



Moroccan hashish as an example of a cannabis terroir product

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Abstract This article aims at clarifying the concepts of terroir and landrace in the context of cannabis cultivation and hashish production. Taking the Rif region of Morocco as a case study, it shows in particular how and why both terroir and landrace come from the territory they belong to as much as they characterize it. This article raises the question of the existence, future, and development of a cannabis terroir, based on precise and operational definitions of the concepts of terroir and landrace, considered locally in historical, geographical, and cultural terms. Raising the question of a cannabis terroir in Morocco implies considering the Moroccan history of cannabis and its end products, and, as a consequence, the related issues of tradition, autochthony (and allochthony), authenticity, and finally legitimacy (and even legality): all concepts required to address the controversial and even polemical issue of cannabis production in the Rif region. This article concludes that the existence and conservation of a hashish terroir can benefit the Rif region in multiple ways: by improving the image and reputation of Moroccan hashish, by increasing its market value, and by benefiting the local, regional, and national economy. Yet, identifying a cannabis terroir also implies to acknowledge its historical, geographical, cultural, and environmental

components in order to protect them. Therefore, identifying and promoting a terroir can prove beneficial economically, environmentally, and culturally as it implies conservation policies and actions that can benefit the balance and stability of a given region, in this case the Rif region of Morocco.

Keywords Morocco · Rif · Cannabis · Hashish · Terroir · Landrace

Introduction

In the Rif region of Morocco,¹ hashish² production has all but supplanted that of the older smoking *kif*, the mixture of chopped cannabis flowering tops and

¹ The Rif is the northern region of Morocco that stretches for about 350 km between the Atlantic Ocean in the west and Algeria in the east, and for 80 to 120 km between the Mediterranean Sea in the north and the plains leading to the Middle Atlas in the south.

² In the modern sense, hashish is a psychoactive product made (by compression) from the resin obtained by sieving (in Morocco, Lebanon and Afghanistan) the (mainly) capitate glandular trichomes that cover the inflorescences of female cannabis plants. This resin contains, among other cannabinoids, tetrahydrocannabinol (THC), an active ingredient isolated in 1964 that is responsible for the psychoactive effects most appreciated and sought after by cannabis users.

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black tobacco named (by metonymy) after the *kif* plant (Afsahi, 2017; Chouvy, 2008). Hashish production in the Rif began slowly in the 1960s and 1970s, increasing in volume and expanding geographically in the 1980s and 1990s, before repression and a quality crisis reduced cultivated areas in the 2000s. Since then, the introduction of modern cannabis hybrids helped, at least temporarily, revitalise a struggling economy (Clarke, 1998; Chouvy, 2018; Chouvy, Macfarlane, 2018). The massive cultivation of these highly water-demanding hybrids has since further jeopardised the ecological balance of a region that is fragile in various respects. In that context, the question of the existence of a cannabis/hashish terroir in the Rif is more important than ever, as the conservation and even restoration of an agricultural production adapted to its physical and biological environment is essential to maintain the balance and stability of the region (Chouvy, 2020).

The history and mechanisms of the development of cannabis cultivation in the Rif have been addressed in the author's previous publications, between 2008 and 2020 (Chouvy, 2008, 2018, 2019a, 2020). In particular, the latest local developments, relating to the introduction of new cultigens ("strains" in the cannabis underground industry)³ and the threats they pose to the cannabis landrace and to the originality and typicality of its main end product, hashish, have been detailed between 2014 and 2020 (Chouvy, Afsahi, 2014; Chouvy, Macfarlane, 2018; Chouvy, 2020). Since this article is a continuation of previous research, it does not address these issues in detail hereafter.

For instance, this article does not detail the reasons, discussed recently elsewhere (Chouvy,

Macfarlane, 2018; Chouvy, 2020), that explain why the *kif* landrace and the Rif hashish terroir are under threat and deserve protection. The objective here is to clarify the key concepts of terroir and landrace by applying them to the specificity of cannabis cultivation and hashish production in the Rif, showing in particular how and why both terroir and landrace derive from a territory they also very much shape.

This work builds up on past personal research and notably on first-hand data collected during field trips carried out regularly between 2004 and 2022 (see bibliography), but also to a large extent on the recourse to a vast and varied literature about the Rif, terroir, landraces, cannabis, and various concepts necessary to the following demonstration.

The text offers precise and operational definitions of the concepts of terroir and landrace, considered locally between "tradition" and "modernity". It questions the nature and limits of the cannabis terroir(s) in the Rif based on various criteria (historical, geographical, anthropological, agronomic, etymological, and linguistic) according to a resolutely multidisciplinary approach. Addressing the issue of the cannabis terroir in Morocco is very complex. Not only because it implies considering the Moroccan history of cannabis and its end products, but also, as a consequence, because it raises questions about tradition, autochthony (and allochthony), authenticity, and finally legitimacy (and even legality): topics without which it is difficult to address the controversial and even polemical issue of cannabis production in the Rif region.

Before questioning the existence of a cannabis terroir in the Rif, the text offers a detailed definition of terroir that avoids the pitfall of anhistorical and therefore traditionalist conceptions. After defining the terroir as a complex ecological and cultural reality, the text introduces the related concept of landrace. It shows that landraces and terroirs have major defining characteristics in common, notably that both result from interactions between physical environmental factors and human factors (Chouvy, 2022).

The text then explains why the Moroccan cannabis cultigen is a landrace, why the typicality of the Moroccan hashish produced from this cultigen is a terroir product, and why there is indeed a hashish terroir in the Rif.

Since there is no such thing as terroir without territory, the text goes on to show, on the basis of

³ In this text, cultigen and strain refer to the same thing. For the sake of clarity, let us remember that variety refers to a taxonomic rank while cultivar is a registered (by the International Code of Nomenclature for Cultivated Plants: ICNCP) cultivated variety defined by a stable phenotype. As for strain (widely mentioned in the cannabis industry), it is a term used in microbiology that is without any official meaning in botany although it is often used to refer to the group of offspring from a modified plant. In the end, the best way to globally refer to the different cannabis varieties and cultivars, including the so-called strains, is by speaking of cultigens, that is, "deliberately selected plants that may have arisen by intentional or accidental hybridisation in cultivation, by selection from existing cultivated stocks, or from variants within wild populations that are maintained as recognisable entities solely by continued propagation" (Brickell et al., 2009: 1).

historical – and sometimes mythical – data, but also of ethnolinguistic data, that terroirs and landraces are inseparable from the territories they are a part of and which they partially constitute.

The text concludes that there is indeed, in terms of history, sociotechnical itineraries and typicity, a Moroccan hashish terroir in the Rif, and that certain recent developments in the hashish industry endanger this terroir. In the end, the terroir approach can perhaps help mitigate the threats that it reveals if specific conservation and restoration policies are devised and implemented.

Defining the terroir and assessing the relevance of a Moroccan hashish terroir

Mention of a cannabis terroir can certainly be controversial, as is the case with most of what has to do with cannabis. This is even more the case here as the concept of terroir is most often misused because misunderstood, despite extensive specialist work, especially in French. Associating two rather controversial objects of study requires defining them precisely. Defining cannabis is easy: it is an annual herbaceous plant part of the Cannabaceae (Cannabaceae) family comprising, depending on taxonomic approaches, between one and three species. However, it is much more difficult with terroir for it “often remains a notion tossed back and forth between agricultural and cultural and between agronomic and societal issues” (Rouvellac, 2013: 7).

Terroir, as Leturcq (2020: 24) explains, is a concept that is too often used in an ahistorical manner, “readily employed with more or less conscious, more or less expressed and assumed presuppositions of a fixist, anachronistic and essentialist nature”. Consequently, terroir is regularly mentioned as a “catchall term that purely and simply evacuates the long term and the complexity of the social” (Leturcq, 2020: 24). For instance, terroir is not simply an “area of exploited land” or, according to an anachronistic (medieval) meaning, “a place where the people live” (Leturcq, 2020). Nor is it a “set of lands diversely exploited by a rural community”, unless it is confused, as it often is in French, with *finage*, that “space occupied and legally possessed by a community, whatever the mode of occupation” (Mendras, 1976, cited in Casabianca et al., 2006: 3).

Let us recall that terroir and territory are cognates, since in French, *tioroer* (1198), *terroit* (1202), and *tierror* (1212) originally derive from the Latin *territorium*, the extent of the fields included within the limits of the *civitas* (Leturcq, 2020; Tounta, 2014). Thus, according to Leturcq, in order to define terroir we must return to its “primary, neutral, etymological and minimalist definition”, namely that it “is first of all a territory, i.e. a space occupied by human beings, characterised by a set of ‘natural’ (pedology, orography, hydrology, meteorology, biodiversity, etc.) and anthropic (society, economy, culture, regulations, etc.) variables” (Leturcq, 2020: 29).

The meaning of terroir is very much historically dependent and it is for instance advisable “never to use” the term terroir “to designate [...] territories of the past” (*ibid.*). Indeed, in French, terroir designated a territory conceived in administrative and not agronomic terms until at least Olivier de Serres (1601). Moreover, the scientific approach to terroir only dates from the appearance, in the nineteenth century, of pedology and the notion of soil vocation (agronomy dates from the mid-eighteenth century) (Rouvellac, 2013: 14; Boulaïne, 2000: 12; Bérard, Marchenay, 1995).

This brief overview of historical etymology allows us to get away from the frequent and mistaken traditionalist conception of terroir, to affirm that terroir is modern by definition, and that terroirs can therefore be somehow recent. Indeed, a terroir should not be understood based on fixist, anachronistic or even essentialist presuppositions: it is only “traditional” in the sense that it is spatially and historically anchored, that it is inherited, issued from a given space and history. In short, no terroir can predate its necessarily modern conception, and a terroir is always as much invented as the tradition to which it refers (Hobsbawm, Ranger, 1983), which is important in the case of the Moroccan hashish terroir.

The traditionalist approach to terroir is also too often fixist (as is that of landraces), even though it has long been established that tradition does not imply absence from transformation or “absence of change in a context of change” (Lenclud, 1987: §13). Indeed, traditional systems are never static for traditions are commonly partly invented and (re)constructed in retrospect, as are terroirs (Pouillon, 1975; Hobsbawm, Ranger, 1983; Weber, 1983; Lenclud, 1987; Bauer, 2009; Laferté, 2012). Tradition and even more so

terroir are therefore not “products of the past”, or “works from another age that contemporaries would passively receive” but, according to Jean Pouillon’s conception (1975), “an interpretation of the past conducted according to rigorously contemporary criteria” (Lenclud, 1987: §31). It is therefore possible, and even legitimate, to confer the status of terroir on areas of agricultural production that have not yet been acknowledged as such, and notably areas of cannabis production.

Furthermore, a tradition “is not the past that produces the present but the present that shapes its past” (Lenclud, 1987: 32). Consequently, both traditions and terroirs can be associated with “paternity suits” (*ibid.*) and it is therefore possible to acknowledge (though not create) new terroirs, according to different temporalities. It is possible because “the terroir, in its recent and initially legal meaning, is not, as we tend to believe, the immanent place of authenticity, but a historical object in eternal reconstruction” (Jacquet, 2009: §32). Indeed, as can be easily understood, a terroir “lives and dies to the rhythm of the rural society with which it is identified” (Bertrand, 1975, cited in Rouvellac, 2013: 21). In fact, all terroirs evolve. Some emerge, and others disappear, according to cultural, social and economic transformations, and of course dietary and gustatory developments (or even legal ones in the case of cannabis).

On a more biophysical note, there is no doubt, despite lasting controversies, that terroirs are ecologically real. The biological validity of the terroir concept has been demonstrated on numerous occasions through many terroirs’ biochemical, organoleptic and sensory impacts (Ahmed et al., 2019; Bauer et al., 2011; Beans, 2020; Kumpf, 2020; Lembo et al., 2020; Muñoz et al., 2019). Yet, due to illegality, the effects of terroir on cannabis have been much less studied than for other plants and products (Clemensen, 2018: 145). Still, some studies (Flores-Sanchez, Verpoorte, 2008; Nowak, 2020) attest to the existence of such effects, particularly with regard to secondary cannabis metabolites (cannabinoids: THC, CBD, CBN, etc., but also terpenes), similar to the effects observed on coffee and tea metabolites (Vega et al., 2020) but also on hops (Morcol et al., 2020), a Cannabaceae like cannabis (Chouvy, 2022).

Therefore, as both an ecological and cultural reality, a complex yet accurate definition of terroir is possible, as shown hereafter by Casabianca et al., (2006:

3) according to whom, a terroir is “(1) a delimited geographical space, (2) in which a human community, (3) builds up in the course of its history a collective knowledge of production, (4) based on a system of interactions between a physical and biological environment, and a set of human factors. (5) The socio-technical itineraries⁴ thus brought into play (6) reveal an originality, (7) confer a typicity, (8) and lead to a reputation (9) for a good originating from this geographical area”.

It is therefore clear how a terroir differs from a *finage*, or even an agroecosystem, and that nothing prevents a terroir from being the product of a recent history, if only because many terroirs are actually more recent than one might assume. Therefore, there is no reason to limit terroirs to a tradition, a heritage, or even to certain agricultural productions, and thus deny any modernity to terroirs and their products. In fact, the minimum historical depth required by a terroir is that which makes it possible to confer specificity and typicity on both terroir products and, as we shall see, landraces.

In the light of the above definition of terroir, Moroccan hashish can therefore legitimately be described as a terroir product. Indeed, the Rif is a delimited geographical area where a human community (mainly Berber tribes) has built up over the course of its history (particularly in recent times) a collective production knowledge (common agricultural practices) based on a system of interactions between a physical and biological environment (rain-fed cultivation, terraces, originally organic manure), and a set of human factors (consumption traditions, colonial and post-colonial history, demography and arable land, etc.). The sociotechnical itineraries thus brought into play reveal an originality, confer a typicity (taste, smell, effect) and lead to the reputation of a hashish whose geographical origin is hardly in doubt, even for non-specialists (Chouvy, 2020).

Yet, however precise, exhaustive and elaborate it may be, the above definition fails to mention agriculture. The authors, who rightly consider that typicity is the major characteristic of a terroir product and for whom, therefore, “there is no terroir without typicity”, mention agriculture only in their definition of

⁴ Logical and orderly sequence of cultivation and production techniques applied to a cultivated species and dependent on sociocultural management and uses.

typicity. Still, they do so without referring to cultivated species and varieties, even though, as we postulate here, the archetypal terroir, or at least the ideal terroir, is logically one that is characterised by the cultivation of a landrace. Indeed, being unique by definition, a landrace is constitutive of and guarantees typicity, as shown by the flagrant difference that exists between a hashish produced in Morocco from the *kif* landrace or from a modern hybrid (Chouvy, Macfarlane, 2018; Chouvy, 2020). Of course, typicity being the main determinant of a terroir product, it also requires a precise definition, as done again by Casabianca et al., (2006: 4) in the following quote.

“The typicity of an agricultural product is (1) the property of belonging to a type, (2) distinguished and identified (3) by a human reference group (4) possessing knowledge distributed among the different actors in the chain: (5) know-how to establish, (6) know-how to produce, (7) know-how to evaluate, (8) know-how to appreciate. (9) It should not be confused with conformity to a standard and it must admit a variety within the type. (10) Among the multiple expressions of typicity, terroir-related typicity is a particular construct that embodies the effect of terroir for a given product”.

According to this definition, Moroccan hashish produced from the *kif* landrace (see below) can qualify as a terroir product in view of its specificity and typicity, as indicated by the following characteristics. This is a type of hashish obtained by sifting (as in Lebanon and Afghanistan, but unlike in India and Nepal where hashish is hand rolled), with a typical appearance, smell, taste and effect. It is produced in a similar manner by a Berber population that is diverse (various Berber confederations and tribes, often also Arabic speaking), and among which the know-how about *kif* cultivation and, since the 1960s, hashish production, has been distributed. Since Moroccan hashish presents an important internal variety, it raises the unanswered question of the possible existence of several terroirs (depending on altitude and climatic levels, exposure to sea breezes, soils, etc.).

The typicity of Moroccan hashish is clearly established: it is best described as dry and powdery, often brittle (it is pressed into bricks), greenish to brown, very aromatic and smooth, and much less spicy (easy on the throat) than hashish from other countries. It

produces short uplifting effects (“high”) due to rather mild concentrations of THC. In comparison, Afghan hashish (*chars*) is more diverse (various cultivars of the indica type in various regions of production) but can generally be said to be brownish-red, soft, easily kneaded (it is kneaded, not pressed as in Morocco), and very spicy (hard on the throat). It produces long and strong, almost narcotic effects (“stone”). As for Lebanese hashish (pressed, as in Morocco), it is usually very dense and brittle with a yellow or red color (hence the yellow or red Lebanese names), with deep, rich, spicy aromas (less than Moroccan hashish but sometimes as spicy as Afghan hashish). It produces intermediary effects compared to Moroccan and Afghan hashish: cerebral and uplifting, as with Moroccan hashish, but also with narcotic-like effects, as with Afghan hashish. Moroccan, Afghan and Lebanese hashish actually differ so clearly that they can be distinguished on the basis of their smell alone (for more details about various types of hashish, see: Clarke, 1998).

Terroir and landrace: what kif owes to the Rif and vice versa

Oddly, very few texts on terroirs consider crop varieties⁵ and very few texts on crops mention terroirs. Consequently, texts that consider both terroirs and landraces are rare, despite the fact that terroirs and landraces share being intrinsically linked to a specific place. Yet, a terroir and a landrace share more than a geographical area: they also develop in symbiosis, in a defined area, in the course of a local history, according to a collective production knowledge and a specific sociotechnical itinerary. This is what occurred, as we shall see, during the evolution of the *kif* landrace and the emergence of hashish production in the Rif.

Terroirs and landraces ought to be studied together since they share major defining characteristics, notably that both are the result of interactions between physical environmental factors and human factors. Indeed, as Casañas et al. (2017) explain, “The term

⁵ One of the few to consider the terroirs of cannabis without omitting landraces was C. ‘Frenchy’ Cannoli (1956–2021), the famed hashish master. See <https://www.nytimes.com/2021/07/31/us/frenchy-cannoli-dead.html>.

'landrace' has generally been defined as a cultivated, genetically heterogeneous variety that has evolved in a certain ecogeographical area and is therefore adapted to the edaphic and climatic conditions and to its traditional management and uses." No mention of terroir here, although it is implied.

It should be emphasised that landraces are populations of heterogeneous genotypes that are not reducible to any one individual (Hawkes, 1983). In that respect, they clearly differ from modern F1 hybrid cultivars with unique phenotypes that are comparable to the modern cultigens increasingly encountered in cannabis production, notably in Morocco (Chouvy, Afsahi, 2014). Landraces are similar to so-called heirloom cultigens in that they are open-pollinated populations not listed by the International Code for the Nomenclature of Cultivated Plants. But landraces differ from heirlooms in that they are less stable and, above all, necessarily linked to a specific locality and therefore, potentially, to a terroir.

We address here the question of landraces as the *kif* cannabis cultigen that is historically cultivated in Morocco qualifies as a landrace since it has been cultivated in the Rif for a sufficiently long time and according to a given and stable sociotechnical itinerary. As a result, it has adapted to the natural (edaphic and climatic characteristics) and cultural (cultivation techniques and selection for particular uses) environment of the Rif, in part due to the region's relative geographical isolation. *Kif* is indeed characterised by: the high tolerance of its population (a function of its genotypic heterogeneity) to the biotic and abiotic stresses of the region; its open pollination and mass selection; its average but stable yields over time (guaranteeing a certain degree of security); and its low need for inputs. These are all characteristics of a landrace (Zeven, 1998).

The value of *kif* also lies in its ability to be rainfed in a region with high but seasonal and irregular rainfall, limited surface and groundwater resources, poor soils that are thin and often degraded, and low availability of natural inputs (manure available in limited quantities due to poorly developed livestock farming) (Chouvy, 2020). Still, *kif* cultivation has evolved along with the development of hashish production from the 1960s onward, in spite of worsening environmental constraints.

This evolution of the *kif* landrace is described by Clarke who explains that cannabis grown in

Morocco until the middle of the twentieth century to produce smoking *kif* (chopped cannabis flowering tops mixed with black tobacco) looked very different from the more recent cultigen geared toward hashish production. The early *kif* plants were large and full of branches. They were grown in small numbers, spaced out, on some of the best soils that were enriched with manure and irrigated when rainfall was insufficient. Growers were thus able to select their seeds according to specific criteria and allow the development of a landrace that has since evolved significantly with the large-scale cultivation devoted to hashish production (Clarke, 1998: 185–187). While it would be interesting to refer to more specific characteristics, such as THC and CBD contents and ratios, but also more complex phytochemical and organoleptic characteristics, such data (or even research) is not yet available, whether about the early *kif* or about its more recent evolutions (although the cannabinoids and terpenes characteristic of the "Moroccan Beldia Kif Standard"-based on three phenotypes grown from "ancient heirloom Moroccan seeds", which showed important variations-has been produced by an independent group of breeders: see note 9).

According to Brunel (1955) and Benabud (1957), different cultigens of *kif* (or were they different *kif* landraces?), including the geographically named *zerouali*, *soussi*, *gnaoui*, *haouzi* and *makhlif*, were still cultivated throughout Morocco in the first half of the twentieth century (see Afsahi, 2017, for a detailed study of the history of *kif*). Only the *ktami* cultigen, cultivated around Ketama and reportedly renowned throughout the country since at least the seventeenth century, has possibly reached us, thanks to its cultivation location (relative isolation) and site (mountains), a clear example of how territories make terroirs possible and shape them (cf. below). It is difficult if not impossible to determine how autochthonous the *ktami* cultigen was in the twentieth century and when and to what extent it may have crossed (including through introgression) with Middle Eastern allochthonous varieties (as is assumed and likely: Bellakhdar, 2013). It is equally difficult to determine to what extent the cultigen described above by Clarke is strictly derived from the *ktami* cultigen or whether it is the result of a cross with the nearby *zerouali* cultigen (cultivated in the *Jbala* region occupied by the Beni Zeroual tribe, in the foothills of the Rif to the north of Fez

and south-west of Ketama, where hashish production continues to this day).

In any case, today's *kif*, probably partially issued from the *ktami* cultigen, shows a significant phenotypic variance and remains the cannabis cultigen most adapted to the climatic and edaphic context of the Rif. Its narrow leaves and weak branching are more suited than ever to the climate and altitude of the Rif, where, despite Morocco's highest annual rainfall, summers are increasingly hot and dry. Its relatively small leaf area (low evapotranspiration) and rapid flowering (7 to 8 weeks) make it particularly well adapted to its natural and cultural environment, with the vast majority of cultivation undertaken in rainfed fields (*bled bour*, or *lbe'li* in the Rif⁶). As for irrigated fields (*bled seguia*), they are historically very rare and have only been extended recently at the risk of depleting the region's aquifers. Finally, *kif* reaches maturity as early as mid-July, when water stress is close to its highest and days begin to diminish, long before the violent autumn rains of the Mediterranean regime risk jeopardizing the crop and its quality (Chouvy, 2020).

Given the above definitions and descriptions, it is difficult not to think of terroirs when considering landraces, and vice versa, as they are both clearly defined in terms of environmental and human balance, as well as of geographical origin. Indeed, as Harlan pointed out in 1975, "different land races are understood to differ in adaptation to soil type, time of seeding, date of maturity, height, nutritive value, use and other properties". As such, they constitute "balanced populations" that are "variable" because they are "in equilibrium with both environment and pathogens" and are "the result of millennia of natural and artificial selections" (millennia being in most cases an exaggeration) (Harlan, 1975: 618).

As already mentioned, terroirs and landraces share some key determinants and features, spatially,

⁶ "Bour" is a (classical) Arabic term meaning "wild" and, when referring to land, "moorland" or "uncultivated / cultivable land". The use of the term in Darija (Moroccan Arabic) to refer to rainfed agriculture may be explained by the cultivation of cleared and therefore unirrigated land. The term is widely used in the literature on agriculture in Morocco, but it is not used in the Rif, where the term *lbe'li* or *lbaali* (*bieli*) means rainfed in classical Arabic) is preferred (the Arabic article is always incorporated into Berber nouns, hence *lbe'li*). Irrigated land is called *sseqwi* in the Rif (the Arabic/Darija 'g' is a 'q' in Senhadja: same root as *seguia*): Gutova, 2021; plus personal communications.

ecologically, culturally, and historically. In that respect, they are inherited from specific geohistories, in the Braudelian meaning of "spaces that had almost frozen in time" (although neither terroirs nor landraces are frozen in time: Chouvy, 2022), as well as in the more modern meaning put forward by Grataloup for whom "the time of history and the space of geography are inextricably intertwined" through "social space-times" (Grataloup, 2009). This is what Barham suggests when she writes, yet without making the connection with geohistory or landraces: "This concept of terroir relates to a time of much less spatial mobility, when change occurred at a slower pace. Terroir products, in this interpretation, resulted from long occupation of the same area and represented the interplay of human ingenuity and curiosity with the natural givens of place." (2003: 131). It is therefore obvious that the *kif* cultigen owes as much to the Rif region as the Rif region owes to the *kif* cultigen, and that terroir and territory, but also geography and history, are necessarily understood together.

No terroir without territory: site and situation

Through their spatial and historical dimensions, terroirs and landraces are also indissociable from the territories they belong to and that they partially constitute. This is because they result from territorialisation processes, as has been amply demonstrated by the examples of the location and development factors of the Bordeaux, Burgundy and even Champagne vineyards. There, situations (proximity to abbeys, large towns, harbours) mattered as much, if not more, than biophysical sites in terms of localisation factors (see: Enjalbert, 1953; Dion, 1959; Bonnain-Dulon, Brochot, 2004; Jacquet, 2009; Labbé, 2011; Rouvel-lac, 2013; Meloni, Swinnen, 2018).

Territory and terroir can therefore be said to be consubstantial: while there can of course be a territory without a terroir, there can be no terroir without territory, that "appropriated space, with a feeling or awareness of its appropriation" (Brunet, Théry, 1993: 480). Indeed, beyond their common etymology (also in Arabic, as we shall see), terroir and territory share that they are the "projection onto a given space of the specific structures of a human group, which include the mode of division and management of space, the planning of this space" (*ibid.*).

Cannabis terroirs are, like those of the above-mentioned French vineyards, determined by their situation as well as their sites, and therefore by the territories to which they belong. For instance, cannabis cultivation being illegal, no large production areas can exist without a sufficient deficit of political and territorial control, often associated with, or due to, a certain degree of geographical and/or political isolation. Because it is illegal, cannabis cultivation can only be undertaken on a large commercial scale in very specific political and territorial contexts (situations), such as those marked by armed conflict, corruption, poorly integrated territories and lack of financial, human and material resources to assert state control. Large-scale cannabis production therefore does not necessarily take place in the best biophysical contexts (sites) but in regions where the authority of the prohibitionist state is weak enough to allow it (situations) (Chouvy, 2019b). As a result, the consubstantiality between cannabis terroir and territory is most significant.

Yet, while situation is more of a determinant than site in the localisation factors of cannabis production regions, sites are nonetheless important. This is because sites matter in biophysical terms (climates, altitude, latitude, soils, etc.) and in terms of isolation. Indeed, hilly or mountainous regions that are difficult to access are most favourable to the concealment of small and medium-sized illegal plots (Chouvy, 2019b). But if the geographical and/or political isolation of production regions (Chouvy, 2002) facilitates the concealment of crops and impedes eradication efforts, it also favours the development and conservation of various cannabis landraces across the world, notably in the Moroccan Rif, Afghanistan provinces, the Parvati Valley and the North-Eastern States of India, etc.

The history and geography of Moroccan hashish production are a testimony to the importance of the territory in the emergence of a cannabis terroir. Long relatively isolated from the rest of Morocco, due to its mountainous terrain, its former membership of the Spanish Protectorate (1912–1956, when the rest of the country was a French protectorate), and a very low level of development and equipment, the Rif has long been a “barrier zone... quite heavily populated by sedentary mountain dwellers in search of additional resources” (Troin, 2002: 327). Marked by identity movements and long marginalised by the central

government (especially the Senhadja region, whose inhabitants are marginalised even by other Berbers: Gutova, 2021), the Rif has long been the subject of a state policy combining economic abandonment and political and even armed repression, which partly explains the state’s tolerance of illegal cannabis cultivation (Chouvy, 2008, 2018).

The fact that cannabis is now firmly established in the Rif is therefore partly inherited from the long and complex history of the region, which has included violence, rivalries, tolerance and protest. But cannabis cultivation in the Rif, particularly of the *ktami* cultigen, is also culturally determined as it is inseparable from the cult of saints and the importance of religious brotherhoods (particularly the Haddawa *zaouia*) that, from the seventeenth century onwards, encouraged the development of *kif* cultivation and consumption (Brunel, 1955; Mouna, Afsahi, 2014). Cannabis cultivation is thus territorially anchored in the Rif region, which has allowed the emergence of a cannabis terroir (*kif* and now hashish) and an associated landrace, probable heir to the *ktami* cultigen whose survival, however imperfect, owes much to the local political-territorial context.

Moreover, during decades, cannabis cultivation has made it possible to cope with some of the region’s economic and geographical constraints (Lazarev, 2019: 320). Indeed, despite receiving the most abundant (but irregular, due to the Mediterranean regime) rainfall in the country, the Rif is one of the least suitable regions for agriculture in Morocco, due to its very uneven terrain, steep slopes, poor and eroded soils, and, until recently, the very limited use of irrigation (Chouvy, 2020; Fay, 1979; Laouina, 1995).

Moroccan hashish production, which followed that of smoking *kif*, developed from the 1960s onwards, partly as a result of the emergence of Morocco as a favoured destination for hippies, the impact of the war in Lebanon (1975–1990) on the production of Lebanese hashish, and its location on the southern shore of the Mediterranean Sea, just a stone’s throw from the European market (Chouvy, 2008).

That cannabis cultivation is now limited to the Rif region, while it was undertaken elsewhere in Morocco before independence (Gharb and Haouz, in particular), is of course no accident. Although the Rif is far from being the most suitable region (site) in Morocco for agriculture, it is the only one that is territorially prone for cannabis cultivation in terms of

its historical, cultural, political, and socio-economic dimensions (situation).

From bled to beldi: between territory, terroir, and landrace

The terms used in Moroccan Arabic (Darija) to designate territory, terroir, and landrace all derive from the Arabic etymon *balad*, something that indicates semantic relatedness between the different concepts. However, these concepts are not necessarily strictly equivalent between Arabic, English, and French. For instance, in the Arab-Muslim world, the concept of territory is historically “alien to the concept of state” and “is not based on geographical data” (Flory, 1957). This is unlike the Western concept that stems from Roman law and that “results from a mode of legal reasoning based on secular law, steeped in Cartesian logic and a constituent part of the concept of state”. This is very different from the Arab-Muslim concept of territory that “is based neither on a *jus loci*, nor on a *jus sanguinis*, but on a *jus religionis*” (think of *umma* and *dar el islam*) (Flory, 1957: 76; see also Benkhatab, 2019, Mouna, 2008: 35–45). Therefore, “territory” has no strict equivalent in Arabic.

This has affected the understanding of the notions of *bled es-siba* (referring to the parts of the country not subject to the central power) and *bled el-makhzen* (the parts subject to the central power). The French and the Spanish also probably reified both notions by approaching Moroccan realities in a Eurocentric way through the Western concepts of nation, territory, border, and the exercise of power that followed (Benkhatab, 2019). In Morocco, the spatial categories of *bled es-siba* and *bled el-makhzen* have long had a definite territorial dimension but the two opposing categories “were not separated by well-established boundaries and were not as static as often assumed” (Aderghal, Simenel, 2017: 58).

This is important because the Rif region has long been considered part of the *bled es-siba*, given its tribal disputes (*siba*⁷) and protest movements (*hirak*),

which have often been harshly repressed by the central authorities (*makhzen*). The term of *bled* is essential as it is both ubiquitous and polysemous, both in the Rif and in the rest of Morocco, since the Arabic word *balad* can designate “the town”, “the region” or “the country” and, by unambiguously referring to the local, express the concepts of territory, land, plot (cf. *bled bour* and *bled seguia* mentioned above and the “*bled du kif*” or “*kif’s bled*” mentioned, unfortunately without explanation or source, by Mouna: 2008), terroir, and even landrace (*balad*: Ali-Shtayeh, Jamous, 2006). Thus, in Morocco, “the word *beldi* literally means ‘from the country’ (*balad*) and applies to everything that is exclusively (at least theoretically) ‘local’ and ‘indigenous’” (Rachik, 1997: §1) and in particular “to many locally produced sylvo-agro-pastoral resources known as ‘*beldi*’, [...] as opposed to those known as ‘Christian’, and by semantic extension of the term *roumi*, to those coming from the West” (Simenel, 2010: 168).

Since the massive introduction of modern cannabis hybrids in the 2000s, and especially the 2010s (Chouvy, Afsahi, 2014), *kif* is now described as *beldiya* (*lbeldiya* in Berber), as are all indigenous products when alternative non-indigenous products exist. This is because, “for a product to be qualified as *roumi*, it must have a *beldi* counterpart, and vice versa” (Simenel, 2010: 168). In Morocco, in particular, the concepts of territory, terroir and even landrace (and therefore of autochthony, authenticity, etc.) are thus expressed through subtle variations of the same word and bear witness to their consubstantiality and semantic relatedness.

In that regard, it is interesting to note that before the introduction of cannabis hybrids, the *kif* landrace

Footnote 7 (continued)

As for *siba* (*sibt* in Berber: Agrou, 2012: §107), a verbal noun from the Arabic *siyyeb* (to leave, to throw away, to abandon), it translates into “a state of anarchy, disorder, dissidence, insubordination, rebellion against the authorities, the central power” (Prémare, 1996; plus personal communications from linguists Lameen Souag and Evgeniya Gutova). The *bled es-siba* is thus “the territory whose populations are in a state of anarchy”, where the authority of the sultan and henceforth of the state is contested. The equivalent exists in Algeria, where there is mention of *bled el-khela*, or land of abandonment (Rinn, 1900: 27; Hermassi, 1973: 211), and *bled el-baroud*, or land of gunpowder (from *bārūd*, a Chleuh / Tachelhit word for gunpowder and, by extension, combat: cntrl.fr and Rey, 2010), as opposed to the very explicit *bled al-Turk*.

⁷ The Arabic term *makhzen* (fortified warehouse in Arabic (*mahāzin*, plur. of *mahzan*), gave “shop” (*magasin*) in French: cntrl.fr) referred to the sultan’s administration and now unofficially refers to the Moroccan administration (Claisse, 1992).

was notably called *naenae* (mint) and *aachba* (stem, branch) (Afsahi, 2009). After the hybrids were introduced, *kif* started being referred to by names affirming its local origin: *maghribiya* (the Maghrebi), *aadiya* (normal, regular), *kdima dyalna* (the old one, ours) (Afsahi, Chouvy, 2015) and, above all and according to a clearly dichotomous logic, *beldiya* (Chouvy, 2020). As for the hybrids, they were immediately given names that emphasised their allochthonous character: for example *gaouriya* (the Westerner, from the Turkish *gavur*, pig and, by extension, miscreant, infidel) and *roumiya* (the foreigner, from *al-roum*, historically denoting the Byzantines, hence the Romans and, by extension, Christians and anyone or anything originating from the West) (Afsahi, Chouvy, 2015; Rachik, 1997; Chouvy, 2020). It is clear that calling the *kif* landrace *beldiya* proceeded from “an interpretation of the past conducted according to rigorously contemporary criteria”, as formulated by Pouillon (Lenclud, 1987: §31). The reference to *beldiya* is therefore not an inheritance of the past but a resolutely modern phenomenon triggered by the introduction of hybrids, as a local (territorial: spatially and culturally) reaction to modernity and disruption.

Raising the *beldiya* question logically brings to the fore that of *kif*, whose etymology is rich in geo-historical lessons, in terms of origin, authenticity, territoriality, etc. It matters because, in the Rif, *kif* is sometimes thought to be a Berber term (interviews with Rifian farmers and elders) whereas it is clearly an Arabic loanword (although adapted in different Berber languages: for example, *kif* (*l-kif*) is masculine in Senhadja, but feminine in Ghomara: Gutova, 2021; Mourigh, 2015: 90). While the word is undoubtedly of Arabic origin, as an interrogative adverb (*kaif*: how; and this interrogative use of *kif* has passed into Ghomara: Mourigh, 2015: 373) and in its nominalized form (“state”, “disposition” by extension of “how it is”), it exists, however, in the sense of a state of pleasure, well-being, cheerfulness (in particular caused by the consumption of cannabis) in many other languages, including Turkish and Persian, but also French (as early as 1670: Laffitte, 2005: 7). Yet, the origin of this change of meaning is not clearly established. How the term *kif* came to refer to both the cannabis plant (*kanab* in Arabic) and the specifically

Moroccan cannabis/tobacco smoking mixture, mentioned as *khaf* as early as 1791 in English and 1801 in French⁸), probably by metonymy, is equally unclear although a Turkish influence is possible (Guerrero, 2013: 153; Laffitte, 2005: 9). Indeed, other Moroccan terms related to cannabis are of Turkish origin and do not exist in classical Arabic: this is the case of *sebsi* (pipe) and *tbisla* (plate used to produce the hashish of the same name, reputed to be of high quality), which were probably introduced after the capture of Fez by the Turco-Wattasid alliance in 1554 (Chouvy, 2020).

These etymologies are of great importance because they suggest that oriental cannabis varieties from the Ottoman Empire may have also been introduced from the sixteenth century onwards and may have contributed to the emergence of a cannabis cultigen (*kif*) that must have been far removed from what it had become in the twentieth century after further hybridisation and evolution (El Moudden, 2004: § 13; Procházka, 2012; Bellakhdar, 2013: 121–122).

At this point, it is of course interesting to note that there is no Berber term for cannabis, which is hardly surprising given that textile cannabis (hemp) only appears in Moroccan written sources in the tenth century (possibly cultivated since the twelfth century from Egypt to Morocco: Clarke, Merlin, 2013: 127, 193–196; Bellakhdar, 2013: 117) and that a psychoactive variety⁹ was probably not introduced into the Maghreb until the 14th or the fifteenth century

⁸ Mention of *khaf* in 1791 in the account of a journey to Morocco by the English surgeon William Lamprière, commissioned by Mohammed V (1927–1957) (French translation of 1801), of *keff* in 1805 by Antoine Silvestre de Sacy, and finally, after many other occurrences, of *kif* as early as 1853 in Algeria in a document of the French Ministry of War (Laffitte, 2005: 9).

⁹ According to the classification used by Clarke and Merlin (2013: 128, 330), who favour a polytypic classification of *Cannabis*, the *kif* now used in Morocco for hashish production is a cultigen known as NLD (*narrow-leaf drug Cannabis*, usually referred to as “sativa”) that they call *Cannabis indica* ssp. *indica* var. *mediterraneana*, which may be the result of hybridisation (introgression) between Asian NLD varieties (between Lebanon and Iran) and *narrow-leaf* hemp (NLH) varieties from southern Europe, which would explain its low branching, narrow leaves, modest THC levels (2–5%) and relatively high CBD levels (up to 2% according to some analyses) (https://www.aceseeds.org/en/strains/pure-stabilized/moroccobeldiaki_fstandard.html?fbclid=IwAR1lcAS1uJaZrQg-3cXxbEF6Umyfbf8fay54w4hUUn5BCZXpri2hQatePRo).

(Bellakhdar, 2013: 116, 119). However, it is possible that Arabic terminology replaced a hypothetical Berber terminology over the centuries.¹⁰ As for the term hashish, also of Arabic origin¹¹ (Arabic loanword in both French (1556) and English), its use in Morocco to designate sifted resin (called *chira*) and then hashish (compressed resin) is easily explained by the fact that its production only dates back to the 1960s and has not given rise to a local term (neither in Berber nor in Darija).

What hashish terroir in the Rif, and according to what criteria and legitimacies?

According to the above, there is no doubt that there is a cannabis terroir in Morocco, and more specifically a hashish terroir. Hashish has been produced and consumed long enough in Morocco to acquire a definite typicity and reputation, both locally and internationally. As a result, Moroccan hashish can be considered a terroir product in light of its more or less ancient history and tradition.

Smoking *kif* has a much longer history (see Afsahi, 2017) than Moroccan hashish, but it is now produced in much smaller quantities and is intended only for a limited domestic market. Hashish production, on the other hand, is much more recent as it dates only from the 1960s (Clarke, 1998; Chouvy, 2008; Clarke, Merlin, 2013; Chouvy, Macfarlane, 2018). Less traditional and ancient than smoking *kif* production, hashish production has had a definite impact on the physical environment (development of cannabis monoculture, expansion of cultivated areas, contribution to deforestation, soil and water depletion and pollution) and on the evolution and, potentially, alteration of the *kif* landrace (Chouvy, 2020).

The *kif* landrace that was cultivated before the development of hashish production probably no longer exists as it has evolved since the 1960s into a modified landrace that is now also at risk of significant and rapid alteration through introgression from modern hybrids (as is now the case with the vast majority of cannabis landraces worldwide). Unfortunately, this is something that the legalisation of cannabis for therapeutic use in 2021 in Morocco is likely to exacerbate. Indeed, therapeutic cannabis production in Morocco will not rely on the *kif* landrace but on allochthonous varieties. This will inevitably favour the introgression processes that have threatened the *kif* landrace since the 2000s and will not help restore the region's fragile ecological balance (Chouvy, Afsahi, 2014; Chouvy, Macfarlane, 2018; Chouvy, 2020).

In this fast changing context (introduction of hybrids both for illegal hashish production and for legal therapeutic cannabis), the pressing question is not that of the existence of a Moroccan – or more precisely Rifian – terroir, but that of which criteria to use in order to define and delimitate such a terroir (or these terroirs if it turns out that there is more than one terroir). Which terroir or terroirs, then, according to what legitimacies and criteria? This question, which calls for further research, is particularly complex and controversial, due to many tribal, economic and political rivalries.

Indeed, the terroir-defining criteria are numerous and all of them are controversial, whether they are historical (antecedence, tradition, heritage), geographical (the so-called historical zone, the five *douars*¹²: see below), botanical (remnants of the *kif* landrace), sociotechnical (cultivation and production techniques, cultural (autochthony, Berber/Arab identities, plant introduced by the Arabs, Arabic and Turkish vocabulary with no Berber equivalent), not forgetting, of course, the criteria of typicity, originality, reputation and even authenticity. Such criteria will form the basis of the technical specifications and product characteristics needed to officially label Moroccan hashish as a terroir product and/or

¹⁰ Personal communication from Evgeniya Gutova.

¹¹ Literally, “grass” or “hay” in Arabic (*ḥašīš*), then, euphemistically, “Indian hemp”, and finally, metonymically, compressed cannabis resin (although it is not clear when, if only because there has always been considerable confusion as to what exactly the term referred to: the plant, its end products, sometimes, inaccurately, even the “hashish” made from cannabis leaves instead of the sieving of trichomes). See: Rosenthal, 1971; Nahas, 1982.

¹² Village or hamlet, from Arabic *duwwār*, “encampment of tents established in a circle”. See Boyer, 1995.

to establish a protected designation of origin (PDO) (Chouvy, 2020).

This is even more complex because the concepts of terroir and territory are intimately linked to those of autochthony and authenticity, and because the question of autochthony in Morocco is far from being neutral since Berber communities traditionally refuse to “refer to autochthony in order to claim antecedence in the occupation of a territory” (Colonna, 1987: 249, quoted in Aderghal & Simenel, 2012: 57). There is indeed “something of the refusal or unease of the mountain people towards autochthony” (*ibid.*), with the Berbers, in particular, traditionally seeking to “shed the weight of autochthony” and to “value the Muslim conquest as a model of inscription in the soil” (Aderghal, Simenel, 2012: 58).

The relationship to territory and autochthony is therefore complex and affects the related concepts of terroir and landrace, and even that of *beldi*. This is clearly the case when it comes to the logics at play behind the state’s tolerance for cannabis cultivation as illegal cannabis cultivation is limited to a given space, a territory delimited according to pseudo-historical criteria (the famed but never defined “historical zone”) and community / identity criteria (particular legitimacy of certain tribes and privileges supposedly granted to five unspecified *douars*).

While there is no doubt that there is at least one cannabis terroir in the Rif, its delimitation is all the more difficult because little is known about the history of cannabis cultivation in the region. In addition, traditions, which tend to guarantee the current legitimacy and the possible future legality of hashish production, are, as is often the case, largely invented and constructed retrospectively. For example, the so-called historical zone, and the five *douars* where Sultan Moulay El Hassan I (1873–1894) had allegedly authorised cannabis cultivation, have long been the subject of approximations and even errors, and their existence has clearly benefited from an illusory truth effect (or reiteration effect).

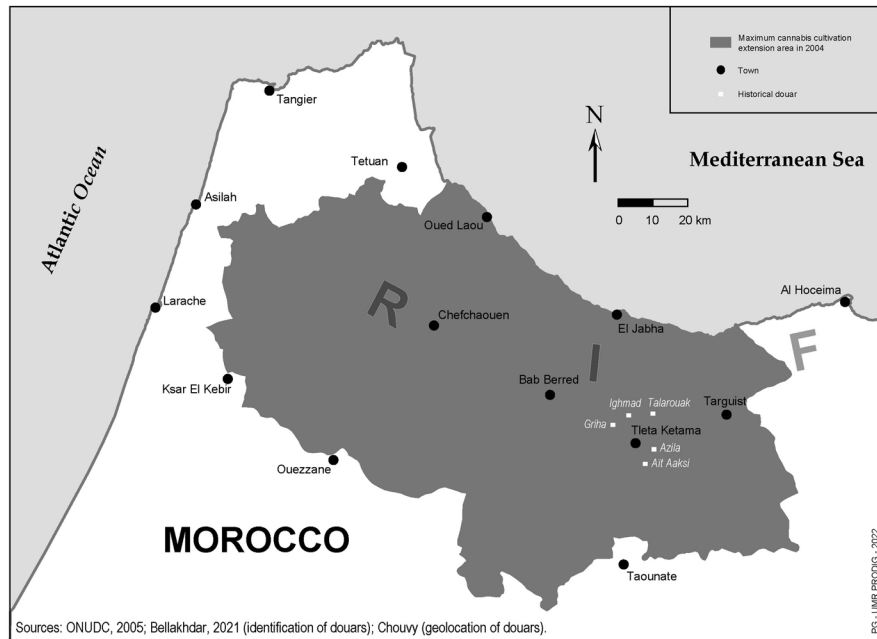
No texts about cannabis cultivation in the Rif, including my own, have delimited the so-called historical zone: in part due to a lack of knowledge, spatial limits and historical periods are never specified or even addressed. The question of the five *douars* is even more problematic since they are rarely mentioned by name or are at best incorrectly named. One

can actually wonder if the Sultan ever really granted specific *douars* the right to grow cannabis as there seems to be no historical written source explicitly mentioning these five *douars*, nor any official or even convincing explanation of the alleged choice made by the Sultan or, more broadly, the *makhzen* (in consultation with the Ulemas of Fez, who were the real holders of legislative power at the time: Mouna, 2009: 189–191). In the end, the lack of historical data lends a mythical rather than a historical basis to the legitimacy of cannabis cultivation claimed by some communities.

Jamal Bellakhdar (2021: 69, plus personal communication) recently and cautiously proposed the names of five *douars* (see map) that, if historically accurate, might delimit the historical zone, or at least its centre, if one accepts the hypothesis (formulated here) that these villages and the historical zone are linked. As an illustration of the vagueness and confusion that exists about the cannabis history in the region and about these villages, the propositions made recently by others than Bellakhdar were put forward by confusing tribal names (Beni Khaled and Beni Seddate) and fraction names (Amzaz) with the village names mentioned hereafter (Mouna, 2009: 191; Mouna, Afsahi, 2014).

The five *douars* mentioned by Bellakhdar are all located in the territory of the Senhadja de Sraïr tribal confederation, in the heart of the central high Rif. Three *douars* belong to the Ketama tribe (endonym: Ikutamen) and two belong to the Aït¹³ Seddat tribe: Aït Aaksi/Aïssi (Beni Issi in French), Griha (formerly in the territory of the Beni Khaled of the Ghomara confederation) and Ighmad for the Ketama, and Azila and Talarouak for the Aït Seddat, with all villages except Griha currently being at least partly Berber-speaking (*Senhadja / Chelha*) (Adardak, 2016; Bellakhdar, 2021; Gutova, 2021, and personal communications). The villages of Aït Aaksi and Griha were first mentioned by Grigori Lazarev in 1958 and by Gérard Maurer (1959: 55). As for the other villages, Bellakhdar rightly states that it is “difficult to find one’s way around”, due to the lack of written sources and the multiplication of claims by one or the other (2021: 69).

¹³ Aït is a Berber prefix (equivalent to Arabic *beni*) referring to parentage. Berber-speaking tribes and villages tend to be called *aït* and not *beni* (Arabic-speaking).



The existence of a legal exception for five *douars* is of course of certain historical interest, but it is especially important in terms of legitimacy in the current context of illegality. It also matters in the event of a possible future legalisation insofar as the recognition of an anteriority and a tradition is to be acknowledged by the state. We are here faced with one of those “paternity suits” evoked by Lenclud (1987: 32) and probably even with a classic case of invented traditions (Hobsbawm, Ranger, 1983). Whether this exemption was granted or not, by the Sultan or not, the fact remains that the story told about the five *douars*, whether invented or not, testifies to a will of claim, to a quest for legitimacy emanating from the heart of the central high Rif, where cannabis cultivation and hashish production have the greatest reputation. Indeed, the major hashish production centre of Ketama, by far the Rif’s most famous and reputable, is significantly located at the centre of the circle formed by the five *douars* mentioned by Bellakhdar.

In any case, the Sultan would have authorised cannabis cultivation for smoking *kif* production, not for hashish production as it only dates back to the 1960s and is therefore a recent “tradition”. Hashish

production was imported together with the threshing/sifting technique, as were presumably the allochthonous landraces (probably from the Near or Middle East: Bellakhdar, 2013: 121–122) that modified the autochthonous *kif* landrace by way of introgression. The oft-repeated process according to which “every innovation that ends up being imposed on everyone becomes itself a tradition whose novelty must necessarily fade away” (Hammoudi, 2001 (1977): 60) is clearly at work here.

None of this, however, calls into question the legitimacy of referring to Moroccan hashish as a terroir product, since no terroir products, not even the most famous and reputable ones, from Tarbais beans to champagne (Bonnain-Dulon, Brochot, 2004), are free of adaptations and even arrangements with historical practices and techniques (“traditions”) that are deemed obsolete, too restrictive, or too constraining. All terroir products are in fact the result of invented or reinvented traditions and, consequently, no terroir product can claim to be truly authentic (Jacquet, 2009) for “authenticity does not exist in itself” but is largely a “social and commercial construction” (Bonnain-Dulon, Brochot, 2004).

Moreover, the only current debate about cannabis terroir and protected designation of origin is the one taking place in the so-called Emerald Triangle region of northern California (Mendocino Appellations Project), where production is no older than that of hashish in the Rif but where a cannabis terroir is unlikely to exist (lack of regional typicity) (Brady, 2013; Cannoli, 2015; Stoa, 2018; Stone, 2019; Sweeney, 2016). Ultimately, it is legitimate to speak of cannabis terroirs whenever a cannabis production conforms to the above definitions of terroir and typicity, particularly – but not only – when autochthonous landraces are concerned (autochthony being, always, biologically and historically, relative).

Conclusion

If one can reasonably conclude, in the light of history, sociotechnical itineraries, and typicity, that there is indeed a hashish terroir in the Rif, it remains to be precisely delimited. Where, in fact, does the hashish terroir begin and end in the Rif? If there are several terroirs, i.e. if hashish of different types (typicities) exists here and there, what criteria can tell them apart? Finally, yet importantly, to what extent has the massive introduction of modern hybrids changed the *kif* landrace and compromised the recognition of a hashish terroir and its conservation (or even restoration)?

These issues all matter as these modern hybrids, which are particularly water demanding, have recently increased the environmental pressure of cannabis cultivation in the Rif (Chouvy, 2020). Without measures to protect the *kif* landrace, the ecology (water resources), agrobiodiversity (landrace, unique by definition), and ultimately the economic and socio-political future of part of the Rif region are threatened. This matters even more as the worldwide cannabis legalisation processes will undoubtedly diminish some of the comparative advantages of the Moroccan cannabis economy and restrict if not close its historical export markets. On the other hand, the supposedly promising therapeutic cannabis market and the recent Moroccan legalisation (2021) are unlikely to be economically viable and clearly cannot replace the current illegal market (Chouvy, Macfarlane, 2018).

Cannabis legalisation in Morocco in the short or medium term is not only likely, given that the debate

has been going on in the country since 2008, that the production of therapeutic cannabis was legalised in 2021, and that the international context is favourable: it is also, and above all, desirable, if not necessary. Indeed, in the production area, cannabis cultivation is widely perceived and claimed as an inalienable right, and the authorities have been unable to enforce its prohibition or to offer economic alternatives (Blickman, 2017; Chouvy, 2008). Being illegal, cannabis cultivation has evolved outside any regulation, especially environmental regulation, which has notably allowed the hashish industry to grow in volume and value by favouring quantity over quality (Clarke, 1998: 184; Chouvy, Macfarlane, 2018). Legalisation is therefore necessary if only for the cannabis industry in the Rif to be finally regulated and controlled, and for environmental standards to be established and enforced.

Legalisation is also desirable because of the rapidly changing international legislative context, with the number of countries that have legalised the production and consumption of medical and even recreational cannabis increasing very rapidly, particularly in sub-Saharan Africa and the Middle East (Chouvy, 2019a). It is precisely because the global market is becoming increasingly competitive that Morocco must set itself apart. It should do so not by favouring, as is already too often the case elsewhere, the allocation of operating licences to conglomerates (often international), but by promoting the establishment of small-scale organic and labelled agriculture (PDO, organic, fair trade). Building on the international reputation of the country's *kif* landrace and hashish would give Morocco, the Rif and its mostly rural population, a comparative advantage in a fast-growing global competitive market. Tom Blickman makes no mistake when he writes: "Cannabis farmers in Morocco should have access to emerging legally regulated cannabis markets that are gaining ground worldwide. The challenge is to find a sustainable development model that includes cannabis cultivation in Morocco, instead of excluding cannabis and ignoring the realities of more than 50 years of failed attempts to eradicate the only viable economic option in the region." (Blickman, 2017: 1).

The aim of this article was to provide a rather novel approach to Moroccan hashish production by focusing not on illegality and prohibition but on terroir and landrace, not on cannabis suppression but

on cannabis development, not on regional stigma but on regional fame. Throughout the concepts of terroir and landrace, hashish production no longer shows as a negative and reprehensible activity but as a resource and a heritage that ought to be protected and valued. As the above approach in terms of terroir and landrace has shown, the Rif owes much to cannabis and vice-versa, in historical, geographical, biophysical, and cultural terms. In fact, it is no exaggeration to say that the Rif without cannabis would no longer be the Rif.

The terroir approach can therefore add value to a regional product whose typicity and reputation can benefit the Rif's image and economy, thus breaking with the bad reputation the Rif has suffered for too long. This is all the more important because the future of the region and its largely rural population depends upon that of the cannabis economy and the spatial, social, economic and political reconfigurations that its legalisation will require. Such a paradigm change is urgent as prohibition and repression have had the unintended consequence of boosting the very industry they were intended to suppress. Illegality obviously made any coordinated regulation of a thriving cannabis industry impossible, unfortunately letting the massive introduction of hybrids happen and bring significant changes to the typicity and reputation of the Moroccan hashish (Chouvy, 2020).

Cannabis legalisation in Morocco will certainly not be an economic panacea (Chouvy, 2020). However, even if it is not sufficient to ensure the socio-economic development of the region, cannabis legalisation will have the undeniable advantage of bringing cannabis growers out of illegality and ending their marginalisation. Above all, cannabis legalisation will allow the Rif to be better integrated territorially and economically with the rest of Morocco and to promote an economic, social and political stability that is essential to the Rif region, Morocco as a whole, and even the European Union.

Declarations

Conflict of interest The author declares that he has no conflicts of interest.

Human participants and/or animals All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee of CNRS and with the 1964 Hel-

sinki Declaration and its later amendments or comparable ethical standards. This article does not contain any studies involving animals performed by the author.

Informed consent Informed consent was obtained from all individual participants involved in the study.

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