Cannabis for medicinal purposes as a contribution to growth and employment

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I would like to start with a disclaimer. I am not a scientist but a political activist, but I happen to be coordinator of a network (Encod) that unites many experts on cannabis: organisations of both recreational and medicinal cannabis users, researchers and health workers, people working in the legal cannabis industry, such as seedbanks and coffeeshops, and of course people working in both illegal and legal cannabis production. The first thing that these people tell me and that I would like to pass on to you is that when cannabis is concerned, the people who know a lot, also know that they don't know very much yet.

Most of the information on cannabis is found in a grey zone, where many of the details that we would need to have in order to make a definitive conclusion are, for a variety of reasons, extremely hard to verify. The reason is of course the prohibition of cannabis and other drugs which has established a market that is almost entirely driven by economic reasons and therefore attracts people who love money more than they love cannabis, and a bureaucracy that is almost entirely driven by moral or political reasons. None of those two are really taking into account the interests and rights of consumers and producers, let alone the needs of patients. This, and here we have also the reason why Encod was established, results in a situation which can best be explained by these

two triangles of drug-related harms and benefits. On the right side, illegal corporations continue to feed themselves with money gained from the drug market, while on the left side, the legal and political apparatus continues to use drug prohibition to justify far going control and intrusion in people's private life. Consequently, the benefits of these policies are mainly felt by those on top, with the power to influence policies, while their harmful effects are mainly felt by those on the bottom, without any of that power. Which explains why we are making so slow progress in this discussion..

From theory to practice

1. It's a plant
2. Legal situation in Europe
3. Examples of the UK, Netherlands and Israel
4. Perspectives for sustainable growth & employment

My presentation is divided in 4 parts. First of all I wish to define the term medicinal cannabis, then give an oversight of the legality of cannabis in the European Union, focussing on three countries that have built up some experience with state authorised production of either natural cannabis or derivates for medicinal purposes, and finally formulate some perspectives for the impact on growth and employment if the implementation of a legal programme for production of cannabis for medicinal purposes were to be considered.

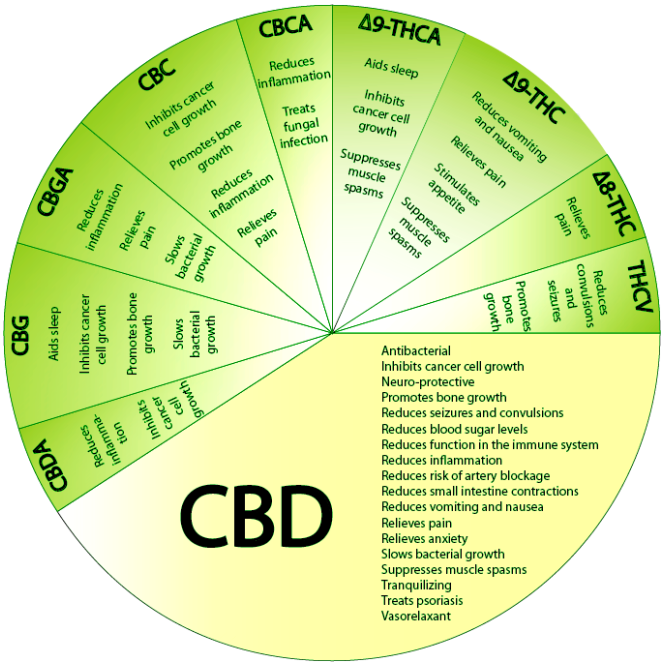
Crimescene?

Rather then speaking about medicinal cannabis I prefer to speak about cannabis that is used for medicinal purposes – in the sense that it alleviates or cures a pathology. Some of them have received a prescription from a doctor recommending them the treatment with natural cannabis or a derivate, but many of them haven't. There are many doctors in Europe who do not know the medicinal value of cannabis or are not willing to prescribe it to their patients. They see it mainly as a drug which is illegal, and therefore a danger to public health. Therefore it is impossible to estimate the number of patients who already use cannabis for medicinal purposes in Europe, let alone those who could be helped in the future. The rough estimate of the percentage of cannabis users who have medicinal reasons is 10/15 % , so if we take into account the official estimate of regular cannabis users in Europe (20 million according to the EMCDDA) there would be around 3 million of them. This number does not take into account the fact that many socalled recreational users report that moderate cannabis use is an important factor in maintaining their health or avoiding illnesses (and public health costs), as it makes them avoid stress, sleep better or eat better. Some people believe all regular use of cannabis has a therapeutic function.

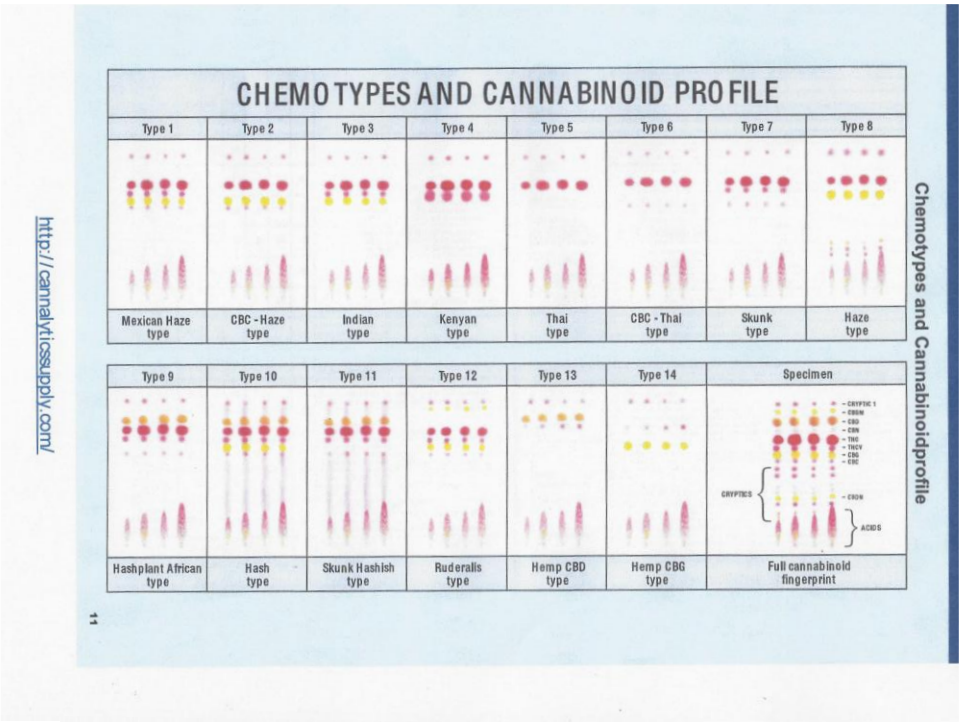
Cannabis has traditionally been used as a medicine in the Chinese empire as far back as 3.000 years BC, as well as in India where it began about 1.000 BC. The traditional way to prepare it is in India is *Bhang*, a juice consisting of dry leaves from which flowers are carefully removed, which is a very light way of consuming cannabis as it does not contain high percentages of cannabinoids.

In the 19th Century, cannabis was found in European pharmacies in the form of oils and tinctures, before it was prohibited, in most countries from the 1920s onwards.

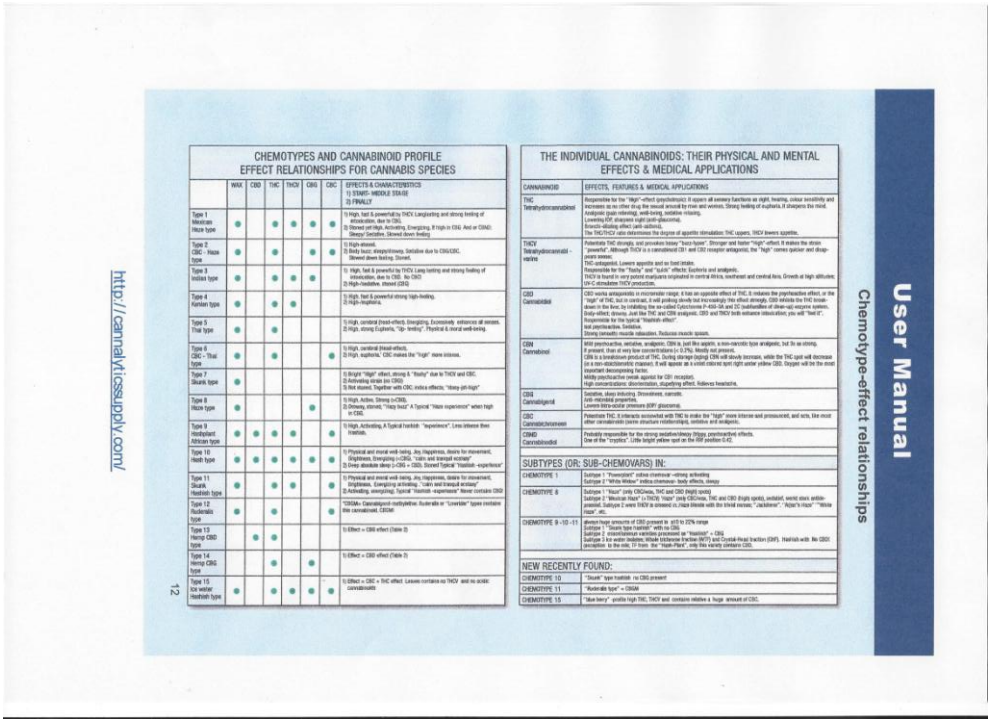
The illegal status of cannabis has had three adverse effects: its price has inflated, producers and consumers have mainly focussed on THC as its main active ingredient, and traditional knowledge of the plant and how to consume it has gone lost. Today most Europeans mix their weed (the flowers or buds of the female plants) or hashish (the dried resin) with tobacco, a method which is of course not recommendable if the use is for medicinal purposes. Therefore many patients switch to vaporisers, or take it through the gastronintestinal system (in edibles) – or directly under the tongue to enter the bloodvessels (oil or tincture, spray) or even rectal (suppositoirs).



The medicinal effects of cannabis can be explained by the presence of cannabinoids. At the moment Western science has found about between 85 and 100 different cannabinoids of which only a dozen have been recognised for having medicinal effects, and again 2 are the most famous: THC and CBD.



However, cannabis comes in hundreds of varieties or strains, each with different effects that depend not only on the presence of but also on the composition between cannabinoids, which again can vary all depending if one examines the flowers or the leaves, the flowers in the top of the plant or those below, or derivates where flowers of different plants have been included. Therefore the number of effects that can be obtained is endless.

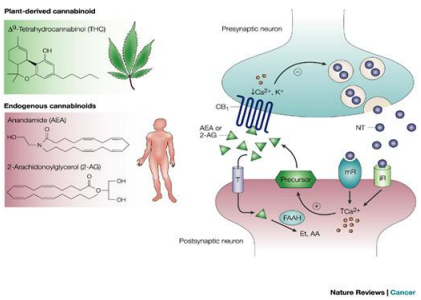


Most recent research suggests that the varieties can be summarised in 14 different chemotypes, each of them carrying a different composition leading to a different scala of effects. But the search goes even further than that, as also the way the plant or the derivate has been produced, the dosage, and finally the mental and physical state of the patient can all be of influence on the final effect. Identifying these parameters is something that demands the active collaboration of the patient. The concept of a doctor prescribing a certain dosage of a standardised medication and adapting it according to the evolution of the patient is not really useful when a natural product as cannabis is concerned. Nevertheless, this is the way modern doctors and pharmaceutical companies currently operate.

Patient Based Research

Treatment with and research on cannabis need to be based on the experiences of the patients themselves. Producers and caretakers need to receive direct feedback from patients, so they can identify which variety is most effective for them, which is the right consumption method, dosage etc.. For most patients it takes a while to find out what particular variety suits their needs best; so variation is particularly important.

Lab Research

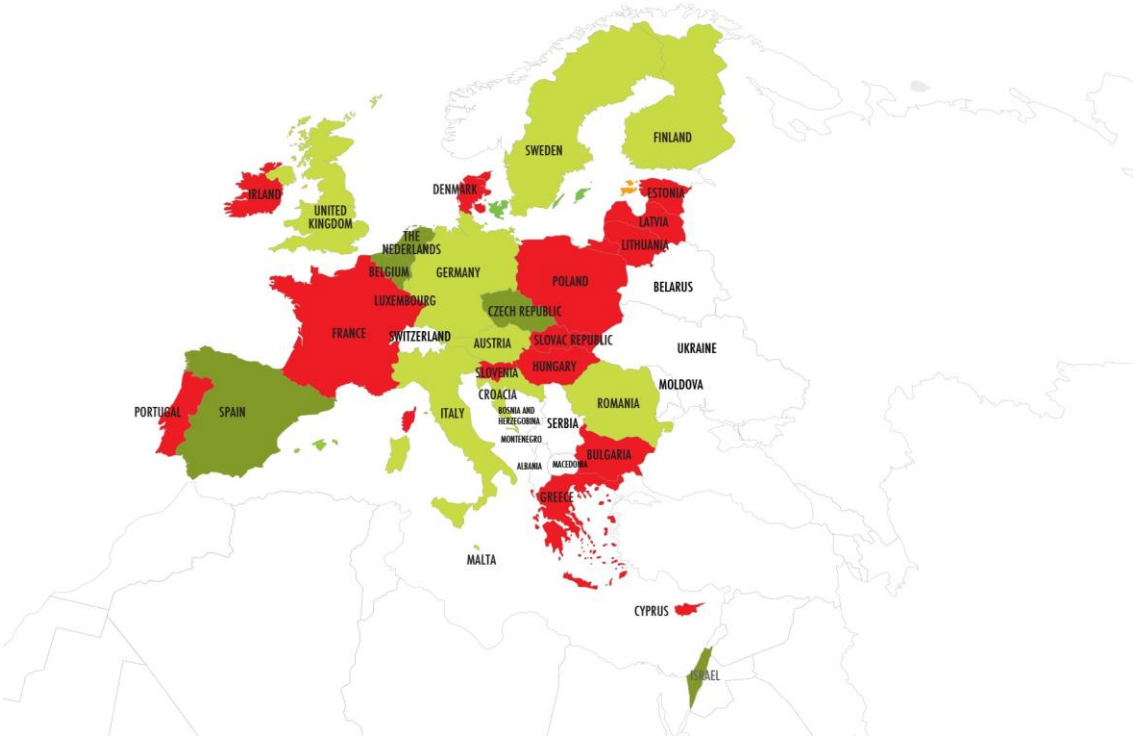


Of course the patient based feedback needs to be complemented by lab research, identifying the best way to grow, the strains that have particular value for patients, and of course control the presence of micro-organisms, chemical compounds and other elements that could reduce the

medicinal value of the cannabis. Needless to say that all these criteria require a legal framework – people working in production and distribution need to be held accountable, price and quality should be established in a transparent way and a free flow of information is essential. And of course neither patient nor anyone else involved in the production and distribution process needs to be afraid of the legal consequences.

On the illegal market, there is none of this. Of course there are also bonafide producers, but that is not the rule: the rule is that nobody is held accountable, consumers pay high prices for dubious quality, sometimes the product has even been contaminated to increase the weight. On the black market there is no transparency, no information on consumption methods and no research.

LEGAL SITUATION OF CANNABIS FOR MEDICINAL PURPOSES, EUROPEAN UNION, FEB 2016



Nevertheless this is the situation in the countries in red, where laws do not allow cannabis for either recreational or medicinal purposes to be produced or distributed. The only way to obtain cannabis in these countries is through committing a crime. Some of these countries have draconian laws and punishments, like 8 years in prison for someone who carries one joint in Slovakia, making no difference for medicinal users. In other 'red' countries, such as Portugal and Denmark, the attitude to users and even small dealers may be quite tolerant (more tolerant even than in countries where patients have a legal option to obtain cannabis) but still there is no legal framework around cannabis for medicinal purposes and patients can still be prosecuted for growing their own.

But change is in the air: all over Europe movements of patients are advocating for legal changes, politicians are making declarations suggesting that a discussion is on its way, and unofficial initiatives with cannabis based therapies are openly tolerated. According to media reports, for instance every 4th cancer patient in Slovenia tries or uses cannabis extract. There are no official data on this.

In some of the 'red' countries laws have been adopted to permit the sale of medications containing cannabis derivatives, but these derivates are not yet available due to discussions on the question if they should be financed by health insurance. Health authorities in France for instance believe that the production price of Sativex, a mouth spray based on cannabis to treat MS, is way too expensive: 350 euro for a package of 30 ml says the producer, 60 euro says the evaluation committee. On the other hand the pharmaceutical industry in France is allowed to carry out research with synthetic alternatives to cannabis, products that interact with the endocannabinoid system. This led in January 2016 to the death of one person and the hospitalisation of five others after participating in a clinical drug trial with a 'cannabis-imitator' for an unidentified pharmaceutical firm at a French clinic in January this year.

In the light green countries, patients have one legal way to obtain cannabis, being the derivate Sativex or the natural cannabis Bedrocan, through the pharmacy with a doctor prescription, while any other form is still heavily criminalised. Finally in the dark green countries, patients have more possibilities: they can obtain it through more or less tolerated channels such as the coffeeshop in the Netherlands and the so-called Cannabis Social Clubs in Spain and Belgium, or grow their own. Let us look closer at these alternatives.

SATIVEX

The first is Sativex (Scientific name Nabiximol) produced by British firm GW Pharmaceuticals. This is an oral spray and is recommended for multiple sclerosis and to control neuropathic pain and spasticity. In the UK, even though the National Health Service (NHS) provides access to Sativex in a limited number of areas, it is rarely prescribed. The British government seems uninterested in

softening its approach to either cannabis in general or its medicinal use in particular, so health insurance does not cover its costs.

Sativex (GW Pharmaceuticals)

Production capacity	20.000 kilos / year (2 greenhouses in UK, import from other countries?)
Number of patients	10.000 – 15.000 (mostly in Germany)
Price for patient	600 euro/30 ml (= 2,5 grammes)
Quality	Standardised product, no variation, high quality, mouth irritation
Research	Mostly lab, no access to feedback from patients

GW Pharmaceutical says it currently exports to 19 european countries, but it is not yet available in all of them. In Germany its use is most widespread, with some 5 to 10.000 patients, probably due to the fact that health insurances cover its cost, which is not the case in most other countries. So the current production facility, with up to 20 tonnes of cannabis each year, seems mostly for research purposes to find remedies for other illnesses.

The main reason why Sativex is not widespread is its high price. According to the prescription attached to Sativex in Belgium, each bottle of 10 ml contains about 400 mg of flowers and 400 mg of leaves, so almost 1 gram of natural cannabis. It delivers 90 dosages of 0,11 ml each containing 2.7mg of THC and 2.5mg of CBD. The price differs between 600 – 900 euros per set of three bottles, which account for a little more than one month if one follows a standard dosage of 8 sprays a day.

GW grows high quality cannabis, with lighting, hydroponic nutrition and ventilation that are computer controlled. It is a standardised product, based on a constant composition of cannabinoids, which is welcomed by doctors but not so much by patients. The comments on online forums show patients often complain about not finding the right effect with Sativex. Furthermore about 20 to 25 % experience oral discomfort.

GW has a cannabinoid research institute but this is mostly lab research. Communication between patient and producer takes place through various layers and can take a long time.

BEDROCAN

The country with longest experience of cannabis use both medicinal and recreational is the Netherlands, where physicians have been able to prescribe cannabis for patients and preparations have been legally available in Dutch pharmacies since 2003. The Dutch government has authorized the company Bedrocan BV to supply the cannabis, but until now a limited number of patients is using this possibility (4.000 out of 30.000) – although the company has experienced significant growth during the past years (mostly due to the demand from abroad).

Bedrocan

Production capacity	1 indoor location in NL, approx. 1250 kilo/year, 35 employees
Number of patients	4.000 in Netherlands – another 4.000 in rest of Europe
Price for patient	7,5 to 18 euros/gramme
Quality	6 varieties, standardised composition of THC/CBD, high quality, gamma-radiation
Research	Mostly lab (6 researchers), limited access to feedback of patients

The plants are grown in an indoor location in the North of the Netherlands. In total production, research and administration approx. 35 people are working in Bedrocan, which supplies approx 4.000 patients in the Netherlands and a similar number in Germany, Finland, Italy and Norway. The company is also involved in local set ups in Czech Republic and Canada.

Bedrocan produces 6 varieties of cannabis, each labelled with a standardized profile of Active Pharmaceutical Ingredients (APIs) and levels of contaminants (such as mould, bacteria, or others)

that are safe for inhalation into the lungs. It is supplied in packages of 5 grams, which cost between 38 to 90 euros for 5 grams (most patients need between 1 and 5 grammes a day), low THC / high CBD oil at Dutch Pharmacies is priced between 42 and 180 euro per bottle, a normal dosage is 2 bottles per month

The quality is good and standardised, however upon the request of the Dutch Health Ministry the cannabis is gamma radiated to kill all microorganisms before it leaves to the pharmacies. Many patients complain about this, as radiation also kills flavour and other natural elements of the cannabis flowers – which they feel are important for the effect.

Among the six researchers working on plant and product, one is gathering feedback of patients. So their input is again limited.

Current problems with access to Sativex and Bedrocan : stigma

- Bureaucratical procedures/ stringent control /pharmaceutical logic
- Doctors are uninformed and/or unwilling
- Resistance of insurance companies, health care system
- Only prescribed for limited number of diagnosis
- High price/ limited effects (lack of direct patient based research)

The fact that relatively so few patients (approx. 25.000 out of 3 million) are actually using the possibility to get cannabis or derivates in pharmacies can be explained by the following problems:

Countries apply complicated bureaucratic procedures for allowing the permits for patients to obtain the product, and producers follow a stringent pharmaceutical logic to produce a standardised quality. Very few doctors are aware of the medicinal use of cannabis and/or willing to prescribe it, patients encounter resistance of civil servants in the health care sector, or cannot get the price of their medicine refunded by health insurance companies. The number of diagnosis for which these products can be prescribed is still limited and of course there are the relatively high costs and the lack of variety – which again is explained by the lack of patient feedback.

In response to this problem, the Italian government last year revealed its surprising plan to commission the Army to cultivate cannabis intended for distribution to pharmacies across the country. The operation, in a secure location in a military pharmaceutical plant in Florence is expected to produce up to 100 kg of cannabis annually, which will be distributed to Italy's various regions with the intention that it be provided to the patient for free or at minimal cost.

Already, half of Italy's twenty regions have agreed to supply the medicine to their patients, but again doctors are the problem (some of the responsible doctors in the military programme have been declaring that a standard dosage of cannabis should be 30 grams a year, which is extremely low).

The medical world is strongly under the influence of pharmaceutical companies, and the question is if they are willing to promote a natural product that every body could grow in his own garden. Therefore independent research is urgently necessary, but this is only being done in some universities with a small scale investment. Recently with private funding from the US, an International Cannabis and Cannabinoid Institute (ICCI) has been announced in the Czech Republic, which is focussed on both lab and patient based research.

Coffeeshops

In Netherlands and Spain, Belgium, Malta and the Czech republic, authorities theoretically allow some other semi-legal alternatives of cannabis distribution. The best known are the Dutch coffeeshops – operating since the early 1980s with a licence to sell max. 5 grams to their clients who must be over 18. As the Dutch laws still prohibits cannabis cultivation, it is impossible for the coffeeshop to set up a transparent relationship with the grower.

Coffeeshops

Production capacity	Unknown
Number of patients	Unknown (est. 30.000, mostly in Netherlands)
Price for patient	5 - 20 euros/gramme
Quality	dozens of varieties, unknown composition and origin, variable quality
Research	Patient based research, without transparent relationship to grower, limited access to laboratorium (only testing)

I could give you some rough estimates but the truth is nobody knows what is the exact production capacity of the approx. 600 coffeeshops in the Netherlands, Taking into account the 3 million tourists who visit Amsterdam each year mainly to spend some time smoking legally we are talking about a figure that could be close to 100 tons of cannabis.

Again it is impossible to say how many of those are patients, but estimations are that there are about 30.000 to 70.000 patients using cannabis (with or without a prescription) in the Netherlands. They pay between 5 and 20 euro per gramme, as quite some coffeeshops are reported to give discount to patients. In contrast to the pharmacy, the coffeeshop offers dozens of varieties, which enables the patient to accelerate his search for the one that fits his needs and communicate this to the staff. So here the research is patient based. The quality tends to be good but can vary frome one shop to the other, and in any case is always better than cannabis sold on the street market. The coffeeshop can hardly control the origin or composition of the cannabis it sells, as there is generally no transparent relationship with the growers (who have to remain underground). Therefore the quality is dependent on the coffeeshop owner, who has a possibility to test through private test labs (for the presence of some cannabinoids, but not for everything such as micro-organisms or chemical compounds).

Cannabis Social Club

A second option that has surged in some countries, particularly Spain and Belgium, is the so-called Cannabis Social Club – a not for profit association of consumers and growers who use their right to form an association as well as the margin of tolerance in the law considering cultivation for personal use - to organise in a closed circuit the supply needed for the personal use of its members. In these clubs it is possible to establish a transparent relationship to the grower, so requirements for medicinal use (such as a ban on the use of chemicals and the production of 'tailor-made' varieties) can be fulfilled.

Some clubs even organise the production collectively. This means nobody earns any money but all members are involved. In this way consumers obtain the product for free, or at very low prices.

Cannabis Social Clubs

Production capacity	Unknown
Number of patients	Unknown (est. 75.000, mostly in Spain, Belgium, Netherlands)
Price for patient	0 to 8 euros/gramme
Quality	dozens of varieties, variable quality, known origin
Research	Patient based research with transparent relationship to grower, limited access to laboratorium (only testing)

The bulk of the Cannabis Social Clubs is situated in Spain, where about 1000 "cannabis clubs" exist – though most of them are not functioning as a not for profit but rather look like a coffeeshop. It is impossible to say anything about the numbers of members but in terms of quantities of cannabis produced they may not differ much of the Dutch coffeeshops.

The quality is variable, but generally biological and much better than illegal market where adulteration or contamination can happen.

CSC's can explore with varieties, but in contrast to coffeeshops, they can have a direct and transparent relationship to growers. What is lacking still is access to a standard testing facility for cannabinoids but also chemical compounds and microorganisms, in order to supplement their patient-based analysis.

HOMEGROWING

The final alternative option for patients who cannot or do not want to use any of the before mentioned and do not wish to buy at the illegal market is homegrowing, either in- or outside.

Homegrowing is not without risks. A certain tolerance to homegrowers exists theoretically only in Netherlands, Spain, Belgium, Czech Republic and Malta, but even here patients get raided by the police who are entitled to do a house search if it finds minimal quantities of cannabis on someone. At the same time these patients are slowly winning their courtcases: judges in Germany considered in 2014 that three patients could grow because they simply could not afford the price of Bedrocan and their insurance could not repay them, in Netherlands two weeks ago a patient was acquitted because he could prove that Bedrocan strains are not effective in his case, and even in Sweden a patient was acquitted in august 2015 because he was growing at home to treat his chronic pain when unable to pay the price of Sativex.

Homegrowing

Production capacity	4 kilos / year
Number of patients	Unknown (est. hundreds of thousands)
Price for patient	0,5 – 1 euro/gramme
Quality	Infinite number of varieties, known origin, variable quality
Research	Patient based research, with direct relationship to grower, limited access to lab (mostly testing)

If we estimate the number of medicinal users in Europe on a few million and we see how many are served with legal or semilegal distribution, we may conclude that the vast majority of them either grows himself or obtains it from a homegrowing friend. A skilled grower can obtain a yearly production of 4 kilo on 2 square meters. As most of the costs are in kind contribution, the price of homegrown cannabis falls to under 1 euro/gramme. The grower can apply an infinite number of varieties, some even breed new kinds, and so can very soon reach a point where the right strains are grown for the right person. However, most homegrowers have of course no access to labs.

Israel

Then if we look outside Europe, the first country that grabs our attention is Israel. Since 1960s Israel has been a leading global player in the research on cannabis for medicinal purposes and since 2007, 8 companies working with one national distribution system have started to develope a unique grow-how on to deliver a medical grade product, with much less bureaucratic or financial hurdles than in the UK or the Netherlands.

Israel

Production capacity	9.000 kilos /year, 8 companies, 160 employees
Number of patients	22.000
Price for patient	3 euro/gramme
Quality	dozens of varieties, known origin
Research	Patient based research with transparent relationship to growers, access to lab

Israel's medical cannabis program has a production capacity of 9.000 kilos (160 employees) to serve 22,000 registered patients. The country's warm climate coupled with its accumulated expertise assure availability for a decent price of 95 euros for 30 grams of flowers and 45 euros for a bottle of

oil. Some health insurance companies cover, most patients pay it of own pockets. Research is both patient and lab based. As it is easier to conduct cannabis research and clinical studies in Israel than in any other country in the world, governments and multinationals are currently flocking to Israel where clinical testing faces fewer hurdles.

Uruguay, Chile, Canada, USA




Of course there also the examples of Uruguay, where it is legal to grow for personal use, in Cannabis Social Clubs and through state controlled private cultivation for distribution in pharmacies since December 2013. Progress with the last option is very slow - after 2, 5 years there is hope that there will be cannabis in Uruguayan pharmacies this summer – probably also because the state bureaucracy is dominated by the wish to execute stringent control (only 5 varieties will be available, genetically marked so they can be traceable, and a max. Percentage of THC of 15). The price is decent: 1,2 USD/gramme.

In Chile a private foundation has received permission to grow cannabis for medicinal purposes – it has bought 40 hectares of land and has started with one hectare – results are to be expected in the course of the summer.

In Canada the Government agency Health Canada issues permits to growers of cannabis for medicinal purposes, these are licensed producers with whom patients wishing to fulfill a prescription must register with.

While in the US, in various states legislation allows for dispensaries, which can be either private or social club like operations. It is in the US that the ‘business of medicinal cannabis’ so to speak, is booming both in terms of knowledge and finance: just in California the legal medicinal cannabis market serving around 572.000 patients, is worth 1.2 billion euro, providing for thousands of jobs. However, it is also here where price levels have exploded, leading to prices of 20 USD/gramme in dispensaries in Colorado.

Growing costs
(Based on Rand Corporation, 2010, and own information)

	Homegrow, indoor	Professional, indoor	Professional, greenhouse	Professional, outdoor
Production intensity (kilo/year/sq.m)	2	2	1,5	0,05-0,2
Area (sq.meter)	2	100	2.000	10.000
Annual production (kilo)	4	200	3000	500-2.000
Material costs(euro /kilo)	300 - 500	250 - 450	35-150	28-100
Labour costs (euro/kilo)	In-kind	300	200	
Rent costs (euro /kilo)	In-kind	50-100	5-10	
Total costs (euro/gram)	**0,3 - 0,5**	**0,6-0,85**	**0,24-0,36**	**0,03-0,1**

Finally we come to the perspectives on the social and economic impact of production and distribution of cannabis for medicinal purposes in a legal framework. As such a framework is absent today, we need to base these perspectives on knowledge that comes from the grey zone and should be taken with more than a few grains of salt. The only reliable study I was able to find on this issue is that of the Rand Corporation, mostly based on the experiences in California. I have then updated this info to the European situation and checked it with people from seed bank companies, coffeeshops, cannabis social clubs and scientific cannabis researchers.

A homegrow set up typically consists of 1 person working an average of 1 hour a day (watering, pest control and evt. following a nutrition scheme) and harvesting 4 times a year. Potential production on 2 sq. meter, using 2 lamps of 600 watt is approx. 1 kilo per harvest, which makes 4 kilos / year. This set up will demand an investment of 1000 euros, that is amortised over 5 harvests, and of course monthly costs (like electricity, water and nutrition). No labour and rent costs involved. A skilled grower can obtain a final cost of about 300 to 500 euros/kilo.

A professional indoor plantation of 100 sq m can be run by 1 person working 8 hours a day, and will produce 200 kilo a year, at a cost that is slight higher than the homegrow set up, as labour and rent costs should be included.

A professional operation in a greenhouse (where material costs are limited to soil, water and some additional lightning, as well as security costs) could result in a price that is even lower then the homegrow operation, but the real profit can be made by switching to outdoor where growing costs can be compared to that of cherry tomatoes or lettuce: cannabis requires more or less the same amount of work per hectare. Outdoor, this work is done by mother nature. Here the final growing cost lies around 30 to 100 euro a kilo.

Processing costs
(Source: Rand Corporation, 2010)

	Manual	Machine
Harvest (hours per kilo)	3,3	3,3
Manicuring (hours per kilo)	11	3,3
Drying/curing (hours per kilo)	3,3	3,3
Total	17,6	9,9
Price per gramme	0,26	0,15

Every cannabis grower will tell you that the real work in cannabis production is during harvest time: cutting and manicuring the flowers is a time consuming job. However even those processing costs do not increase the production costs to even come near what the current market value of cannabis is today. Depending if it is done manually or by machine the added cost is 0,25 or 0,15 ct per gram.

So we can draw two conclusions here: it is possible to produce cannabis for less than 1 euro/gramme, even less than 10 cents if it is done outdoors. It does not require specialist knowledge, so it serves perfectly for a social economy experiment, involving people with poor job opportunities (for instance patients) in the work.

Manufacturing

The growing of cannabis does not require much work, but the manufacturing of derivates does, again perfect for local small scale companies/ collectives

Research and innovation

Also it will give work to researchers, both those working with patients and working in labs, as well as developers of new innovative products to consume cannabis for medicinal purposes. Any well established experiment with cannabis for medicinal use today has the opportunity to reach a unique position as a selling point of expertise to Europe and the world.

Always taking into account the fact that cannabis is a plant and that modern technology combined with green fingers enables people like this sweet old lady from the Netherlands to not only grow her own weed, but also develop derivates such as oil at low cost and in a safe way.

Sustainable economy

- High value product, low production costs
- Local horticulture
- Local manufacturing of elaborated products
- Potential for growth and export of knowledge to other countries
- Social economy: no specialised knowledge required

So if Greek authorities are looking for a product that could boost local and sustainable development, they don't have to look any further: cannabis for medicinal use has currently a high value compared to production costs, it will contribute to developing local horticulture (while industrial hemp is boosting local agriculture) and local manufacturing, it has a huge growth potential and opportunities to introduce elements of social economy.

Recommendations to Greece

- National Office for Cannabis for Medicinal Purposes
- Local experiment with collective of patients
- What counts first are the needs of people, not those of bureaucracies/pharmaceutical companies
- Good agricultural and manufacturing practices, as with vegetables
- Look at Israel, not UK/Netherlands
- Educate the medicinal world
- Decriminalise homegrowing – end the stigma
- Transparent relationship – grower/ patient
- Use current knowledge from legal cannabis industry (seedbanks etc.)
- Quality Control and Assurance
- Research

So these are our recommendations to you:

Find your own way, don't copy others. The only thing you need is land and water water – a small village could start the experiment.

Start with the set up of a National Cannabis Agency – a condition mentioned in the UN Conventions for countries who want to enable and monitor the production and distribution of cannabis for scientific and medicinal purposes.

Based on the figures from Israel, Greece may have 20.000 to 30.000 patients who are in need of cannabis right now. It must be possible to find a few hundred willing to take part in a local experiment, involving a decent research and development section, as well as observational and clinical studies, which the government can support without worrying about international treaties.

Put the needs of these people before those of bureaucracy or pharmaceutical companies. If you want examples of good ways to operate: look at Israel, not at the UK or Netherlands. No complicated administrative processes nor huge financial investments are needed to produce cannabis that can safely be used by patients and have the effects it is supposed to have.

Inform the medical world – doctors are the first ones who need to be convinced.

Decriminalise homegrowing. Respect the autonomy of the patient to produce his own medicine. People who are able to grow their own should be allowed to do so, as this will help to reduce the black market and the public health costs, and it will also help to end the stigma created by prohibition.

Use the current knowledge among private and public actors to make sure you have access to the state of the art research to ensure quality and control.

You have the climate – both physical and political to build cannabis programme on a human and plant scale.

Urgent demands to Europe

- Legal protection for patients carrying cannabis/derivates from one country to the other
- Support initiatives to explain the use of cannabis for medicinal purposes to the medicinal world
- Development of common standards for and access to analysis of cannabis and its components
- Support patient-based research into the experiences with cannabis for medicinal use obtained through pharmacies, coffeeshops or cannabis social clubs
- Propose a crucial change of course in global drug policy at UNGASS, 19-21 April, New York

These are our urgent demands to the European Parliament – they speak for themselves..

Pharmacy!

So does this picture – I look forward to your questions!

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