hezbollah or Amal. The heavily armed hashish farmers now actually form the strong arm of the Lebanese state against both ISIS and al-Nusra, two groups made up of Sunni extremists that have already targeted cannabis crops (deemed un-Islamic) in Syria. In any case, the Lebanese state cannot afford to divert part of its police and military from securing the border with Syria to eradicating cannabis fields in the Bekaa and further alienating the local hashish farmers (*Time*, “Lebanon’s Hash Farmers Join the Fight Against ISIS”, 10 February 2015; Serval, Zurayk, 2014: 2). In the meantime there are press reports of the Bekaa’s hashish farmers selling resin to both regular Syrian soldiers and ISIS fighters, while ISIS is suspected of trading in hashish to fund its war (*The Daily Beast*, 21 April 2015, “This Is Where ISI Gets its Weed”). The war in Syria is said to have blocked trafficking routes towards Jordan and Turkey, unless hashish is sold directly to militants across the border. Lebanese hashish is now reportedly suffering from competition from Syrian hashish controlled by ISIS (ibid.). Nevertheless, while very little Lebanese hashish has been exported to Europe since the beginning of the civil war, it has reportedly remained the product of choice in Syria of course, but also in Egypt, the Gulf States, Saudi Arabia, and even Israel (ibid.).

General overview and implications

Although the Reitox network mentions Afghanistan and Lebanon as sources of cannabis resin consumed in Europe (EMCDDA, 2012: 46-48), cannabis watchers and consumers (interviews on condition of anonymity, June 2015) report that it is very difficult to find anything other than very small quantities of very low quality Afghan hashish in Europe. Lebanese hashish, whether red or blonde, is reportedly altogether absent from the European market. The fact that the sources of the cannabis resins seized in Europe seem to be determined not by scientific analyses but by the testimony of offenders during their arrest is problematic since this methodology is clearly unreliable. Also, as indicated by the UNODC, “source countries might not always mean the country where it [cannabis resin] was produced and might also indicate the latest known transit country”: this is obviously something that further affects the quality of already unreliable data (UNODC, 2011: 190).

Yet, despite the paucity of data on both hashish production in Afghanistan, in Lebanon and in Morocco, and on the primary sources of the hashish consumed with the European Union, it appears that Moroccan hashish production has been underreported in the UNODC World Drug Reports. Also, it seems that mentions of resins sourced in Afghanistan and Lebanon are not corroborated by the availability of these products within the European Union.

What is clear is that Moroccan hashish is still widely available in Europe and that its potency has increased a great deal during the past decade or so, probably largely due to the ongoing switch from *kif* to hybrids. While cultivation of cannabis hybrids has been witnessed in India (notably by seed breeders who recognized their own hybrids in open fields: <http://www.strainhunters.com/>), no such reports are available for Afghanistan or Lebanon (personal communications on Afghanistan and Lebanon by, respectively, David Mansfield and Rami Zurayk, June 2015), which does not mean of course that hybrids are absent from these two countries.

In the end, the most pertinent question might not be where the hashish consumed in Europe comes from but if and when the European market will develop an import substitution scheme by way of local extractions, as suggested by the success of BHO production in the United States. The ongoing development of European indoor cannabis crops and of herbal cannabis consumption makes the European production of high quality cannabis resin and oil a clear possibility. Reports from Colorado following the legalization of cannabis and the establishment of a regulated market describe how “most of what is in today’s shops bears little resemblance to the traditional hand-collected, mechanically-separated hash that has been produced” for ages throughout the world (*The Cannabist*, “Concentrates 101: What’s on the market, from kief and CO2 oil to BHO”, *Denver Post*, 19 June 2015). European cannabis crops trends and new or modernized resin or oil extraction techniques (solvent-based extraction techniques involving butane, water, ice, or CO2) may well eventually turn Europe into a self-sufficient producer of high-end hashish and oil (THC contents in modern BHO can test as high as 75 %) (ibid.). Europe’s future consuming market may well be one of locally produced organic, adulterant-free, highly potent herbal cannabis, resins extractions and other concentrates.

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