



Health Reform Monitor



Cannabis policy in The Netherlands: Rationale and design of an experiment with a controlled legal ('closed') cannabis supply chain

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ABSTRACT

Since the Dutch tolerance policy, allowing the purchase of cannabis in 'coffeeshops', is associated with problems of public order and safety as well as health risks, there has been a long debate about legalisation of cannabis production and supply. It was therefore decided to conduct an experiment with a controlled legal ('closed') cannabis supply chain for recreational use. This is of international relevance in view of the current illegal cannabis exports from the Netherlands, the importance of sharing knowledge about the effectiveness of cannabis policies, and the accumulation of evidence needed to evaluate and update international treaties. Here we describe and discuss the background, general approach and design of the experiment.

An independent expert committee elaborated how the closed chain will operate and be evaluated, based on the experience with the medicinal cannabis chain, and round table discussions with stakeholders (mayors, coffee-shop owners, cannabis consumers, growers, regulators, scientists, and addiction experts).

Ten trusted cannabis growers are contracted to produce and supply cannabis to the coffeeshops in intervention municipalities, with product quality control, law enforcement against criminal interference, and preventive efforts to reduce health risks being implemented. No changes will be made in the cannabis supply to the coffee-shops in participating control municipalities. A process evaluation will assess whether the chain from production to sale in the intervention municipalities was really closed. In a quasi-experimental study comparing intervention and control municipalities, the chain's effects on public health, cannabis-related crime, safety and public nuisance will be estimated.

The fieldwork period is expected to start early 2024 and will take four years, including reporting to the government and parliament. These will then decide whether and what further steps towards legalisation of the production and supply of cannabis will be taken.

1. Introduction

Regulation and legalisation of recreational cannabis use are issues

that divide societies and are handled very differently by states [1,2]. Several countries have legalised the production, sale and use of cannabis (e.g., Uruguay, [3,4] a number of states in the United States, [5,6] and

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Canada [7–10]) or are preparing to do so (e.g., Luxembourg, [11] Switzerland [12] and Germany [13]). In this context, there is much international attention for the development, evaluation and improvement of cannabis policies, and for international comparative learning. This will also contribute to building a common evidence base for international cooperation and updating international treaties and agreements.

In the Netherlands, after introduction of its tolerance policy [1] in 1967 allowing adult recreational cannabis users to buy small amounts of their preferred cannabis variant in ‘coffeeshops’, [14] there have been very few changes. But there has been a long debate whether the cannabis production and supply to these coffeeshops should be legalised. Political changes have recently led to the demand for an experiment with a controlled (‘closed’) cannabis chain to produce, supply and sell cannabis for recreational use on a legal basis in a number of municipalities. The aim of this experiment is to design a process to control the quality of the cannabis produced and to remove crime from the entire chain from production to sale, and to evaluate whether this process works and is effective in terms of the goals to be achieved. The results will provide input for further political decision making on cannabis. In this paper we describe the background and the general approach of the closed cannabis chain, and the design of the experiment. In addition, while this paper is not aimed at an in-depth analysis of current policy developments, we will briefly discuss the relevant policy context where relevant.

2. Background

In the Netherlands, there are about 570 coffeeshops spread across 102 municipalities [15]. While the sale of cannabis to consumers in coffeeshops is tolerated under certain conditions (prohibition of advertising, trading hard drugs and causing nuisance; sale only to Dutch people of 18 years or older; and limitation of quantities of stock and sales), [16] cannabis production and its supply to the coffeeshops are illegal. This original design of the cannabis chain – with a ‘tolerated front door’ and an ‘illegal back door’ of the coffeeshops – created substantial problems for public order and safety (permitted supply of illegally grown cannabis; illegal cannabis cultivation and related crime; nuisance, and fire-hazardous situations in neighbourhoods) and additional health risks for consumers (lack of independent product quality control and product-related health information) [17,18]. Various reports and parliamentary initiatives have therefore argued for regulation and a different organisation of the cannabis chain. In 2009, an advisory committee recommended small-scale experimentation to regulate supply to coffeeshops in conjunction with systematic scientific evaluation, [19] and in 2015, the Association of Dutch Municipalities urged the government to ‘decriminalise’ and regulate the cannabis supply chain [20].

These developments have led to the ‘Coffee Shop Chain Act’, initiated and adopted by the House of Representatives to regulate the entire cannabis chain via a ‘tolerance decision’. However, Senate consideration of this bill was suspended when in 2017 a new coalition agreed to first conduct an experiment with a controlled legal (‘closed’) cannabis supply chain, in order to evaluate whether and how production and distribution of quality-controlled cannabis can be realized and decriminalised, and what the effects of this are on public health, crime, safety and nuisance. This experiment should also learn from international experiences as highlighted in the Introduction. In addition, considering the international context is important in view of the large amount of cannabis illegally exported from the Netherlands to other countries, and given international laws and regulations [18].

After having obtained the consent of parliament, the law and regulations regarding the experiment came into effect on 1 July 2020. Since then, the Dutch government is elaborating and preparing the experiment with a ‘closed cannabis chain’ to be carried out in ten medium-sized or large municipalities, in which the entire chain from growth to sale to the individual consumer should be decriminalised. In doing so, the

government uses the recommendations of an independent expert committee that has advised how this closed chain should operate and how its effects can be evaluated [21].

3. General approach

The committee - consisting of academic and field experts in public health, addiction, criminology, law, surveillance and enforcement, and local government – reviewed the scientific literature, relevant policy documents, and the findings and experience related to the closed chain for (prescribed) medicinal cannabis that has been present in the Netherlands since 2003 [22]. In that medical chain, production, distribution and sale are closely aligned, products meet high quality standards (e.g., stability, no undesirable ingredients), and prices are in line with the market for recreational use. In addition, the committee organised round table discussions with mayors, coffeeshop owners, cannabis consumers, growers, regulators, scientists, and addiction experts. If necessary, additional experts for specific topics were interviewed. Furthermore, international governmental and academic experts involved in regulation and legalisation processes elsewhere (Canada, Uruguay, and the USA) were consulted [21]. Based on its findings, the committee advised on the design of the closed chain for recreational cannabis use. Subsequently, it outlined the study design of the experiment, interviewed mayors of municipalities that had applied to participate in the experiment, and nominated municipalities for inclusion in the experimental (intervention) or control group [23].

4. Closed cannabis chain

In Fig. 1 and Table 1, we have summarised the characteristics of the designed closed supply chain, which are more extensively explained in our first scientific advisory report [21]. It should be noted that some details may be modified or further elaborated before the actual field-work starts, in the context of the practical and logistic preparation in cooperation with the participating stakeholders. This will then be reported in subsequent publications. Below we describe the most essential elements of the designed closed cannabis chain.

4.1. Production

Participating grower companies must deliver a sufficiently varied range of quality-controlled cannabis variants to the sales outlets (coffeeshops) in the intervention municipalities, to ensure that consumers are well served and do not fall back to the illegal market. To promote appropriate competition for price and quality on the one hand and to safeguard the manageability and monitoring of the closed chain and effective law enforcement on the other hand, a maximum of 10 growers are contracted. These must positively pass an integrity screening in accordance with the Dutch Public Administration Integrity Assessments Promotion Act (Bibob), [24] meet defined criteria of quality, and be able to guarantee product diversity, guided and monitored by a consumer panel. As 42 candidate growers did meet the criteria, a random sample of 10 growers was selected.

The growers consult with the coffeeshops in the intervention municipalities about the types and quantities of weed and hash they will produce. As stated in Table 1, joints must be pre-rolled by the grower and delivered in the prescribed packaging. Edibles must also be prepared and packaged by the growers, and made with ‘raw’ cannabis, not with cannabis extracts.

Because the scientific data on the effects and risks of THC and CBD were not considered unequivocal, [21] the government saw insufficient reason to now set requirements for the content of THC or CBD or the ratio between them, also given the downside that these may result in consumers turning (again) to the black market.

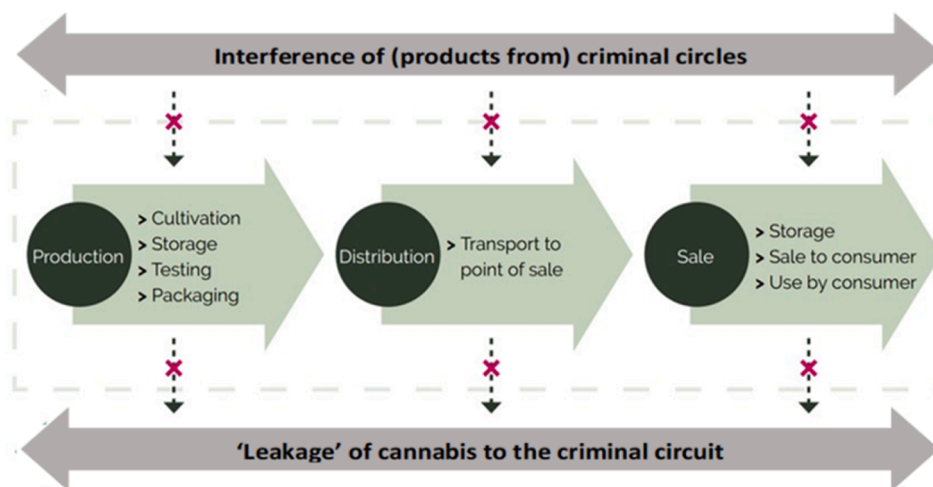


Fig. 1. Essential characteristics of the closed cannabis chain. (X: cutting off interference from and preventing leakage to the criminal circuit).

4.2. Distribution

To prevent criminal interference in the chain and diversion of legally produced cannabis to the black market, distribution from the grower to the vendor (coffeeshop) must be secure and transparent, and will therefore be closely monitored. Accordingly, the frequency of cannabis transport movements will be limited.

4.3. Sale

In the interest of distribution and coffeeshop security, the maximum trading stock is related to the weekly turnover for each specific sales point (coffeeshop), which should be fully transparent. Vendors must meet specified criteria of integrity and professional skills and provide objective health education and early detection of abuse and dependence. In order to avoid people drifting to the black market on the one hand, and to prevent increasing consumption and problem use on the other hand, the price of legalised cannabis should neither be too high nor too low, but in line with current (illegal) market conditions in coffeeshops.

To avoid excessive margins between cost and selling price, the committee advised to consider a surcharge, which could go towards subsidising prevention of cannabis use, abuse and addiction. However the government decided that the price will come about based on supply and demand, and negotiation between the designated growers and coffeeshop owners. The government’s reasoning was that, given the prohibitions still in force within the European Union, the type of transactions as applied in the experiment are still regarded as criminal activities in national law. In addition - given the limited, highly regulated and temporary nature of the experiment - there is not yet an economic, legal competitive market for the trade in soft drugs. For these reasons, the transactions in the experiment remain outside the levy and deduction of value added tax (VAT) and excise tax.

4.4. Preventive measures

Regulation and legalisation may lead to the misperception that cannabis is safe and not harmful because the authorities monitor the quality of the product. In addition, smoking-related adverse health effects can occur because in the Netherlands cannabis is currently mainly used in combination with tobacco [25]. Therefore, the intervention will be accompanied by health education, early recognition and referral of problematic use, and other measures aimed at the prevention of both cannabis- and tobacco-related health risks [26,27].

4.5. Surveillance and enforcement

Surveillance and enforcement in the experiment will be carried out collaboratively by national supervisory authorities and municipalities. These agencies and institutions will actively monitor compliance with the rules of the experiment and intervene when necessary. Possible sanctions are listed in Table 1. Ongoing information exchange with neighbouring countries must ensure international coordination of surveillance and inclusion of cross-border effects in the evaluation of the experiment.

5. Evaluation

In the following we summarise the characteristics of the designed evaluation of the closed cannabis supply chain. This is more extensively explained in our first scientific advisory report, [21] not excluding that some details may be modified before the actual field work starts.

5.1. Participating municipalities

Given the financial constraints and law enforcement requirements, the Dutch government a priori decided to allow a maximum of 10 (medium-sized or large) intervention municipalities. In response to an open call, 23 municipalities were willing to participate. After applying general inclusion criteria (being available for both the intervention and control condition; and participation of all coffeeshops in the municipality to avoid complex ‘hybrid’ local supervisory regimes), 17 municipalities from seven provinces were eligible to participate.

5.2. Comparative study

For the evaluation of process and effects, a pragmatic quasi-experimental design was chosen for two reasons. First, the number of participating municipalities was too small for randomisation as a mechanism to achieve comparability and representativeness. Second, since sufficient product diversity in the intervention municipalities is a precondition to compete with the illegal circuit, securing the maximally achievable ‘critical mass’ of 10 municipalities in the intervention group was deemed necessary.

To ensure a good balance between representativeness and critical mass, the following criteria were subsequently applied for the composition of the intervention group: at least one intervention municipality from each of the seven provinces from which municipalities were eligible should be included, larger municipalities had priority over

Table 1
Overview of the closed cannabis chain.

Production
<ul style="list-style-type: none"> ○ 10 contracted growers ○ These must meet strict criteria. Key elements (those in line with the Dutch medical cannabis chain indicated with +) are: <ul style="list-style-type: none"> ● Sufficient variation of cannabis products; the growers consult with the coffeeshops in the intervention municipalities about the types and quantities of weed and hash they will produce. ● Joints must be supplied by the grower pre-rolled and in packaging as prescribed. Edibles must also be prepared and packaged by the growers, and should only be made with pure/raw cannabis. Delivery of cannabis oil or other cannabis extracts is not allowed. ● There are no requirements for the THC and CBD content of the products. ● Accurate product information (e.g., % THC, % CBD, health risks, use) + ● Secure packaging + ● Secure storage + ● Track & trace system and transparent records to monitor the closed chain + ● Avoiding vulnerable transport movements + ● Directors must have passed an integrity (BIBOB) [24] screening; certificate of conduct required for personnel. + ● Exclusively growing cannabis for the experiment ● Testing/quality control (e.g., THC and CBD levels, pesticides) in an independent dedicated laboratory. + ● Safe working & living environment + ● Permit required from the municipality in which the company is located ○ Random sample of 10 growers if more than 10 candidate growers meet criteria
Distribution
<ul style="list-style-type: none"> ○ Growers are responsible for secure transport and distribution, using only a transport company with a special license.
Sale
<ul style="list-style-type: none"> ○ All coffeeshops in the intervention municipalities must participate. ○ These must meet strict criteria. Key elements (new ones in comparison with the pre-existing coffeeshop system indicated with*) are: <ul style="list-style-type: none"> ● Products purchased exclusively from designated growers * ● Maximum permitted trading stock sufficient for one week * ● Professional responsibilities and skills with regard to product information and prevention * ● Directors must have passed an integrity (BIBOB) [24] screening; certificate of conduct required for personnel. * ● The following is prohibited: advertising, trading hard drugs, causing nuisance, allowing people under 18 in the coffeeshop, selling more than 5 gs at a time, selling to non-Dutch residents. ● Permit required from the municipality in which the coffeeshop is located
Preventive measures
<ul style="list-style-type: none"> ○ Health education, and early recognition and referral of problematic use
Surveillance and enforcement
<ul style="list-style-type: none"> ○ Production, quality and distribution: Justice and Security Inspectorate, Netherlands Food and Consumer Product Safety Authority ○ Coffeeshops and sales: mayor of the municipality, Justice and Security Inspectorate ○ Non-compliance with the regulations may lead to withdrawal of grower designation or closure of a coffeeshop. ○ The police and the Public Prosecution Service are responsible for detecting and prosecuting criminal offences. Possible sanctions are: warning, financial/administrative sanctions; criminal sanctions.

smaller ones, and at least one municipality at each of the borders with Germany and Belgium should take part. Fig. 2 shows the geographic distribution of the participating municipalities, with 10 in the intervention group (with a total of 1,543,282 inhabitants, range 39,992 – 215,521) and 7 in the control group (with a total of 453,441 inhabitants, range 41,465 – 90,903). The control group will be further expanded through additional sampling, aimed at achieving comparability with the intervention group in terms of size of municipalities and geographical distribution as much as possible.

As residual incomparability between the two groups will be

Table 2
Overview of the evaluation of process and effectiveness.

Process
<ul style="list-style-type: none"> ○ Key questions to be answered: <ul style="list-style-type: none"> ● Is the chain really closed (e.g., do intervention municipalities succeed in eliminating the supply and sale of illegally produced cannabis)? If not, where not and why not? ● How are the processes within the chain doing (e.g., quality and efficiency of the processes of cultivation, storage and supply to the points of sale)? ● How is the sale of the delivered cannabis going (e.g., turnover, providing health information and prevention, buying behaviour)? What are the user experiences and perceptions regarding product quality and variety? ○ Data sources: surveys, interviews, focus groups
Effectiveness
<ul style="list-style-type: none"> ○ Quasi-experimental evaluation: intervention and control municipalities ○ Outcome measures: cannabis use, other substance use, driving under influence of cannabis, cannabis-related crime, dependency and addiction, (short term) health effects, safety and nuisance ○ Data sources: surveys, registries, incident-related data
Follow-up period
<ul style="list-style-type: none"> ○ Four years, including reporting, with a possible extension of up to 1.5 years
Independent scientific evaluation and guidance
<ul style="list-style-type: none"> ○ Independent research team ○ Independent Guidance and Evaluation Committee

unavoidable in this ‘real world’ quasi-experimental design, multilevel, multivariable statistical adjustment related to demographic and geographic features will be applied in the analysis of the effects on public health, crime, safety and public nuisance. Comparisons will also be made with adjacent municipalities, and with general national trends in municipalities with and without coffeeshops, for routinely monitored variables such as cannabis consumption, acute health events, cannabis chain-related crime, safety, and public nuisance.

Recently, following an earlier suggestion by the advisory committee, [23] the new government decided to investigate whether a large city can be added to the intervention group, in order to learn more about specific metropolitan challenges such as strong clustering of social and health problems and special enforcement issues. While this would increase the external validity of the experiment, such an addition should have also implications for the composition of the control group.

5.3. Process evaluation

A process evaluation of the implementation of the closed cannabis chain will assess the extent to which the chain in the intervention group was really closed, precluded illegal cannabis sales, and worked well for consumers. Did cannabis users indeed buy from a legal sales point (coffeeshop) or did they (also) buy cannabis at the black market or in coffeeshops in non-participating (adjacent) municipalities? What were the users experiences with the legal cannabis? Did ‘government-approved’ outlets attract more young buyers, and were they then made aware of health risks? Did neighbouring countries notice effects of the experiment? In addition to informing whether a closed cannabis chain was successfully realized, this evaluation can provide input for future improvements.

5.4. Effect evaluation

To evaluate the effects of the closed cannabis chain on public health, cannabis-related crime, safety and public nuisance, relevant changes during follow-up in the intervention and the control municipalities will be compared, based on surveys amongst users, citizens, coffeeshop owners and other stakeholders [28–33]. In addition, routinely recorded

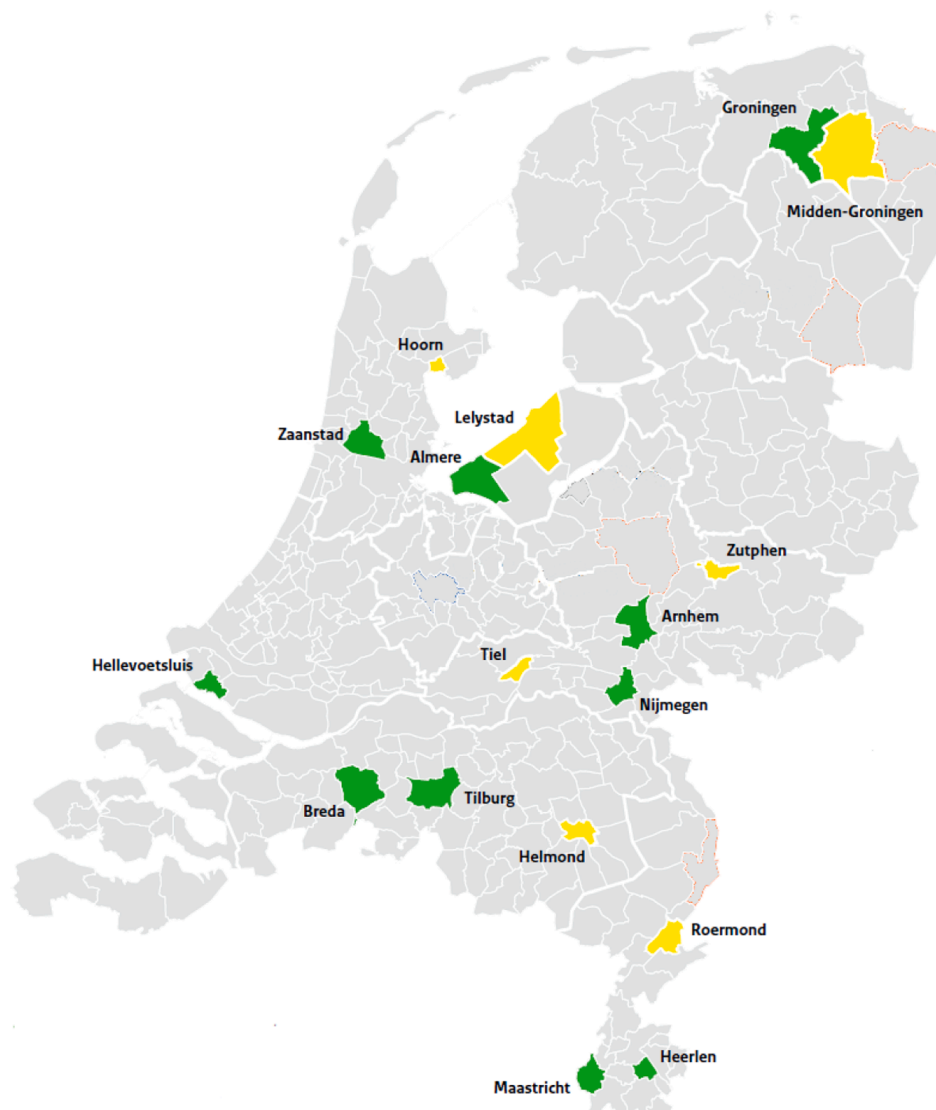


Fig. 2. Dutch experiment with a closed cannabis supply chain: geographic distribution of experimental municipalities participating in the intervention group (red) and nominated control municipalities (yellow). (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

information such as visits to hospital emergency departments, reported complaints about public order around sales points, and registered convictions will be used. Also for the comparison with adjacent municipalities and general national trends routinely monitored variables will be used. As a baseline for this comparison, the survey and the routinely recorded data for both the intervention and control municipalities in the year prior to the fieldwork will be used.

The study will provide substantiated insight into effects or the shorter term. Potential long-term effects on mental and physical health will be largely beyond the scope of the follow-up as planned, but additional monitoring can be considered. Given the size of the experiment, the effect evaluation will focus on directly cannabis chain-related crime, rather than total drug-related crime volume.

5.5. Follow-up period

For the evaluation, a follow-up period of four years is planned, including reporting to the government and parliament, with a possible extension of up to 1.5 years [34]. This timeframe is a pragmatic compromise between, on the one hand, the need for a sufficient number of years of follow-up to observe and compare important trends and, on

the other hand, the government's decision to politically assess the experiment's results in the period after the next national elections.

5.6. Independent scientific evaluation and guidance

In order to ensure a high quality and independent scientific evaluation of the experiment the responsible ministries of Health, Welfare and Sports and of Justice and Security have appointed an independent team of experienced researchers to investigate to what extent and in what way it is possible to realize a closed coffeeshop chain, and what effects the intervention has on the public order, safety, nuisance and public health. In addition, to ensure independent guidance and monitoring of the experiment, these ministries have appointed an independent multidisciplinary Guidance and Evaluation Committee, consisting of scientists with the relevant expertise, that supervises the research and will deliver its evaluation to the government and parliament.

5.7. Successful or unsuccessful intervention

The intervention is considered successful if the closed cannabis chain turns out to be feasible and shows beneficial effects on health, cannabis

chain-related crime, safety and public nuisance, or if the intervention turns out to be feasible and is not associated with deterioration compared to the usual approach. If the intervention is successful, it is to be expected that the government will take steps towards a nation-wide implementation of the closed cannabis chain, in a context of legalisation and regulation.

If the envisioned closed chain turns out not to be feasible or has relevant negative effects, this leaves a political choice between (1) a return to the situation where coffeeshops have an illegal back door, with its inherent criminal problems; (2) a complete ban on the production, sale and consumption of cannabis, which will be very difficult to enforce; (3) full legalisation of the production, sale and consumption of cannabis, so that the illegal circuit will de facto disappear because there is no longer an illegal circuit; or (4) repeat or extension of the experiment under conditions that facilitate a better implementation of a closed chain, such as intensified preventive or enforcement efforts, or an extension of the follow-up if it appears that it will take longer for certain important outcomes to become manifest.

6. Discussion

Following to a decision by the Dutch government coalition that was approved by the Dutch parliament, an experiment with a closed cannabis chain will be carried out in the Netherlands, with a four years follow-up period. Based on round tables with coffeeshop owners and consumers, it is expected that many vendors and consumers will be interested in cannabis products that meet adequate quality standards and are free from criminal interference.

Intervention municipalities have been selected, the control group will be further expanded through additional sampling, and trusted cannabis growers are being contracted. A process evaluation will examine the realization of a closed chain that excludes criminal interference and works well for the consumer. Recognizing inevitable methodological limitations, in a real world pragmatic quasi-experimental effect study the impact of the chain on cannabis use, health outcome, cannabis-related crime, and public order will be estimated.

While there are special requirements and regulations regarding the cannabis products, as listed in Table 1 and discussed in the section on 'Production', these are unlikely to affect the comparison between the intervention and control municipalities as to the overall results for the total assortment of available products. When assessing consumer appreciation at the level of specific products, regulation-related differences between both groups of municipalities must be taken into account.

Given the results after four years, government and parliament will decide whether and how further steps with regard to legalisation and regulation will be taken. The Dutch experiment is an intermediate step to ensure an evidence-informed policy process for national progress and further development. At the same time, cross-border cooperation and transparent international communication - to which this article aims to contribute - is crucial to promote a process of worldwide learning about optimal cannabis policies.

Here we add some reflections to be kept in mind given the ambitions and objectives of the experiment. First, as mentioned, some details of the experimental design may be modified or further elaborated before the actual fieldwork starts, in the context of the further practical and logistic preparation in co-operation with the participating stakeholders. One of the points of attention here is how the principle that 'the price should neither be too high nor too low' will be worked out in practice, since - while as discussed we recommended a price setting in line with current coffeeshop market prices, including a surcharge which could go towards subsidising prevention of cannabis use, abuse and addiction - the government decided that the designated coffeeshop owners and growers must negotiate the price.

Second, as described, the scale and duration of the experiment do not allow long-term health effects and effects on total crime to be reliably

evaluated. However, if potentially relevant, these effects can be investigated in subsequent follow-up measurements.

Third, a challenging issue is what will happen after the experiment is completed. If the outcome of the experiment is positive (e.g., successful in realizing a well-functioning, closed cannabis chain without negative effects), further policy steps towards national regulation and legalisation are to be expected. It would be illogical and ethically problematic to dismantle a successful closed cannabis chain, realized with joint forces in the participating municipalities, and let the illegal backdoor reoccur to its full extent, with all the associated risks. This would also undermine the motivation of municipalities and other stakeholders to participate in any future experiments. If the envisioned closed chain turns out not to be feasible or has negative effects, this leaves - as described in the section 'Successful or unsuccessful intervention' - a political choice between a full return to the situation of the illegal back door, a complete ban on production to consumption, full legalisation from production to consumption, a repeat or extension of the experiment with a better implementation of a closed chain, or an extension of the follow-up. Not an easy choice, but unavoidable from a political accountability point of view. When making this choice, the government and parliament will have to consider that maintaining the tolerance policy of illegal growing and delivery would be in increasing tension with the democratic rule of law, while a complete ban would probably be supported by few people, very difficult to maintain, and a boost for the black market producing and selling bad quality products.

A fourth, related point is that appropriate international alignment is necessary, not only for accurate effect measurements given possible overflow problems in Belgium, Germany and Northern France, but also given relevant UN conventions on drugs and EU legislation [18]. In this context, it must be considered that also other countries are searching for better cannabis policies and that international comparative learning can then be of mutual help. The Dutch government should therefore remain in close contact with other European governments about the intentions and implications of the experiment. This can also facilitate international cooperation aimed at revising international treaties and agreements with a view to developing knowledge, opinions and shared experiences.

A fifth essential point is that, in order to ensure scientific quality and credibility in a complex environment of political and private interests, the evaluation must be carried out fully independently. Therefore, as described, an independent research team and an independent multi-disciplinary Guidance and Evaluation Committee have been appointed. These are fully responsible for the scientific evaluation and reporting to the government and parliament.

Furthermore, underresourcing is always a threat to thorough research. The government is therefore responsible for sufficient funding for the administrative and enforcement capacity required for the experiment, and the extra costs for achieving the data collection and analysis [23]. The Guidance and Evaluation Committee must ensure that this requirement continues to be met.

Finally, while steady progress has been made since the commission's advice, due to COVID-19-related delays, field-related challenges in organising this huge and complex societal experiment, and the transition to a new government, the start of the fieldwork of the experiment - which was first foreseen in 2021 - is now expected in early 2024. This period will take four years, including reporting to the government and parliament.

7. Conclusion

The Dutch government and parliament have initiated an experiment with a controlled legal ('closed') cannabis supply chain, the design of which is described in this paper. This experiment is of interest for international researchers and policy makers addressing the issue of cannabis regulation and legalisation, as it contributes to international learning and to the accumulation of evidence that is needed to evaluate and update international treaties and agreements. The Dutch

experiment is an intermediate step to ensure an evidence-informed policy process for national progress. Given the results after four years of fieldwork, it will be decided whether and how further steps with regard to legalisation and regulation will be taken. In realizing this complex societal experiment and in taking further policy steps based on its evaluation, important challenges are being addressed.

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Declaration of Competing Interest

None of the authors has a financial or any other conflict of interest related to this work.

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